



**KIDMAS
SERVICES**

Version 25JN1

CUSTOM SERVICES

KINASE INHIBITOR PROFILING CUSTOMER INFORMATION PACKAGE

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TABLE OF CONTENTS

	PDF Page No.
Kinase Inhibitor Screening	
1. Introduction	3
2. KIDMAS description	4
3. Quantity of compound required	10
Shipping & Pricing	
4. Shipping information	10
5. Pricing information	11
Description of Follow Up Services	
6. Follow up services	11
Forms	
7. Forms to be completed	12
A. Kinexus Proteomics Services Agreement	13
B. Service Order Form (KIDMAS-SOF)	13
C. Service Identification Form (KIDMAS-SIF)	13
D. Confidential Sample Description Form (KIDMAS-CSDF)	14
E. Airway bill for couriers	14
F. Commercial Invoice	14
Appendices	
1. Service Order Form (KIDMAS-SOF)	16
2. Service Identification Forms (KIDMAS-SIF)	17
3. Confidential Sample Description Form (KIDMAS-CSDF)	18
4. Commercial Invoice – No ice (required for customers outside of Canada)	19
Commercial Invoice – Dry ice (required for customers outside of Canada)	20
5. Kinexus Service Agreement (first time KICP customers only)	21
6. List of antibodies that target kinases on Kinex™ KAM-2025 antibody microarray	32

KINASE INHIBITOR COMPOUND PROFILING SERVICE

1. INTRODUCTION

The Kinexus Kinase Inhibitor Displacement Microarray-based Screen (KIDMAS) is a convenient, novel and cost-effective solution to assist scientists in ascertaining of the specificity of lead compounds and their mechanisms of action for drug discovery. It permits the screening of hundreds of protein kinases present in cells and tissues in their natural state. This information is critical for the selection of better drug candidates for clinical testing. The method is based on the observation that an ATP analogue is able to covalently insert into the active site of a protein kinase and this will block the ability of an inhibitor compound or peptide that may also bind to the active site. Many FDA-approved kinase inhibitory drugs are ATP analogues that act in a competitive manner.

Approximately a third of all pharmaceutical R&D is now focused on protein kinases as drug targets. At least 568 human protein kinases target the phosphorylation of apparently nearly a million phosphorylation sites in the proteome, of which more than 250,000 have been experimentally confirmed by mass spectrometry. In view of this, it is critical to establish the specificity of any kinase drug candidate for clinical studies. On the one hand, the more specific the kinase inhibitors, the lower the chances of off targets that could compromise on the utility of the drug from toxicity and other undesired side-effects. On the other hand, compounds that more potently inhibit an off target protein kinase could have useful therapeutic applications in diseases that are distinct from those that were originally intended.

In the past, we offered radiometric phosphotransferase assays that monitored the ability of 360 different recombinant, human protein kinases to phosphorylate a protein or peptide with [γ - ^{32}P]ATP or [γ - ^{33}P]ATP. However, with the discontinued availability of Whatman P81 Phosphocellulose paper (which was ideal for such kinase assays) and the increased costs of purchase of these isotopes and radioactivity licensing, it became necessary to adopt other strategies. We tried using the ADP-Glo method from CalBiochem for many years. However, this method has its limitations, which makes it very problematic for screening for protein kinase inhibitors.

Firstly, the ADP-Glo method monitors the production of the ADP product of the kinase reaction rather than the direct phosphorylation of a substrate. Since many kinases also autophosphorylate during kinase assays with added ATP, it is unclear if the production of ADP is from phosphorylation of the substrate or the tested kinase.

Secondly, the ADP-Glo method uses ATP, which is often contaminated with ADP, which means that the signal to noise ratio over the background is often poor, especially if the tested kinase is not very active. Ideally, in enzyme reactions less than 5% of the substrate should be converted to product to ensure linear kinetics.

Thirdly, the ADP-Glo method requires three additional reaction steps in which, the remaining ATP is broken down, then the ADP that was produced during the kinase assay is converted back to ATP, and then the ATP is used to drive a luciferase reaction to produce light that is quantified. Since all of these reactions use ATP or ADP as a

substrate or product, this could be an issue as many protein kinases inhibitors act competitively with these nucleotides.

Another significant problem that we faced was that the protein kinases preparations that we used for kinase inhibitor profiling were produced in bacterial or insect cell systems, and consequently, they are usually tagged for purification purposes, often missing important cofactor subunits and/or not stoichiometrically phosphorylated at activating sites and possibly phosphorylated at inhibitory sites.

In view of these problems, we no longer offer kinase inhibitor screening services that rely on the ADP-Glo method, and the use of recombinant progein kinases preparations. We are working on developing phosphosite-antibody based detection of optimized peptide substrates of kinases. Presently, we are willing to work with clients to develop specific protein kinase assays of interest. However, using our KAM-2025 Antibody Microarray, we have developed another novel method for relatively low cost screening of human protein kinases that uses the endogenous, physiological kinases that are present in lysates from cells.

2. KIDMAS DESCRIPTION

The Kinexus Kinase Inhibitor Displacement Microarray-based Screen (KIDMAS) is based on the ability of most typical eukaryotic protein kinases to covalently bind to 5-(4-Fluorosulphonylbenzoyl)adenosine (FSBA) at a highly conserved, critical lysine residue located in these enzymes (Figure 1). FSBA is an adenosine-triphosphate (ATP) analogue and binds to the open, active sites of kinases. Kinases transfer the gamma-phosphate of ATP onto recipient substrate proteins and produces ADP as a product of the phosphotransferase reaction. There are at least 486 highly related human protein kinases that have very similar active sites that should be able to bind FSBA. The binding of a small molecule inhibitor to the active site of these kinases can sterically block the ability of a biotinylated FSBA probe to bind to native protein kinases that are pre-captured on the KAM-2025 Antibody Microarray, which can bind at least 342 different human protein kinases using 1112 antibodies. For 234 of these protein kinase targets, there are two or more antibodies on the Kinex™ KAM-2025 antibody microarray for the same kinase. In addition, there are at least duplicate measurements for each antibody used on the microarray. Table 1 lists the distinct kinase targets that are tracked on the KAM-2025 array. Appendix 6 list the antibodies that target these kinases on the KAM-2025 array.

Since the Kinex™ KAM-2025 antibodies captures native protein kinases from crude cell or tissue lysates, it is important to have active forms of the target kinases in these lysates. To achieve this, we use blends of lysates from growth factor- and stress-treated human cancer cell lines. Since most of the kinases targets are captured with multiple antibodies, this also affords cross-validation of the results. Kinexus may be able to arrange to have leads from this KIDMAS strategy further tested by in vitro screening with recombinant protein kinases and the ADP-Glo method or a customized method using peptide substrates of certain kinases and detection of phosphorylation with phosphosite-specific antibodies, especially for protein-tyrosine kinase substrates. The basic methodology behind the KIDMAS approach is illustrated in Figure 2.

Table 1. Listing of protein kinase targets covered on the Kinex™ KAM-2025 antibody microarray.

Target Protein Name	No. of Ab	Human UniProt ID	Protein Kinase Type	Target Protein Name	No. of Ab	Human UniProt ID	Protein Kinase Type	Target Protein Name	No. of Ab	Human UniProt ID	Protein Kinase Type
A6 (Twintin-1)	1	Q12792	• DSK	CSF1R (Fms)	6	P07333	• PYK	IRAK1	2	P51617	• PSTK
A6r (Twintin-2)	1	Q6IBS0	• DSK	Csk	3	P41240	• PYK	IRAK2	1	O43187	• PSTK
AAK1	1	Q2M2I8	• PSTK	DAPK2	1	Q9UIK4	• PSTK	IRAK3 (IRAK-M)	1	Q9Y616	• PSTK
Abl (Abl1)	11	P00519	• PYK	DCAMLK1 (DCLK1)	1	O15075	• PSTK	IRAK4	1	Q9NWX3	• PSTK
ACK1 (TNK2)	4	Q07912	• PYK	DDR1	3	Q08345	• PYK	IRR (INSRR)	1	P14616	• PYK
Akt2 (PKBb)	6	P31751	• PSTK	DDR2 (Tyro10)	2	Q16832	• PYK	ITK	3	Q08881	• PYK
Akt3 (PKBg)	1	Q9Y243	• PSTK	DMPK1 (DMPK)	2	Q09013	• PSTK	JAK1	6	P23458	• PYK
ALK	6	Q9UM73	• PYK	DMPK2 (MRCK-g)	1	Q6DT37	• PSTK	JAK2	8	O60674	• PYK
AMPKa1 (PRKAA1)	5	Q13131	• PSTK	DNAPK (PRKDC)	9	P78527	• PSTK	JAK3	7	P52333	• PYK
AMPKa2 (PRKAA2)	4	P54646	• PSTK	DYRK1A	1	Q13627	• DSK	JNK1 (MAPK8; SAPK1)	5	P45983	• PSTK
ANKRD3 (RIPK4)	2	P57078	• PSTK	DYRK2	3	Q92630	• DSK	JNK2 (MAPK9)	6	P45984	• PSTK
Arg (Abl2)	3	P42684	• PYK	DYRK3	1	O43781	• DSK	JNK3 (MAPK10)	3	P53779	• PSTK
ASK1 (MAP3K5)	5	Q99683	• PSTK	DYRK4	1	Q9NR20	• DSK	KHS1 (MAP4K5; KHS)	4	Q9Y4K4	• PSTK
ATM	8	Q13315	• PSTK	EGFR (ErbB1)	13	P00533	• PYK	Kit	6	P10721	• PYK
ATR	4	Q13535	• PSTK	EIF2AK3 (PERK; PEK; PKR)	3	Q9NZJ5	• PSTK	Ksr1	3	Q8IVT5	• PSTK
AurKA (Aurora A; ARK-1;	4	O14965	• PSTK	EphA1	3	P21709	• PYK	Ksr2	1	Q6VAB6	• PSTK
AurKB (AurB; AIK2)	4	Q96GD4	• PSTK	EphA2	4	P29317	• PYK	LATS1	4	O95835	• PSTK
AurKC (Aurora C; AurC;	4	Q9UQB9	• PSTK	EphA4	4	P54764	• PYK	LATS2 (KPM)	2	Q9NRM7	• PSTK
Axl (UFO)	4	P30530	• PYK	EphA5	2	P54756	• PYK	Lck	4	P06239	• PYK
BCKD (BCKDK)	3	O14874	• PSTK	EphA6	2	Q9UF33	• PYK	LIMK1	1	P53667	• PSTK
Bcr	3	P11274	• PSTK	EphA7	1	Q15375	• PYK	LKB1 (STK11; STRAD)	5	Q15831	• PSTK
BLK	4	P51451	• PYK	EphA8	2	P29322	• PYK	LMR2 (LMTK2; KPI-2)	1	Q8IWU2	• PSTK
Bmx (Etk)	2	P51813	• PYK	EphB1	2	P54762	• PYK	LOK	3	O94804	• PSTK
BRD2	1	P25440	• PSTK	EphB2	5	P29323	• PYK	LRRK2 (PARK8)	8	Q5S007	• PSTK
BRK	2	Q13882	• PYK	EphB3	2	P54753	• PYK	Lyn	3	P07948	• PYK
BRSK1	1	Q8TDC3	• PSTK	EphB4	2	P54760	• PYK	MAK	2	P20794	• PSTK
Btk	4	Q06187	• PYK	EphB6	2	Q15197	• PYK	MAPKAPK2 (RPS6KC1)	5	P49137	• PSTK
BUB1 (BUB1A)	1	O43683	• PSTK	ErbB2 (Neu; HER2)	9	P04626	• PYK	MAPKAPK3	1	Q16644	• PSTK
BUBR1 (BUB1B)	1	O60566	• PSTK	ErbB3 (HER3)	7	P21860	• PYK	MAPKAPK5 (PRAK)	2	Q8IW41	• PSTK
CaMK1a (CAMK1)	3	Q14012	• PSTK	ErbB4 (HER4)	5	Q15303	• PYK	MARK1	3	Q9P0L2	• PSTK
CaMK1d	2	Q8IU85	• PSTK	ERK1 (MAPK3)	20	P27361	• PSTK	MARK2	2	Q7KZ17	• PSTK
CaMK2a (CaMKII)	6	Q9UQM7	• PSTK	ERK2 (MAPK1)	1	P28482	• PSTK	MARK3	3	P27448	• PSTK
CAMK2b	1	Q13554	• PSTK	ERK3 (MAPK6)	2	Q16659	• PSTK	MARK4	2	Q96L34	• PSTK
CAMK2d	1	Q13557	• PSTK	ERK4 (MAPK4)	2	P31152	• PSTK	MEK1 (MAP2K1; MKK1)	9	Q02750	• DSK
CaMK2g	1	Q13555	• PSTK	ERK5 (MAPK7; BMK)	7	Q13164	• PSTK	MEK2 (MAP2K2; MKK2)	5	P36507	• DSK
CaMK4 (CaMPK4)	3	Q16566	• PSTK	FAK (PTK2)	7	Q05397	• PYK	MEK5 (MAP2K5; MKK5)	6	Q13163	• DSK
CaMKK1 (CaMKK)	3	Q8N5S9	• PSTK	Fer (TYK3)	3	P16591	• PYK	MEKK1 (MAP3K1)	3	Q13233	• PSTK
CDC2L5 (CHED; CDK13)	2	Q14004	• PSTK	Fes	3	P07332	• PYK	MEKK2 (MAP3K2)	6	Q9Y2U5	• PSTK
CDC7	3	O00311	• PSTK	FGFR1 (FLT2)	5	P11362	• PYK	MEKK4 (MAP3K4)	1	Q9Y6R4	• PSTK
CDK1 (CDC2)	12	P06493	• PSTK	FGFR2 (BEK)	5	P21802	• PYK	MEKK6 (MAP3K6; ASK2)	3	O95382	• PSTK
CDK2	6	P24941	• PSTK	FGFR3	6	P22607	• PYK	MELK	4	Q14680	• PSTK
CDK4	3	P11802	• PSTK	FGFR4	3	P22455	• PYK	MERTK (MER)	3	Q12866	• PYK
CDK5	4	Q00535	• PSTK	Fgr	3	P09769	• PYK	Met (HGF receptor)	11	P08581	• PYK
CDK6	6	Q00534	• PSTK	FLT3 (STK1; CD135)	5	P36888	• PYK	MKK3 (MAP2K3; MEK3)	8	P46734	• DSK
CDK7 (MO15)	4	P50613	• PSTK	Frk	5	P42685	• PYK	MKK4 (MAP2K4; MEK4)	6	P45985	• DSK
CDK8	3	P49336	• PSTK	Fused (STK36)	1	Q9NRP7	• PSTK	MKK7 (MAP2K7; MEK7)	4	O14733	• DSK
CDK9	4	P50750	• PSTK	Fyn	7	P06241	• PYK	MLK1 (MAP3K9)	1	P80192	• PSTK
CDK10 (PISSLRE)	3	Q15131	• PSTK	GCK (MAP4K2)	3	Q12851	• PSTK	MLK2 (MAP3K10)	1	Q02779	• PSTK
CDK11A (Cdc2L2;	1	Q9UQ88	• PSTK	GCN2 (EIF2AK4)	2	Q9P2K8	• PSTK	MLK3 (MAP3K11)	2	Q16584	• PSTK
CDK11B (PITSLRE;	1	P21127	• PSTK	GRK1 (Rhodopsin kinase)	3	Q15835	• PSTK	MLK4 (MAP3K21)	1	Q5TCX8	• PSTK
CDK12 (Cdc2L7; CRK7)	2	Q9NYV4	• PSTK	GRK2 (BARK1; ADRBK1)	2	P25098	• PSTK	MLTK	1	Q9NYL2	• PSTK
CDK14 (PFTAIRE1)	1	O94921	• PSTK	GRK5 (GPRK5)	1	P34947	• PSTK	Mnk1	1	Q9BUB5	• PSTK
CDK15 (PFTAIRE2;	4	Q96Q40	• PSTK	GSK3a	6	P49840	• PSTK	Mnk2	1	Q9HBH9	• PSTK
CDKL1 (KKIALRE)	3	Q00532	• PSTK	GSK3b	7	P49841	• PSTK	MOK (RAGE)	4	Q9UQ07	• PSTK
CDKL2 (KKIAMRE)	3	Q92772	• PSTK	Haspin (GSG2)	1	Q8TF76	• PSTK	Mos	2	P00540	• PSTK
CDKL3	1	Q8IVW4	• PSTK	HGK (MAP4K4; NIK; ZC1)	2	O95819	• PSTK	MRCKa (PK428)	1	Q5VT25	• PSTK
CDKL5	1	O76039	• PSTK	HGS (Hrs)	1	O14964	• PYK	MRCKb (CDC42BPB)	1	Q9Y5S2	• PSTK
Chk1 (CHEK1)	6	O14757	• PSTK	HIPK1	1	Q86202	• PSTK	MSK1 (RPS6KA5)	2	O75582	• PSTK
Chk2 (CHEK2)	4	O96017	• PSTK	HIPK2	1	Q9H2X6	• PSTK	MSK2 (RPS6KA4)	2	O75676	• PSTK
CK1a (CSNK1A1)	2	P48729	• PSTK	Hpk1	1	Q92918	• PSTK	MST1 (STK4; Krs2)	4	Q13043	• PSTK
CK1d (CSNK1D)	6	P48730	• PSTK	HRI (HCR; EIF2AK1)	1	Q9BQI3	• PSTK	MST3 (STK24)	2	Q9Y6E0	• PSTK
CK1e (CSNK1E)	2	P49674	• PSTK	ICK	5	Q9UPZ9	• PSTK	mTOR (FRAP)	5	P42345	• PSTK
CK1g3 (CSNK1G3)	1	Q9Y6M4	• PSTK	IGF1R	7	P08069	• PYK	MuSK	3	O15146	• PYK
CK2a1 (CSNK2A1)	4	P68400	• PSTK	IKKa (Ikbka; CHUK)	7	O15111	• PSTK	MYT1 (PLPB1)	1	Q99640	• PSTK
CLK1	3	P49759	• PSTK	IKKb (Ikbkb; IKKB)	3	O14920	• PSTK	NDR1 (NDR; STK38)	1	Q15208	• PSTK
CLK2	1	P49760	• PSTK	IKKe (Ikbke)	1	Q14164	• PSTK	Nek1	1	Q96PY6	• PSTK
CLK3	1	P49761	• PSTK	IKKg (NEMO)	1	Q9Y6K9	• PSTK	Nek2	5	P51955	• PSTK
CLK4	1	Q9HAZ1	• PSTK	ILK1 (ILK)	5	Q13418	• PSTK	Nek4	1	P51957	• PSTK
COT (MAP3K8; TPL2)	4	P41279	• PSTK	InsR (IR)	4	P06213	• PYK	Nek6	1	Q9HC98	• PSTK

Target Protein Name	No. of Ab	Human UniProt ID	Protein Kinase Type	Target Protein Name	No. of Ab	Human UniProt ID	Protein Kinase Type
Nek7	1	Q8TDX7	• PSTK	ROR2 (RON2)	1	Q01974	• PYK
NIK (MAP3K14; NLK; LAK1)	3	Q99558	• PSTK	Ros (ROS1)	4	P08922	• PYK
NLK	2	Q99558	• PSTK	RSK1 (RPS6KA1; p90RSK)	6	Q15418	• PSTK
NuaK1 (ARK5)/Nuak2	1	O60285	• PSTK	RSK2 (RPS6KA3)	3	P51812	• PSTK
Obscn	3	Q5VST9	• PSTK	RSK3 (RPS6KA2)	1	Q15349	• PSTK
OSR1 (OXSR1)	1	O95747	• PSTK	RSK4 (RPS6KA6)	1	Q9UK32	• PSTK
p38a MAPK (MAPK14;	9	Q15759	• PSTK	RYK	1	P34925	• PYK
p38b MAPK (MAPK11)	4	Q15759	• PSTK	SCYL1	1	Q96KG9	• PSTK
p38d MAPK (MAPK13)	6	O15264	• PSTK	SGK1	1	O00141	• PSTK
p38g MAPK (MAPK12;	7	P53778	• PSTK	Sgk223	1	Q86YV5	• PSTK
p70S6K (S6Ka; RPS6KB1)	9	P23443	• PSTK	Sgk269 (PEAK1)	1	Q9H792	• PSTK
p70S6Kb (S6Kb2;	1	Q9UBS0	• PSTK	Sgk288 (ANKK1)	1	Q8NFD2	• PSTK
PAK1 (PAKa)	5	Q13153	• PSTK	SGK3 (CIK; SGKL)	2	Q96BR1	• PSTK
PAK2 (PAKg)	4	Q13177	• PSTK	SIK2 (QIK)	4	Q9H0K1	• PSTK
PAK4	1	O96013	• PSTK	SIK3 (QSK)	5	Q9Y2K2	• PSTK
PAK5 (PAK7)	3	Q9P286	• PSTK	SLK	1	Q9H2G2	• PSTK
PAK6	1	Q9NQU5	• PSTK	SMG1	4	Q96Q15	• PYK
PBK (TOPK)	3	Q96KB5	• PSTK	Src	6	P12931	• PYK
PCTAIRE1 (CDK16; PCTK1)	2	Q00536	• PSTK	SRPK1	2	Q96SB4	• PSTK
PCTK2 (PCTAIRE2; CDK17)	2	Q00537	• PSTK	SRPK2	2	P78362	• PSTK
PCTK3 (PCTAIRE3; CDK18)	1	Q07002	• PSTK	STLK3 (DCHT)	1	Q9UEW8	• PSTK
PDGFRA	5	P16234	• PYK	STLK6 (ALS2CR2)	1	Q9C0K7	• PSTK
PDGFRB	3	P09619	• PYK	Syk	4	P43405	• PYK
PDK1 (PDHK1)	5	Q15118	• PSTK	TAO1 (TAOK1)	2	Q7L7X3	• PSTK
PDK2 (PDHK2; PyDK2)	2	Q15119	• PSTK	TAO2 (TAOK2)	1	Q9UL54	• PSTK
PDK3 (PDHK3)	1	Q15120	• PSTK	TAO3 (JIK, TAOK3)	2	Q9H2K8	• PSTK
PDK4 (PDHK4)	2	Q16654	• PSTK	TBK1 (IKKd)	3	Q9UHD2	• PSTK
PIK3CA	1	P42336	• PI-K	Tec	1	P42680	• PYK
Pim1	1	P11309	• PSTK	TIE2 (TEK)	3	Q02763	• PYK
Pim2	3	Q9P1W9	• PSTK	TLK1	1	Q9UKI8	• PSTK
Pim3	1	Q86V86	• PSTK	TNK1	1	Q13470	• PYK
PINK1 (BRPK)	5	Q9BXM7	• PSTK	TRIM28 (TIF1B)	3	Q13263	• PSTK
PIP5K	2	Q9Y2I7	• PSTK	TRIM33 (TIF1G)	1	Q9UPN9	• PSTK
PIP5K2a (PIP5K2A)	1	P48426	• PI-K	TrkB (NTRK2)	3	Q16620	• PYK
PKCa (PRKCA)	7	P17252	• PSTK	TrkB (NTRK2)	1	Q16620	• PYK
PKCb (PRKCB1)	5	P05771	• PSTK	TrkC (NTRK3)	1	Q16288	• PYK
PKCd (PRKCD)	5	Q05655	• PSTK	TRRAP	3	Q9Y4A5	• PSTK
PKCe (PRKCE)	2	Q02156	• PSTK	TSSK3	1	Q96PN8	• PSTK
PKCg (PRKCG)	3	P05129	• PSTK	TTBK1	3	Q5TCY1	• PSTK
PKCh (PRKCH; PRKC-eta)	1	P24723	• PSTK	TTBK2	1	Q6IQ55	• PSTK
PKCi (PRKCiota)/PKCI	1	P41743	• PSTK	TTK (MPS1)	3	P33981	• DSK
PKCt (PRKCC; PKC-theta)	5	Q04759	• PSTK	TYK2	7	P29597	• PYK
PKCz (PRKCZ)	3	Q05513	• PSTK	Tyro3	2	Q06418	• PYK
PKD1 (PRKCM; PKCm)	4	Q15139	• PSTK	ULK1	2	O75385	• PSTK
PKD2 (PRKD2)	1	Q9BZL6	• PSTK	ULK2	1	Q8IYT8	• PSTK
PKD3 (PRKCN)	1	O94806	• PSTK	ULK3	1	Q6PHR2	• PSTK
PKG1a (PRKG1A)	5	Q13976	• PSTK	ULK4	1	Q96C45	• PSTK
PKG2 (PRKG2)	2	Q13237	• PSTK	VACAMKL	1	Q8NCB2	• PSTK
PKN1 (PRK1)	2	Q16512	• PSTK	VEGFR1 (Flt1)	6	P17948	• PYK
PKN2 (PRK2)	1	Q16513	• PSTK	VEGFR2 (KDR)	4	P35968	• PYK
PKR1 (PRKR; EIF2AK2)	3	P19525	• PSTK	VEGFR3 (Flt4)	4	P35916	• PYK
Plk1 (PLK)	5	P53350	• PSTK	Vrk1	1	Q99986	• PSTK
Plk2 (SNK)	2	Q9NYY3	• PSTK	Wee1	2	P30291	• DSK
Plk3 (CNK; FNK)	4	Q9H4B4	• PSTK	WNK1	6	Q9H4A3	• PSTK
Plk4 (SAK; STK18)	2	O00444	• PSTK	WNK2	3	Q9Y3S1	• PSTK
PRKACA (PKA; PKACA)	2	P17612	• PSTK	WNK3 (PRKWNK3)	3	Q9BYP7	• PSTK
PRKACB (PKA)	2	P22694	• PSTK	WNK4 (PRKWNK4)	2	Q96J92	• PSTK
PRKX	2	P51817	• PSTK	Yes	4	P07947	• PYK
PRKY	1	O43930	• PSTK	YSK1 (STK25; SOK1)	3	O00506	• PSTK
PRP4K (PRP4; PRPF4B)	1	Q13523	• PSTK	YSK4 (MAP3K19)	3	Q56UN5	• PSTK
PYK2 (PTK2B; FAK2)	5	Q14289	• PYK	ZAP70	6	P43403	• PYK
Raf-A (Araf)	5	P10398	• PSTK	ZC2 (TNIK; GK)	1	Q9UKE5	• PSTK
Raf-B (B-Raf; BRaf; RafB)	7	P15056	• PSTK				
Raf1 (c-Raf; RafC)	14	P04049	• PSTK				
Ret (GDNF receptor)	5	P07949	• PYK				
RIOK1	1	Q9BRS2	• PSTK				
RIOK2	1	Q9BVS4	• PSTK				
RIPK1 (RIP; RIPK)	4	Q13546	• PSTK				
RIPK2 (RICK; RIP2; CARD3)	2	O43353	• PSTK				
ROCK1 (ROKb)	2	Q13464	• PSTK				
ROCK2 (ROKa)	3	O75116	• PSTK				
Ron (RONa; MST1R)	5	Q04912	• PYK				

Figure 1. Structures of FSBA (Panel A) and ATP (Panel B).

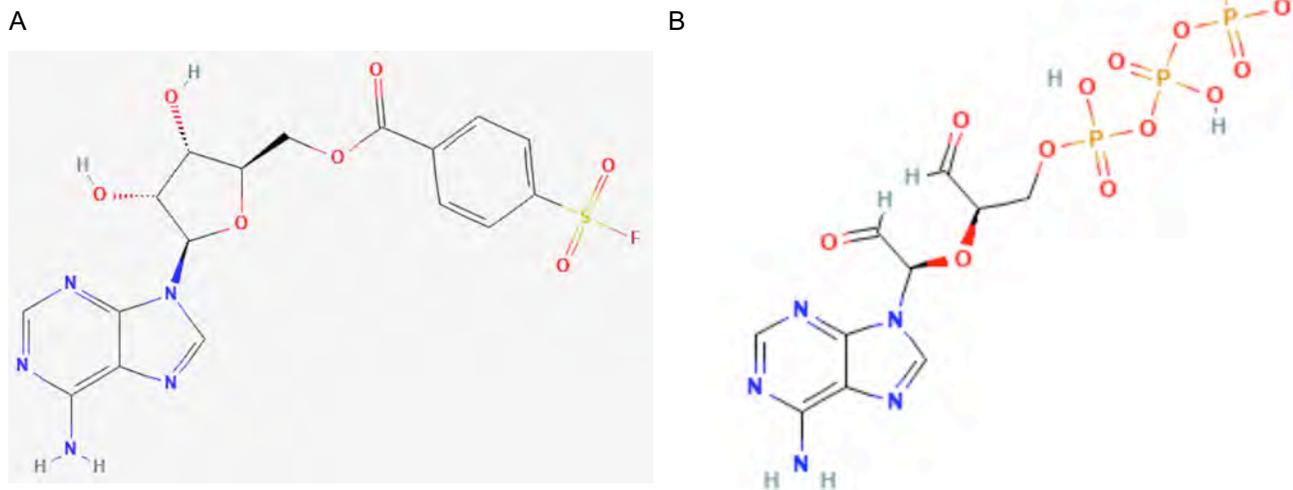
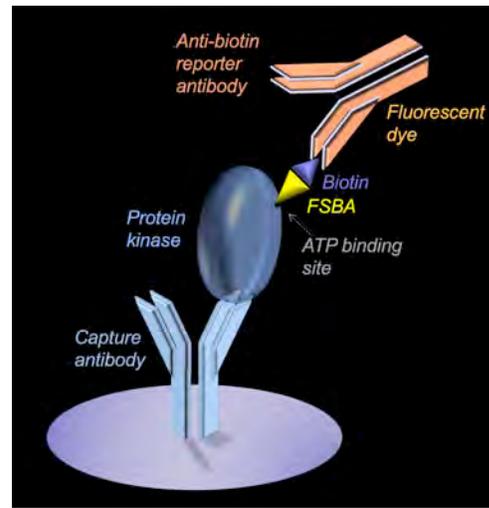
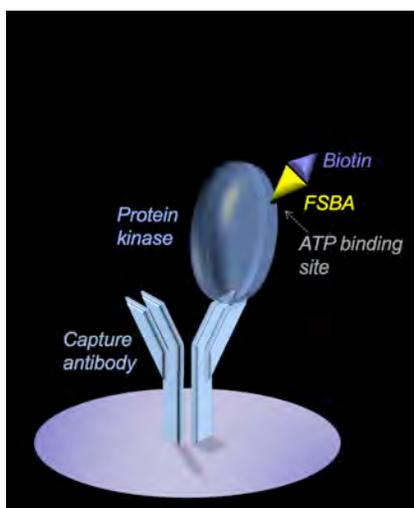
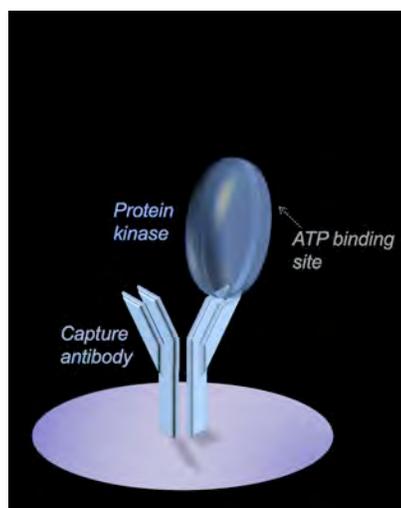


Figure 2. Methodology of the KIDMAS for discovery of potential kinases sensitive to test drugs.

Step 1. Capture endogenous kinases in cell lysates on antibody microarray.

Step 2. Incubate antibody microarray with biotinylated FSBA.

Step 3. Incubate antibody microarray with dye-labelled anti-biotin antibody and scan.



Prior incubation of protein kinases with drug before capture on antibody microarray and exposure to biotinylated FSBA.

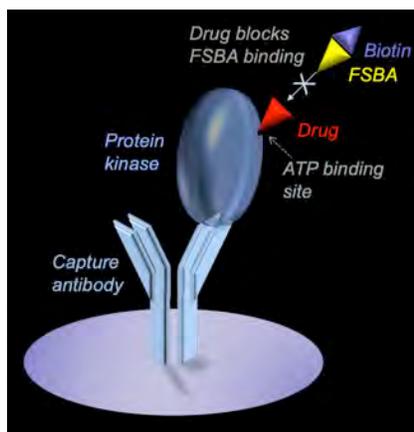


Figure 3 shows labelling in a section of an early Kinex™ KAM-880 antibody microarray following incubation with a cell lysate from epidermal growth factor-treated cells to capture active protein kinases that was subsequently incubated with biotinylated FSBA. Prior incubation of the lysate proteins with a drug results in reduction of the recorded signal due to inhibition of biotinylated FSBA binding to drug-sensitive protein kinases.

Figure 3. Scanned image of a section of a Kinex™ KAM-880 following incubation with lysate protein from serum-starved A431 cells treated with 100 nM EGF for 10 min and later probed on the microarray with biotinylated FSBA and fluorescent dye-tagged anti-biotin antibody.

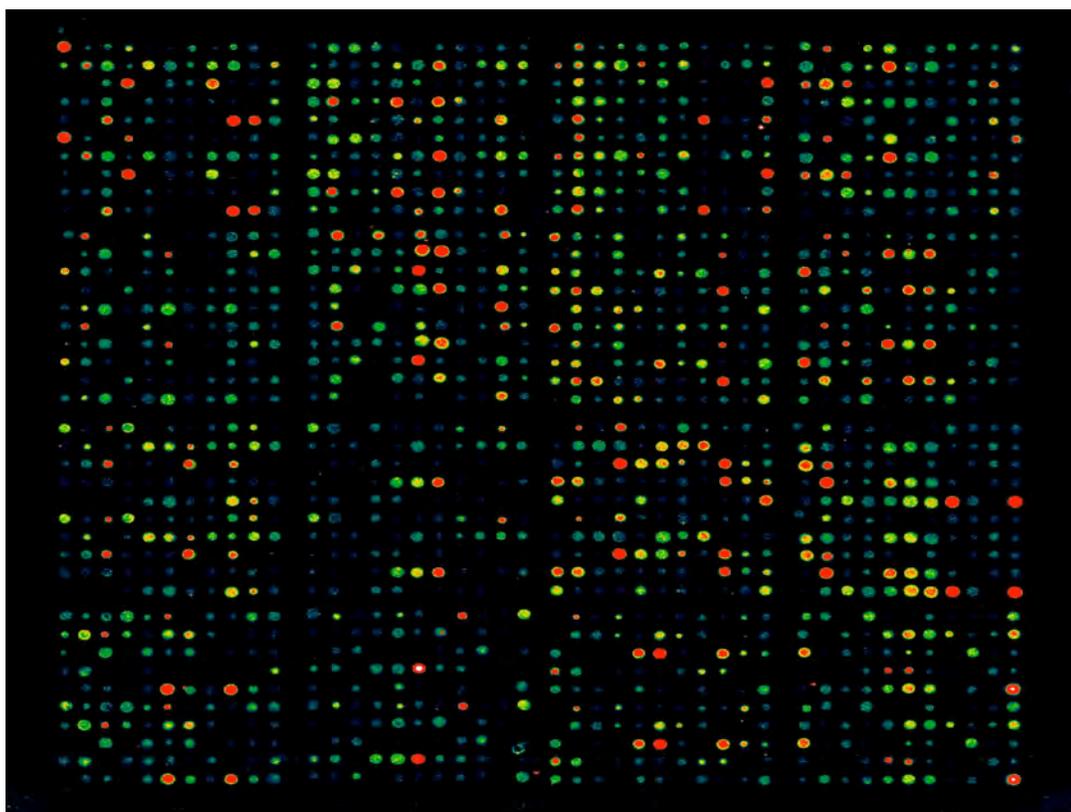
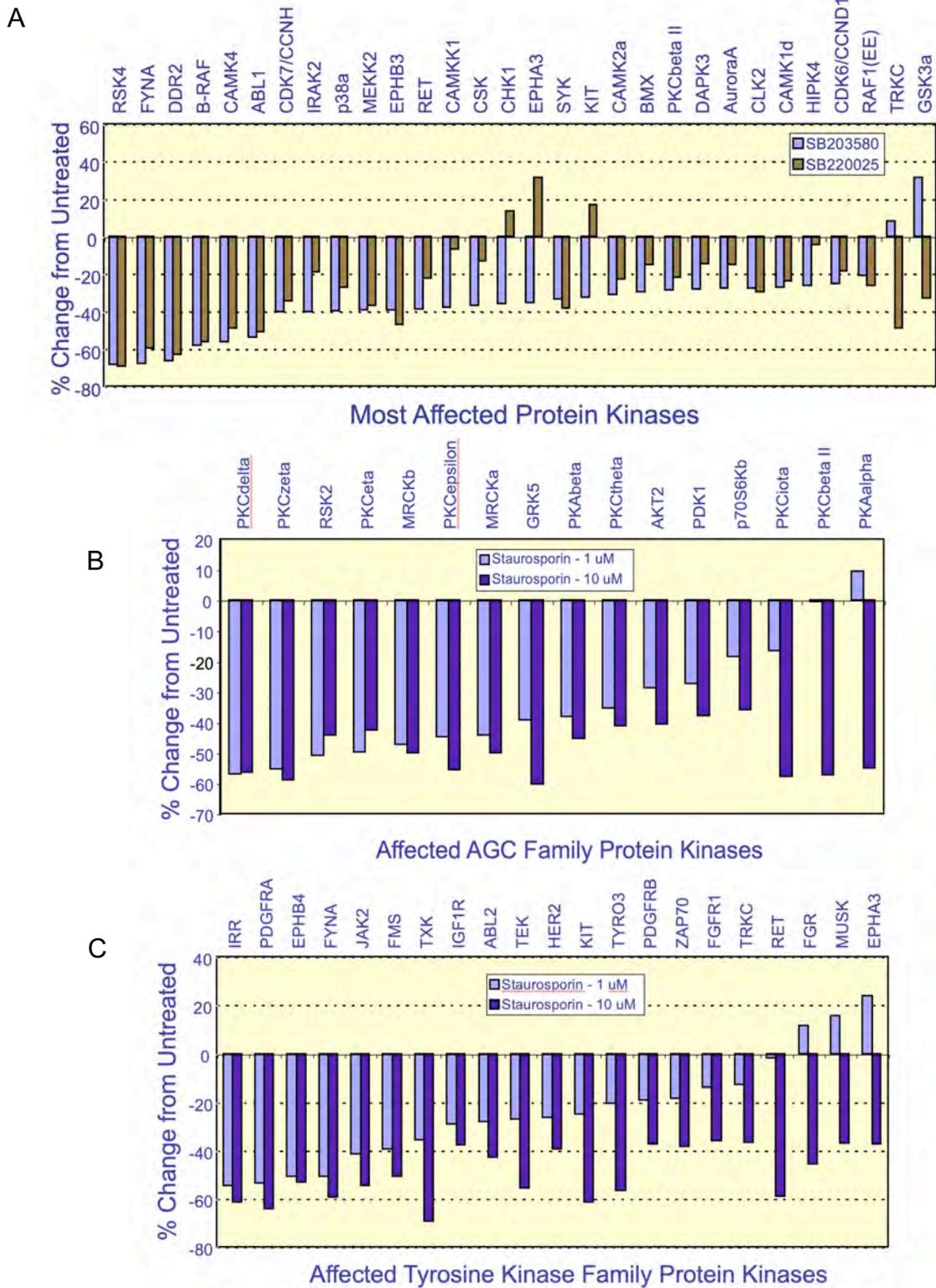


Figure 4 shows the results of screening 200 active human recombinant protein kinases that were individually printed on an array with more specific inhibitors (SB203580 and SB220025 for p38 MAPK) (Panel A) and with staurosporine, which a non-specific protein-serine/threonine- (Panel B) and protein-tyrosine kinase inhibitor (Panel C), using interference of the binding of FSBA to the array to monitor potential inhibition. These findings confirmed the results of earlier studies with these agents that are documented on the www.DrugKiNET.ca website.

Figure 4. Inhibition of FSBA binding to purified human recombinant protein kinases printed as a macroarray. Two hundred different protein kinases on the array were incubated initially with the SB203580 (Panel A), SB220025 (Panel A) or staurosporin (Panels B & C), and then subsequently probed with biotinylated FSBA following by detection with fluorescent dye-tagged anti-biotin antibody.



A large body of information and instruction is provided with this Kinase Inhibitor Compound Profiling service Customer Information Package. Your careful review of this package will ensure that we can offer the highest level of quality in providing this and our other unique proteomics services to you. Should you have any questions or concerns, we would be pleased to hear from you. Thank you in advance for letting Kinexus become one of your trusted service providers.

3. QUANTITY OF COMPOUND REQUIRED

The amount of each compound required for the KIDMAS service depends on the desired concentrations at which each compound will be tested. The final volume of the KIDMAS assays are 400 μ l, and the stock concentration of the compound to be tested should be at least 10-times the final concentration of the highest dose desired for KIDMAS analysis. **However, we recommend that a minimum volume of 50 μ l of 10X concentrated compound stock solution in water or 2% DMSO is provided in a 1.5 ml Eppendorf vial; please Paraffin wax wrap the closed lid for further protection. If the compound is supplied in powder form, please provide sufficient material so that the compound can be prepared at as 10X concentrated solution with a volume of at least 100 μ l.**

4. SHIPPING INFORMATION

The aforementioned procedure has been designed to reduce the use of shipping materials and courier costs, and to ensure that your precious compound samples arrive in a safe and stable form at our laboratory facilities. Note that clients are responsible for payment of courier costs. The sample vials should be sent to the address listed below by any express courier that accepts dry ice shipments if necessary. We recommend Federal Express for shipments originating in North America, and World Express is the preferred courier choice outside of North America. Ship the samples to the following address:

Kinase Inhibitor Compound Screening Services
Kinexus Bioinformatics Corporation
Suite 1, 8755 Ash Street
Vancouver, B.C. Canada V6P 6T3
Telephone: (604) 323-2547
Facsimile: (604) 323-2548
E-mail info@kinexus.ca

Please ensure 3 copies of a signed commercial invoice accompany your shipment which specifies your samples are non hazardous. Since the samples are not for resale, the value of your shipment should be priced at approximately \$1.00 per sample in order to avoid paying additional duties and taxes on entry into Canada. **It is highly recommended that customers e-mail their courier airway bill number and the date of departure to info@kinexus.ca so we can track your shipment in transit and ensure it arrives in a timely manner.** We will send a confirmation e-mail once your shipment arrives at our facility.

5. PRICING INFORMATION

In view of the customized nature and the opportunity for volume discounts for the KIDMAS service, it is necessary to obtain a quotation from Kinexus for the desired work. To obtain a quotation, clients should complete the Kinase Inhibitor Compound Profiling - Service Order Form (KIDMAS-SOF) in the sections under "Customer Information" and "Requested Work and Pricing Information" up to the point indicated on this form. In addition, clients should complete the appropriate Kinase Inhibitor Compound Profiling - Service Information Form (KIDMAS-SIF) and Compound Sample Description Form (KIDMAS-CSDF). These forms should be transmitted by facsimile to 604-323-2548 or by e-mail to info@kinexus.ca attention to "KIDMAS Service." Completion and submission of the KIDMAS-SIF-A and KIMAS-SIF-B forms will permit us to determine your specific needs and provide an accurate estimate of the costs.

Issued quotations are valid for 30 days from issuance. In the event that a special promotion on the KIDMAS service is offered at a lower price within 30 days of the receipt of Samples for KIDMAS service from a client, the lower promotional price will be applied at the time of billing the client.

6. FOLLOW UP SERVICES

Once you receive your Kinase Inhibitor Compound Profiling results back, you may find that your compound(s) targets additional protein kinases as perhaps even greater potency and selectivity than the intended target(s). This could offer new opportunities for development of intellectual property and clinical exploitation of your compounds. Only about two dozen of the protein kinases are presently seriously being targeted with drug leads in clinical trials. But, over 400 different diseases have been correlated with defects in cell signalling pathways that involve protein kinases. However, for the majority of the human protein kinases, it is unclear how they participate within cell signalling pathways, and no physiological substrates have been identified. With our unique suite of integrated systems proteomics and bioinformatics services, Kinexus can further assist you in your disease biomarker and therapeutic drug discovery programs in so many ways in a cost-effect and timely fashion.

For example, with our Custom Kinase Substrate Profiling Service that uses our Kinex™ KAM-2025 Antibody Microarray, we can identify a panel of physiological phosphoprotein substrates for over 360 different human protein kinases. This service can further identify the actual site of phosphorylation by the target kinase as well as commercial phospho-site antibodies for its detection in follow up studies. This is extremely useful for development of even more specific *in vitro* kinase activity assays. Moreover, this aids in the identification of a panel of biomarkers for the activity of the target kinase in the tissues of animals and isolated cells treated with compounds *in vivo*. Using our free access on-line PhosphoNET services (www.phosphonet.ca), you can identify the protein kinases that we have determined with our proprietary algorithms are most likely to target more than 960,000 known and predicted human phosphorylation sites.

Our Kinex™ KAM-2025 Antibody Microarray services provide both qualitative and semi-quantitative analyses of the expression and phosphorylation states of cell signalling proteins in cell and tissue lysates. This can be useful to ascertain whether a lead compound actually targets the intended kinase *in vivo*, has potentially toxic effects in living systems, and how wide spread its actions may be. The qualitative analyses from the Kinex™ services include TIFF

and JPEG files of the scanned Kinex™ KAM-2025 Antibody Microarray that features the detected target signalling proteins in control and experimental (e.g., drug-treated) samples artificially labeled in two distinct colours by Adobe Photoshop and presented side-by-side in a coloured overlay. The quantitative analysis of the strength of the fluorescence signals for each target protein is provided in duplicate in a Microsoft Excel spreadsheet and includes the (average) percent change from the control sample, the percent range in error, and fold-changes ratios.

Kinexus offers two types of Western blotting follow-up services to cost-effectively validate the results from the Kinex™ KAM-2025 Antibody Microarray. Clients can choose the Kinetworks™ Custom KCPS 1.0 (Multi-Antibody) Protein Screen, where any 18 antibodies can be selected and we will optimize it to their model system. Alternatively, with our Kinetworks™ Custom KCSS 1.0 (Multi-Sample) Protein Screen, customers send up to 14 different samples and choose from over 1,400 antibodies for expression and phosphorylation available for sale from Kinexus.

Once the results are confirmed by Western blotting, clients can correlate their own data with hundreds of other data points from hundreds of different model systems using our on-line www.KiNET-AM.ca database. For more information about this and our other bioinformatics services, please contact one of our customer service representatives at info@kinexus.ca.

7. FORMS

Forms to be Completed

All customers are required to complete the following forms for each order placed:

- A. Kinexus Proteomics Services Agreement - Customers are required to complete and sign our standard Proteomics Services Agreement before their first order can be processed. Unless otherwise specified, this Agreement is valid for all future orders with a standard term of 10 years. (See **Appendix 5**)
- B. Service Order Form (KIDMAS-SOF). The Service Order Form (SOF) allows us to track all of the requested work to be performed with your order, and your contact and billing information. (See **Appendix 1**)
- C. Service Identification Form (KIDMAS-SIF). The Service Identification Forms (SIF) permits us to determine which kinases and compounds are to be assayed. (See **Appendix 2**)
- D. Confidential Sample Description Form (KIDMAS-CSDF). The Confidential Sample Description Form (CSDF) provides information on the specific compounds to be tested for safety and efficiency purposes. It is not necessary to disclose the name or structure of the compound to be analyzed. (See **Appendix 3**)
- E. Airway bill for Federal Express or another courier.
- F. Commercial Invoice (required for all customers located outside of Canada). Two possible forms are provided depending on the stability of the compounds to be tested for shipping without freezing. (See **Appendix 4**)

All orders with compounds should have as a minimum: 1 SOF, 1 SIF, and 1 CSDF forms completed, along with a courier airway bill and commercial invoice. A new Kinexus Proteomics Service Agreement is not necessary if the client has previously placed an order with Kinexus and submitted a signed Kinexus Proteomics Service Agreement at that time.

A. Kinexus Proteomics Services Agreement

- A signed Kinexus Proteomics Services Agreement is required before your first order with Kinexus can be processed.
- This Agreement is required to be signed and dated by an authorized representative, typically a Senior Officer, Senior Scientist, or Principal Investigator, before the first order can be processed, but does not have to be signed again for repeat orders. The Kinexus Service Agreement is typically valid for 10 years. Note that this is a general agreement that permits our clients to use any of our proteomics services, and certain provisions do not apply to synthesis of peptides and peptide arrays, which are considered fully confidential. If you require changes or modifications to be made to our standard Service Agreement, please email us at sales@kinexus.ca to request a Microsoft Word version of the document so your requested changes can be made directly into the agreement and emailed to us for our final approval.

B. Service Order Form (KIDMAS-SOF)

Please ensure:

- Address and contact name and numbers are specified
- Billing or accounting information is completed
- Any quotations are listed in the billing sections
- Include a Purchase Order, Visa or MasterCard number for payment
- The form is signed and dated

C. Service Identification Form (KIDMAS-SIF)

Note that:

- * Fillable MS-Word versions of all of these KIDMAS-SIF, KIDMAS-SOF and KIDMAS-CSDF forms are available by contacting Kinexus directly please contact us by email at info@kinexus.ca or by phone at 604-323-2547 Ext.11.
- For the KIDMAS service, please assign a unique name (Client ID Name) to be entered on the Service Order Form (KIDMAS-SOF).

For each compound sample submitted to Kinexus for KIDMAS analysis, please ensure the following:

- Sufficient amounts of each compound sample is provided and described on a KIDMAS-CSDF form.
- The form is certified correct and signed and dated

When Kinexus received the all information complete and correct, you will receive a confirmation of the specifics for your order, including pricing. We will not proceed with your order until we have received verification of your approval to go ahead and process your order.

D. Confidential Sample Description Form (KIDMAS-CSDF)

For each compound submitted, please ensure the following:

- Each sample tube is labeled and properly identified with the “Client ID Name” on the form in Section A, including final concentration and volume if it is a solution or weight if it is a powder.
- Up to two different compounds can be listed on the same page. Use additional copies of this form for more compounds to be analyzed
- You have indicated whether there are any safety concerns with the compounds on this form
- The form is certified correct and signed and dated

E. Airway bill for Federal Express or any courier that you choose to ship your compounds to Kinexus

Complete the airway bill and specify:

- Priority overnight delivery
- Bill transportation charges to your institute
- Place sufficient dry ice if necessary to last several days into a Styrofoam shipping container
- Seal the edges of the Styrofoam container with tape to preserve dry ice longer
- Dry ice is a “*hazardous*” item, so ensure proper labels are attached to the outside of the box
- Do not specify Saturday delivery or hold at courier location
- For Federal Express shipments telephone 1-800-GO-FEDEX or visit them on-line at www.fedex.com or www.fedex.ca to schedule a pick up or complete your forms
- For shipments coming from within Canada or the United States, please ship any day from Monday to Wednesday. **Do not ship on a Thursday or Friday.**
- For international shipments coming from outside of North America, the best day to ship is on a Monday to ensure arrival in Canada for delivery later the same week
- It is recommended that customers e-mail the date of your shipment and the courier airway bill number with the number of samples to Kinexus at info@kinexus.ca to ensure we can track your package should it get held up in Canadian Customs
- For any customer located outside of Canada, 3 copies of a commercial invoice is required to accompany your shipment (see below)

FOR U.S AND INTERNATIONAL CUSTOMER ONLY

F. Commercial Invoice (not required by Canadian customers)

Please complete the attached commercial invoice with the following information:

- Date of exportation
- Shipper/Exporter name, address, phone number

- Country of export/Country of origin
- Name of courier and the airway bill number
- Number, type and total weight of package(s)
- Total declared value of shipment (number of samples x \$1.00 per sample) and please specify currency
- Date, name, signature, and title of authorized person
- Include three (3) copies of the commercial invoice with the airway bill

NOTE: Do not change the value of your shipment to more than \$1.00 per sample as this will prompt the custom brokers to charge Kinexus with a duty and GST fee on your package. Since the samples are processed internally and not returned to the customer or resold, there is no real commercial value.



Form: KIDMAS-SOF

KINEXUS KIDMAS SERVICE ORDER FORM

Subject to terms of the Kinexus Proteomics Services Agreement

Kinexus Order Number
For Kinexus internal use only.

Client Information Repeat Customer OR New Customer Client Order ID Name _____

Dr. Mr. Ms. _____
Name of Authorized Representative or Principal Investigator Title/Position

Company Name or Institute Department

Street Address

City State or Province Country Zip or Postal Code

Email Address (Area Code) Telephone Number (Area Code) Facsimile Number

Contact Person (if different from Authorized Representative) Email Address (Area Code) Telephone Number

KINEXUS KINASE INHIBITOR DISPLACEMENT MICROARRAY-BASED SCREEN

RESULTS MAY BE SENT BY EMAIL TO: AUTHORIZED REPRESENTATIVE/INVESTIGATOR AND/OR CONTACT PERSON

BILLING INFORMATION

The Kinexus KIDMAS service is provide to assess the ability of one or more compounds supplied by the client to assess their binding to endogenous protein kinases in cell lysates.

COST FOR COMPOUND SAMPLES TESTED IN KAM-2025 ARRAYS - Refer to quotation from Kinexus. All prices in U.S. Funds

Sample Analysis Options

No. of KIDMAS microarrays probed (confidential compounds samples used)* @ quoted price)* \$ _____
 X number of compound samples and control samples) x _____ = \$ _____

Quotation or Reference Number: _____ Quotation Price \$ _____

TOTAL COST FOR THIS ORDER = \$ _____

FOR CANADIAN CUSTOMERS ONLY:
 Add applicable GST to the above total (No. 893907329 RT0001): + \$ _____ = \$ _____
TOTAL AMOUNT PAYABLE IN U.S FUNDS

PAYMENT METHOD

PURCHASE ORDER ACCEPTED FROM COMPANIES AND INSTITUTES WITH APPROVED CREDIT. P.O. NUMBER: _____
 VISA OR MASTERCARD

Print Cardholder Name Card Number Expires (M/Y) CSV Cardholder Signature

BILLING INFORMATION

SEND INVOICE TO CUSTOMER AT ABOVE ADDRESS OR SEND INVOICE TO ACCOUNTS PAYABLE CONTACT:

Dr. Mr. Ms. _____
Accounts Payable Contact Name Company Name or Institute

Street Address City

State or Province Country Zip or Postal Code (Area Code) Telephone Number

AUTHORIZATION

CUSTOMER HAS READ THE KINEXUS PROTEOMICS SERVICES AGREEMENT AND AGREES TO BE BOUND BY THE TERMS AND CONDITIONS:

Print Name of Authorized Representative or Principal Investigator Authorized Signature Date y/m/d

How did you originally hear about the KIDMAS Service? Direct Mail Email Web Site Ad Referral Conference or Trade Show Other



**KINEXUS KIDMAS
SERVICE INFORMATION FORM**
Subject to terms of the Kinexus Proteomics Services Agreement

Form: **KIDMAS-SIF**

KINEXUS ORDER NUMBER
For Kinexus internal use only.

NAME: _____
(Authorized Representative or Principal Investigator)

COMPANY/INSTITUTE: _____

KINEXUS KINASE INHIBITOR DISPLACEMENT MICROARRAY-BASED SCREEN SERVICES REQUESTED: (WITH CLIENT COMPOUNDS)

Use this form to order this custom service currently offered by Kinexus. Please check the appropriate tick boxes. If you need assistance, please contact a technical service representative by calling toll free in North America 1-866-KINEXUS (866-546-3987) or by email at info@kinexus.ca. An electronic fillable MS-Word version of this form can be downloaded provided upon request.

<input type="checkbox"/> KIDMAS SERVICE REQUESTED – Each sample to be tested with duplicate measurement per kinase antibody.	KINEXUS ID NUMBER <i>(Bar Code Identification Number)</i> For Kinexus Internal Use Only.	A. CLIENT ORDER ID NAME: Customer ID: <i>Provide ID name of your choice for your reference and for use in the KIDMAS-SOF and other forms that describe the antibodies to be used in this service for macroarray production.</i>
B. SAMPLE IDENTIFICATION: <i>For each client-supplied compound sample for testing, please provide a list of these compounds with their identifying names and the preferred configuration or layout for printing that includes replicates if desired. There should be one (1) completed Compound Sample Description list per Client Order ID Name.</i>	D. PRICING: <input type="checkbox"/> This should be determined after consultation with Kinexus and based on a quoted price for the work. Use this pricing information for completion and submission of Service Order Form KIDMAS-SOF.	

Name of person completing this form

Signature

Date (y/m/d)

Form: **KIDMAS-CSDF**

KINASE INHIBITOR COMPOUND PROFILING **CLIENT SUPPLIED CONFIDENTIAL SAMPLE DESCRIPTION FORM**
Subject to terms of the Kinexus Service Agreement

KINEXUS ORDER NUMBERNAME: _____ COMPANY/INSTITUTE: _____
(Authorized Representative or Principal Investigator)**Compound Details:**

Please refer to the Kinase Inhibitor Displacement Microarray-Based Screen Customer Information Package for details on how to prepare and ship your compounds to Kinexus for testing. Clients are required to complete Sections A and B for a confidential analysis with this in vitro screening service. Use additional copies of this form if you have more than two compounds for testing. For each compound to be tested, please send enough material to complete the analysis. If you need assistance completing this form, contact a technical service representative by calling toll free in North America 1-866-KINEXUS (866-546-3987) or by email at info@kinexus.ca.

A. CLIENT IDENTIFICATION NAME CLIENT ID: _____ <i>Use the Client ID Name that you entered here in Box A on the Custom Kinase Inhibitor Compound Profiling Service Identification Form™ (KICP-SIF-01A or KICP-SIF-01B). Provide a separate Client ID number for each different compound to be tested.</i>	B. KINEXUS ID NUMBER (FOR INTERNAL USE ONLY) <i>(Bar Code Identification Number)</i>
C. COMPOUND DETAILS: Compound name (not required): _____ Supplied form of compound <input type="checkbox"/> Solid <input type="checkbox"/> Liquid FOR SOLIDS PROVIDE: Mass (mg): _____ Formula Weight: _____ Is the compound or solution toxic? <input type="checkbox"/> Yes <input type="checkbox"/> No FOR LIQUIDS PROVIDE: Molarity: _____ or Concentration: _____ Volume: _____ MSDS or safety sheets provided <input type="checkbox"/> Yes <input type="checkbox"/> No For solids, what is the recommended solvent? _____ Is the compound soluble in water or 2% DMSO? _____ Provide safety instructions and storage details for handling, or any other special information: _____ _____ _____ _____	

A. CLIENT IDENTIFICATION NAME CLIENT ID: _____ <i>Use the Client ID Name that you entered here in Box A on the Custom Kinase Inhibitor Compound Profiling Service Identification Form™ (KICP-SIF-01). Provide a separate Client ID number for each different compound to be tested.</i>	B. KINEXUS ID NUMBER (FOR INTERNAL USE ONLY) <i>(Bar Code Identification Number)</i>
C. COMPOUND DETAILS: Compound name (not required): _____ Supplied form of compound <input type="checkbox"/> Solid <input type="checkbox"/> Liquid FOR SOLIDS PROVIDE: Mass (mg): _____ Formula Weight: _____ Is the compound or solution toxic? <input type="checkbox"/> Yes <input type="checkbox"/> No FOR LIQUIDS PROVIDE: Molarity: _____ or Concentration: _____ Volume: _____ MSDS or safety sheets provided <input type="checkbox"/> Yes <input type="checkbox"/> No For solids, what is the recommended solvent? _____ Is the compound soluble in water or 2% DMSO? _____ Provide safety instructions and storage details for handling, or any other special information: _____ _____ _____ _____	

I hereby certify that all the sample information provided in this order is correct and accurate to the best of my knowledge. I further acknowledge that I may be contacted by a Kinexus representative for additional details if the information provided is unclear.

Name of person completing this form_____
Signature_____
Date (m/d/y)

COMMERCIAL INVOICE

DATE OF EXPORTATION	EXPORT REFERENCES
SHIPPER/EXPORTER	CONSIGNEE Kinexus Bioinformatics Corporation Suite 1 8755 Ash Street Vancouver, B.C. Canada V6P 6T3 Telephone: (604) 323-2547 Facsimile: (604) 232-2548 Email: info@kinexus.ca
COUNTRY OF EXPORT	TERMS OF SALE Not for resale, frozen sample for analysis
COUNTRY OF ORIGIN	PURPOSE Research and development
COUNTRY OF ULTIMATE DESTINATION Canada	EXPORTING CARRIER
INTERNATIONAL AIR WAYBILL NUMBER	
Courier Name:	Number:

NO. OF PKGS	TYPE OF PACKAGING	QUANTITY OF SAMPLES	COMPLETE AND ACCURATE COMMODITY DESCRIPTION	UNIT VALUE
	<input type="checkbox"/> FedEx Letter <input type="checkbox"/> FedEx Pak <input type="checkbox"/> Box <input type="checkbox"/> Other	<i>Total number of 1.5 ml Eppendorf tubes:</i>	Non-hazardous, non-infectious protein lysate for research and development diagnostic purposes. Samples are not for resale and there is no commercial value. Samples are packaged on Dry Ice, Class 9, UN 1845, Group 3 (____ X ____ kgs).	\$1.00 <i>per sample</i>
TOTAL NO. OF PACKAGES		TOTAL WEIGHT OF PACKAGES		TOTAL DECLARED VALUE
				\$

These commodities were exported from the Country indicated above in accordance with the Export Administration Regulations and are licensed for the ultimate designation shown. It is hereby certified that this commercial invoice shows the actual price of the goods described, that no other invoice has been or will be issued for these goods, and that all particulars are true and correct.

SIGNATURE AND STATUS OF AUTHORIZED PERSON

Print Name	Title
Authorized Signature	Date (month/day/year)

INCLUDE THREE (3) COPIES OF THIS INVOICE WITH YOUR SHIPMENT

COMMERCIAL INVOICE

DATE OF EXPORTATION	EXPORT REFERENCES
SHIPPER/EXPORTER	CONSIGNEE Kinexus Bioinformatics Corporation Suite 1 8755 Ash Street Vancouver, B.C. Canada V6P 6T3 Telephone: (604) 323-2547 Facsimile: (604) 232-2548 Email: info@kinexus.ca
COUNTRY OF EXPORT	TERMS OF SALE Not for resale, sample for analysis
COUNTRY OF ORIGIN	PURPOSE Research and development
COUNTRY OF ULTIMATE DESTINATION Canada	EXPORTING CARRIER
INTERNATIONAL AIR WAYBILL NUMBER	
Courier Name:	Number:

NO. OF PKGS	TYPE OF PACKAGING	QUANTITY OF SAMPLES	COMPLETE AND ACCURATE COMMODITY DESCRIPTION	UNIT VALUE
	<input type="checkbox"/> FedEx Letter <input type="checkbox"/> FedEx Pak <input type="checkbox"/> Box <input type="checkbox"/> Other	<i>Total number of 1.5 ml Eppendorf tubes:</i>	Non-hazardous, non-infectious degraded protein lysate for research and development diagnostic purposes. Samples are not for resale and there is no commercial value.	\$1.00 <i>per sample</i>
TOTAL NO. OF PACKAGES		TOTAL WEIGHT OF PACKAGES		TOTAL DECLARED VALUE \$

These commodities were exported from the Country indicated above in accordance with the Export Administration Regulations and are licensed for the ultimate designation shown. It is hereby certified that this commercial invoice shows the actual price of the goods described, that no other invoice has been or will be issued for these goods, and that all particulars are true and correct.

SIGNATURE AND STATUS OF AUTHORIZED PERSON

<i>Print Name</i>	<i>Title</i>
<i>Authorized Signature</i>	<i>Date (month/day/year)</i>

INCLUDE THREE (3) COPIES OF THIS INVOICE WITH YOUR SHIPMENT



PROTEOMICS SERVICES AGREEMENT

SERVICE AGREEMENT NO.

2025-

This Proteomics Services Agreement (the "Agreement") is entered into effective as of the Effective Date by and between Kinexus Bioinformatics Corporation ("Kinexus"), a Canadian corporation with a principal place of business at Suite 1, 8755 Ash Street, Vancouver, British Columbia, Canada, V6P 6T3 **AND** the corporation or other entity ("**Customer**") having the following name and business or institution address:

RECITALS

WHEREAS Kinexus is a bioinformatics company employing proprietary proteomics and bioinformatics services to create and interpret data to map protein signalling networks and compile databases with this knowledge to enable disease biomarker and therapeutics discovery.

WHEREAS the Customer desires to have Kinexus perform standard and/or customized proteomics services with materials and/or information provided by the Customer.

WHEREAS Kinexus is willing to provide these proteomics services under the terms and conditions set forth herein.

THEREFORE, in consideration of the premises and covenants and agreements contained herein, and other good and valuable consideration the receipt and sufficiency of which is hereby acknowledged, Kinexus and the Customer agree as follows:

1. DEFINITIONS

1.1 "Academic Collaborator" means a principal investigator, employed at a university or other not-for-profit academic research institution.

1.2 "Affiliate" means any corporation or other entity that directly or indirectly controls, is controlled by or is under common control with a party to this Agreement. A corporation or other entity shall be regarded as in control of another corporation or entity if it owns or directly or indirectly controls more than fifty percent (50%) of the outstanding voting stock or other ownership interest of the other corporation or entity.

1.3 "Corporate Partner" means any Third Party which enters into an agreement with the Customer or its Affiliates involving the grant to such Third Party of rights for the development or commercialization of a

product that was discovered, identified, selected, characterized or determined to have therapeutic or diagnostic use through use of the Proteomics Analyses provided to the Customer pursuant to this Agreement.

1.4 "Confidential Information" means any information or data received by a party (the "Receiving Party") from the other party (the "Disclosing Party") in connection with the performance of this Agreement that, if disclosed in writing, is marked or otherwise identified by the Disclosing Party as confidential or, if disclosed orally is identified in writing by the Disclosing Party as confidential within ten (10) days following the disclosure. Confidential Information shall not include any information or data that the Receiving Party can demonstrate:

- (a) was generally available to the public before its disclosure to the Receiving Party or became generally available to the public after its disclosure to the Receiving Party, provided that such information or data did not become generally available to the public by means of an unauthorized act or omission of the Receiving Party;
- (b) was already in the possession of the Receiving Party before its disclosure under this Agreement, as demonstrated by Receiving Party's written records, provided that such information or data was not obtained directly or indirectly from the Disclosing Party under an obligation of confidentiality;
- (c) was disclosed to the Receiving Party, whether before or after its disclosure under this Agreement, by a Third Party, provided that such information or data was not obtained directly or indirectly from the Disclosing Party under an obligation of confidentiality; or
- (d) was independently developed or discovered by employees or agents of the Receiving Party without any use of Confidential Information of the Disclosing Party as demonstrated by Receiving Party's written records.

All of the Proteomics Services technologies provided by Kinexus will be deemed to have been identified as proprietary and considered the Confidential Information of Kinexus.

1.5 "Contact" means the contact person of the Customer that is designated on the Service Order Forms, who is deemed to have the authority to deliver Samples, Service Order Forms, Service Information Forms, and Sample Description Forms to Kinexus, on behalf of the Customer, under this Agreement.

1.6 "Proteomics Analyses" means one or more of the custom and standard proteomics services offered by Kinexus that may permit the identification and/or quantification of proteins, their phosphorylation states, their interactions with proteins, peptides, and other compounds, and the regulation of their functional activities by these agents.

1.7 "Proteomics Products" means the products of the custom proteomics services offered by Kinexus to biologically manufacture one or more proteins or designer peptides by chemical synthesis.

1.8 "Sample" means a lysate or semi-purified fraction from cells and tissues, a protein, and/or a compound provided to Kinexus by the Customer, which the Customer has prepared and shipped in a manner that it can be properly used by Kinexus for the Proteomics Analyses. Samples for Proteomics Analyses may also be provided by Kinexus at the request of the Customer.

1.9 "Sample Description Form" means the Kinexus form to be completed by the Customer to provide information on the nature of each Sample submitted for the Proteomics Analyses. It is included in the Proteomics

Services Customer Information Package that is incorporated into this Agreement by reference, and may be amended from time to time as updated on the Kinexus website.

1.10 "Antibody" means the immunoglobulin reagent that permits detection of a target protein or phosphorylation site.

1.11 "Antibody Description Form" means the Kinexus form to be completed by the Customer to provide information on the nature of each Antibody submitted by the Customer for the Proteomics Analyses. It is included in the Proteomics Services Customer Information Package with this Agreement, and may be amended from time to time as updated on the Kinexus website.

1.12 "Service Order Form" means the Kinexus form to be completed by the Customer to provide Kinexus with the Customer's contact and billing information for the Proteomics Analyses or Proteomics Products. This form indicates the level of confidentiality requested by the Customer. It is included in the Proteomics Services Customer Information Package with this Agreement, and may be amended from time to time as updated on the Kinexus website.

1.13 "Service Information Form" means the Kinexus form to be completed by the Customer to provide Kinexus with a specific listing of the Samples to be tested for the Proteomics Analysis or a specific description of the Proteomics Products that are requested. It is included in the Proteomics Services Customer Information Package with this Agreement, and may be amended from time to time as updated on the Kinexus website.

1.14 "Report" means the underlying raw data and the report provided to the Customer hereunder consisting of the Proteomic Analyses of Samples, including, but not limited to tables of the experimental results. For Proteomics Products, the Report may include raw data confirming the composition and purity of the Proteomics Products.

1.15 "Field of Use" means use by Kinexus and its Affiliates and Academic Collaborators of data from the Report for research and commercial purposes relating to the creation and interpretation of knowledge about the composition, architecture and operation of cell signalling networks, improving its Proteomics Services, and the compilation of databases that may become accessible to Third Parties on-line over the Internet.

1.16 "Third Party" means any entity other than Kinexus', Kinexus' Affiliates, the Customer and the Customer's Affiliates.

1.17 "Effective Date" means the date of the last signature on this Agreement.

2. REQUEST FOR AND DELIVERY OF PROTEOMICS SERVICES

2.1 Request for Proteomics Services. From time to time, over the Term of this Agreement (as defined in Section 6.1 herein), the Customer can engage Kinexus to provide its Proteomics Analyses or Proteomics Products. After submission of a quotation from Kinexus to the Customer, by delivery to Kinexus of a Service Order Form, a Service Information Form and a Sample Description Form with Samples as appropriate, the Customer hereby requests and authorizes Kinexus to perform those Proteomics Services stated in the Services Order Form and deliver the results of these services to the Customer, pursuant to the terms and conditions in this Agreement. In the case of Customer requested Proteomics Analyses, this would include the delivery of a Report. In the case of

Customer requested Proteomics Products, this would include the delivery of the Proteomics Products and a Report.

2.2 Representation and Warranty. The Customer represents and warrants that: (a) it has all right and authority to provide the Sample to Kinexus for analysis under the terms and conditions of this Agreement, (b) it collected the Sample lawfully and with all necessary consents and approvals, and (c) that the collection, use and disclosure of the Sample to Kinexus pursuant to this Agreement will not violate the rights of any Third Party.

2.3 Delivery Conditions for Customer Sample. The Customer shall be responsible for making shipping arrangements to deliver Samples to Kinexus. The Customer shall also be responsible for complying with all applicable laws and regulations (including but not limited to customs requirements and relevant handling procedures and protocols) and obtaining any and all permits, forms or permissions that may be required by all regulatory authorities to ship and deliver the Sample; to Kinexus and for Kinexus to accept delivery of the Sample.

2.4 Processing and Delivery of Report and Proteomics Products. Subject to the terms of this Agreement, Kinexus shall analyze Samples with the Customer-specified Proteomics Services or produce Customer-specified Proteomics Products, and deliver a Report to the Customer as requested on the Service Order Form and Service Information Form.

2.5 Quality of Samples for Proteomics Analyses. Kinexus shall not deliver a Report on any Sample that Kinexus, in its sole discretion, reasonably believes has been prepared and delivered in a manner that would compromise its ability to provide a reliable result. Under such a circumstance, the Sample will be destroyed by Kinexus after fourteen (14) days notification by e-mail to the Customer or at the request of the Customer prior to the scheduled destruction of the Sample, it will be returned to the Customer provided that the Customer agrees to reimburse Kinexus for the courier costs for its delivery.

3. PAYMENTS

3.1 Payments for Proteomics Services. For each Proteomics Analyses and Proteomics Product requested under this Agreement, the Customer shall pay to Kinexus a fee in accordance with the amount specified on the Service Order Form and the Service Identification Form for the requested service, which may be amended from time to time as updated on Kinexus' website. This amount will be the same amount that was specified on the formal quotation issued by Kinexus to the Customer. In the absence of a formal quotation, the pricing will be based on the pricing specified in the latest versions of the Customer Information Packages for Proteomics Services that are downloadable from the Kinexus website (www.kinexus.ca). The category of pricing depends on the level of requested confidentiality for analysis:

- (a) Non-Confidential Proteomics Analyses. If the Samples are provided by the Customer, then all of the Sample information on the Client Supplied **Non-Confidential** Sample Description Form is completed and **is not** designated as Confidential Information on the Service Identification Form. If Antibodies are supplied by the Customer, then all of the Antibody information on the Client Supplied Antibody Description Form (see example in Appendix) must be completed and **is not** designated as Confidential Information on the Service Identification Form.
- (b) Confidential Proteomics Analyses. If the Samples are provided by the Customer, then all of the Sample information on the Client Supplied **Confidential** Sample Description Form must be completed and **is** designated as Confidential Information on the Service Identification Form.

3.2 The Customer shall issue a purchase order or provide a charge account at the time the Customer sample arrives at Kinexus' offices at Suite 1, 8755 Ash Street, Vancouver, British Columbia, Canada, V6P 6T3. Kinexus will invoice Customer when the Proteomics Analyses or Proteomics Products are complete and delivered to Customer. Payment terms are net 30 days from date of invoice.

3.3 Interest on Late Payments. Any overdue payments by the Customer to Kinexus under this Agreement shall bear interest, to the extent permitted by applicable law at 18% per annum, calculated on the total number of days payment is delinquent; provided, however, that interest shall not accrue pursuant to this Section 3.3 on any amounts payable under this Agreement with respect to which payment is disputed in good faith; provided, further that interest shall accrue pursuant to this Section 3.3 once such dispute has been resolved if payment is not made promptly thereafter.

4. INTELLECTUAL PROPERTY RIGHTS

4.1 Ownership of Sample Information. The Customer owns all rights to the Sample information provided to Kinexus. For Non-Confidential Proteomics Analyses and after 1 year from completion of the contracted work, the Customer grants Kinexus a non-exclusive, royalty-free fully paid up worldwide perpetual license to use, copy, publish, compile, display, communicate, modify, translate and otherwise exploit (and authorize Third Parties to do any of the foregoing) to use the information on the Client Supplied **Non-Confidential** Sample Description Form in the Field of Use, provided that the Customer's identity is not linked to, or otherwise disclosed with respect to, such data.

4.2 Ownership of Report. The Customer shall own the data in the Report. For Non-Confidential Proteomics Analyses and after 1 year from completion of the contracted work, the Customer grants Kinexus a non-exclusive, royalty-free fully paid up worldwide perpetual license to use, copy, publish, compile, display, communicate, modify, translate and otherwise exploit (and authorize Third Parties to do any of the foregoing) data from the Report in the Field of Use.

4.3 Confidentiality of Sample Information. Kinexus will have no rights with respect to the Confidential Sample information until the Sample information is published or otherwise enters the public domain. Thereafter, Kinexus can use the results of the Proteomics Analyses of the Customer Samples for its internal research and development programs.

4.4 Ownership of Proteomics Products. The Customer owns the Proteomics Products that have been delivered to the Customer in the amounts specified in the Service Order Form and the Service Information Form. Kinexus owns any excess Proteomics Products and may dispose of these in its best interests.

4.5 Ownership of New Intellectual Property.

- (a) The Customer shall own and have rights to all inventions, discoveries, improvements, know-how, technical information, data or other technology discovered, conceived, made, developed and/or reduced to practice through the use of the data in the Report and Proteomics Products solely by employees of the Customer or jointly with its Affiliates;

- (b) Kinexus shall own and have rights to all inventions, discoveries, improvements, know-how, technical information, data or other technology discovered, conceived, made, developed and/or reduced to practice through the use of the data in the Report and Proteomics Products solely by employees of Kinexus or jointly with its Affiliates.

4.6 Non-Exclusive License to Preserve Kinexus Proteomics Services Freedom of Operation. In the event one or more claims of an issued patent arising from the use of a Report by the Customer, its Affiliates, Academic Collaborators or Corporate Partners, which would, absent a license from the Customer or its Affiliates, prevent Kinexus from using or permitting others to use the standard Kinexus Proteomics Services or any data therein, then the Customer and/or its Affiliates (as applicable) shall grant to Kinexus a non-exclusive, royalty-free fully-paid up perpetual license, including the right to grant sublicenses, under any such patent claim to use and permit others to use the Proteomics Services.

5. CONFIDENTIALITY

5.1 Confidentiality. Each Receiving Party shall treat the Confidential Information of the Disclosing Party as strictly confidential and (a) take reasonable precautions to protect such Confidential Information (including, without limitation, all precautions such as the Receiving Party employs with respect to its own confidential information), (b) not disclose or make available to any Third Party such Confidential Information without the express prior written consent of the Disclosing Party and (c) use such Confidential Information only for purposes specifically authorized under this Agreement. Each Receiving Party may disclose Confidential Information of the Disclosing Party to its officers, directors, employees, consultants, Affiliates and agents, and to licensees or prospective licensees of its rights to any invention, on a need-to-know basis and on the condition that such employees, Affiliates, agents, licensees and prospective licensees are obligated to maintain the confidentiality of the Confidential Information in a manner no less restrictive than the terms and conditions of this Section 5. Each Receiving Party may disclose Confidential Information of the Disclosing Party pursuant to a demand issued by a court or governmental agency or as otherwise required by law, provided, however, that the Receiving Party notifies the Disclosing Party promptly upon receipt thereof, giving the Disclosing Party sufficient advance notice to permit it to seek a protective order or other similar order with respect to such Confidential Information, and provided, further, that the Receiving Party furnishes only that portion of the Confidential Information of the Disclosing Party that it is advised by counsel is legally required whether or not a protective order or other similar order is obtained by the Disclosing Party.

5.2 Publication. The Customer may publish and/or present the Report, abstracts or manuscripts generated utilizing the Report, and any data and/or results generated by the Customer utilizing the Report. The Customer is encouraged to disclose in scientific publications any Proteomics Analyses that were performed by Kinexus and any Proteomics Products were produced by Kinexus that meaningfully contributed to the described work. Please refer to “Kinexus Bioinformatics Corporation (Vancouver, Canada).” For all Samples submitted for analysis and identified as Non-Confidential by the Customer, Kinexus will not use, copy, publish, compile, display, communicate, modify, or translate the Sample Information or the data from the Report for a period of 365 days (12 months) following the return of the Report to the Customer. At any time, the Customer may opt to pay the difference in price between the Non-Confidential pricing level to the Confidential pricing level for each applicable Sample, to ensure the confidentiality status of such sample is changed.

5.3 Confidential Sample Information. All parties agree that the term of confidentiality pertaining to that Sample information will expire when the Sample information is published or otherwise enters public domain through no fault of Kinexus.

5.4 Use of Customer Name. Except as expressly provided in Section 9.5, no right or license is granted hereunder by Customer for Kinexus to use the Customer's name in relation to data from a Report to a Third Party.

6. TERM AND TERMINATION

6.1 Term. The term of this Agreement ("Term") shall commence on the Effective Date and shall remain in effect for ten (10) years or until the termination of this Agreement pursuant to the terms hereof.

6.2 Early Termination. Each party shall have the right to terminate this Agreement at any time prior to Kinexus' delivery of a Report or Proteomics Product to the Customer hereunder, upon ten (10) business days written notice to the other party, if such party reasonably determines that the production, or use of such Sample infringes intellectual property rights of any Third Party, and the Customer elects not to obtain a license under the necessary Third Party intellectual property rights at its sole expense. If this Agreement is terminated by either party pursuant to this Section 6.2, neither party shall have any obligation to the other with respect to payments under this Agreement regarding the Sample or Proteomics Product at issue.

Kinexus shall have the right to terminate any Service Order Form for any Proteomics Services upon ten (10) business days written notice to the Customer, upon the identification of a technical difficulty related to the Sample or Proteomics Product which would prevent it from delivering the Report or Proteomics Product using reasonable efforts. If Kinexus terminates a work order as a result of a technical difficulty related to a Customer Sample that is the fault of Kinexus, Kinexus shall provide for the reanalysis of the same number of problematic Customer Samples for the Proteomics Analyses at the original agreed upon price without any additional expenses incurred by the Customer, or Kinexus shall repay any prepayment fee paid by the Customer for such a Customer Sample and neither party shall have any further obligation to the other with respect to that Customer Sample.

If Kinexus terminates a Service Order Form for Proteomics Analyses as a result of a technical difficulty related to the Customer Sample (including insufficient material or other problems associated with the quality of the Sample) that is the fault of the Customer, then Kinexus shall provide for the reanalysis of the problematic Customer Samples at the original agreed upon price without any additional expenses incurred by the Customer, provided Kinexus completes the full Proteomics Analyses for all Samples. For any subsequent resubmission of Customer Samples for Proteomics Analyses due to technical difficulty that is again the fault of the Customer, Kinexus shall provide for the reanalysis of the problematic Customer Samples at an additional charge per sample at a price mutually agreed by the Customer and Kinexus. If the Customer elects not to resubmit Samples for Proteomics Analyses, then the Customer will pay Kinexus an amount equivalent to 50% of the quoted price for the work performed by Kinexus to this point.

6.3 Events of Default. An event of default (an "Event of Default") shall be deemed to occur upon a material breach of this Agreement by a party (including, without limitation, any breach of the provisions of Section 5) if the breaching party fails to remedy such breach within thirty (30) days after written notice thereof by the non-breaching party.

6.4 Effect of an Event of Default.

- (a) Remedies Available to Kinexus. If an Event of Default occurs relating to a material breach by the Customer, then Kinexus shall have the right, at its option exercisable in its sole discretion, in addition to any other rights or remedies available to it at law or in equity, to immediately terminate this Agreement upon notice thereof to the Customer, in which case the Customer shall return to Kinexus, or, upon Kinexus' written instruction, destroy any Report, Proteomics Products, and all information, other materials

or documentation provided or made available by Kinexus pursuant to this Agreement, and any copies thereof (including electronic copies).

- (b) Remedies Available to the Customer. If an Event of Default occurs relating to a material breach by Kinexus, then the Customer shall have the right, at its option exercisable in its sole discretion, in addition to any other rights or remedies available to it at law or in equity and subject to the limitations set forth in Section 7, to terminate this Agreement upon notice thereof to Kinexus.

6.5 Effect of Expiration or Termination of Agreement. The expiration or termination of this Agreement shall not relieve the parties of any obligation accruing prior to such expiration or termination. Kinexus will not be required to continue custom proteomics analyses on a Sample after termination, and the Customer will be required to pay for work done prior to termination. The provisions of Sections 4, 5, 6, 7, 8, and 9 hereof shall survive any expiration or termination of this Agreement.

7. DISCLAIMER OF WARRANTIES AND LIMITATION OF LIABILITY

7.1 Disclaimer of Warranties. THE PROTEOMICS SERVICES ARE BEING SUPPLIED TO CUSTOMER WITH NO EXPRESS, IMPLIED, STATUTORY OR OTHER WARRANTIES, REPRESENTATIONS, CONDITIONS OR GUARANTEES, INCLUDING THOSE OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE AND DURABILITY. WITHOUT LIMITING THE FOREGOING, KINEXUS MAKES NO REPRESENTATION OR WARRANTY THAT THE USE OF THE REPORT, ANY PROTEOMICS PRODUCTS OR THE DATA THEREIN OR THE PERFORMANCE OF THIS AGREEMENT WILL NOT INFRINGE ANY INTELLECTUAL PROPERTY OR OTHER RIGHTS OF ANY THIRD PARTY.

7.2 Limitation of Liability. Kinexus shall not be liable for any use by the Customer, its Affiliates, Corporate Partners, or Academic Collaborators of the Report and any Proteomics Products or any loss, claim, damage or liability, of whatever kind or nature, which may arise from or in connection with the use of the Report or the data therein, and any Proteomics Products. NOTWITHSTANDING ANYTHING ELSE IN THIS AGREEMENT OR OTHERWISE TO THE CONTRARY, NEITHER KINEXUS NOR CUSTOMER WILL BE LIABLE TO EACH OTHER WITH RESPECT TO ANY MATTER ARISING UNDER THIS AGREEMENT UNDER ANY CONTRACT, NEGLIGENCE, STRICT LIABILITY OR OTHER LEGAL OR EQUITABLE THEORY FOR (I) ANY PUNITIVE, EXEMPLARY, INCIDENTAL OR CONSEQUENTIAL DAMAGES OR LOST PROFITS OR (II) COST OF PROCUREMENT OF SUBSTITUTE GOODS, TECHNOLOGY OR SERVICES. WITHOUT IN ANY WAY LIMITING THE FOREGOING, KINEXUS SHALL NOT, IN ANY EVENT, HAVE ANY LIABILITY WHATSOEVER IN CONNECTION WITH THIS AGREEMENT IN EXCESS OF AN AMOUNT EQUAL TO THE FEES PAID TO KINEXUS BY CUSTOMER HEREUNDER IN RESPECT OF THE PROTEOMICS SERVICES AT ISSUE.

8. INDEMNIFICATION

Except to the extent prohibited by law, the Customer shall assume all liability for, and shall defend, indemnify and hold Kinexus, its Affiliates and their respective directors, officers, employees and agents harmless from, all claims, losses, damages or expenses (including reasonable attorneys' fees) arising directly or indirectly as a result of: (a) the use of the Report or the data therein and any Proteomics Products by the Customer or its Affiliates, Corporate Partners or Academic Collaborators, or (b) the breach, untruthfulness or inaccuracy of any of the Customer's representations and warranties in this Agreement.

9. MISCELLANEOUS

9.1 Entire Agreement. The Appendices to this Agreement, together with all terms and conditions contained within this Agreement constitute the entire understanding between the parties with respect to the subject matter hereof and, with respect to any conflicting terms from prior agreements between the parties, supersedes and cancels such conflicting sections from all previous registrations, agreements, commitments and writings in respect thereof. This Agreement may be amended, or any term hereof modified, only by a written instrument duly executed by both parties hereto.

9.2 Assignment and Waiver. This Agreement may not be assigned or otherwise transferred by either party without the written consent of the other party, such consent will not be unreasonably withheld. Notwithstanding the foregoing, Kinexus may, without such consent, assign its rights and obligations under this Agreement (a) to any Affiliate or (b) to a Third Party in connection with a merger, consolidation or sale of such portion of its assets that includes rights under this Agreement provided, however, that Kinexus' rights and obligations under this Agreement shall be assumed by its successor in interest in any such transaction. In the event of such a transaction with Third Party, notwithstanding the other provisions of this Agreement, the intellectual property rights of such Third Party shall not be subject to the licenses granted by Kinexus under this Agreement. Any purported assignment in violation of the provisions of this Section 9.2 shall be void. Any permitted assignee shall assume all obligations of its assignor under this Agreement. The waiver by either party hereto of any right hereunder or the failure to perform or of a breach by the other party shall not be deemed a waiver of any other right hereunder or of any other breach or failure by said other party whether of a similar nature or otherwise.

9.3 Force Majeure. Neither party shall be held liable or responsible to the other party nor be deemed to have defaulted under or breached this Agreement for failure or delay in fulfilling or performing any obligation under this Agreement when such failure or delay is caused by or results from causes beyond the reasonable control of the affected party, including but not limited to fire, floods, embargoes, war, acts of war (whether war is declared or not), insurrections, riots, civil commotions, strikes, lockouts or other labor or supply disturbances, acts of God or acts, omissions or delays in acting by any governmental authority or the other party; provided, however, that the party so affected shall use reasonable commercial efforts to avoid or remove such causes of nonperformance, and shall continue performance hereunder with reasonable dispatch whenever such causes are removed. Either party shall provide the other party with prompt written notice of any delay or failure to perform that occurs by reason of force majeure. The parties shall mutually seek a resolution of the delay or the failure to perform as noted above.

9.4 Notices. Any consent, notice, or report required or permitted to be given or made under this Agreement by one of the notification parties hereto to the other shall be in writing, delivered personally, by email or by facsimile (and promptly confirmed by telephone, personal delivery or courier) or courier, postage prepaid (where applicable), addressed to such other party at its address indicated below, or to such other address as the addressee shall have last furnished in writing to the addressor and shall be effective upon receipt by the addressee.

If to Kinexus:

Kinexus Bioinformatics Corporation
Suite 1, 8755 Ash Street
Vancouver, British Columbia, Canada V6P 6T3
Attention: Dr. Steven Pelech
President & C.S.O.

Telephone: (604) 323-2547 extension 10

Facsimile: (604) 323-2548

If to the Customer:

To the Customer at the address designated at the front of this Agreement and to the attention of the duly authorized representative signing this Agreement.

9.5 Publicity. Except as required by law, the terms of this Agreement shall be treated as Confidential Information and shall not be disclosed to anyone (except for the parties' respective directors, officers, employees, consultants, agents and attorneys assisting in the review and negotiation of this Agreement and/or who have a need to know the terms of this Agreement) without the written consent of the other party, such consent which will not be unreasonably withheld. Notwithstanding the foregoing, (a) Kinexus may, without such consent, publicly announce the execution of this Agreement with the Customer and may reference the Customer as a Kinexus client.

9.6 No Partnership. It is expressly agreed that the relationship between Kinexus and the Customer shall not constitute a partnership, joint venture or agency. Neither Kinexus nor the Customer shall have the authority to make any statements, representations or commitments of any kind, or to take any action, which shall be binding on the other, without the prior consent of the other party to do so.

9.7 Applicable Law. This Agreement shall be governed by, construed, interpreted and enforced in accordance with, the laws of the province of British Columbia and the laws of Canada, without reference to conflict of laws principles.

9.8 Dispute Resolution.

- (a) The parties hereby agree that they will attempt in good faith to resolve any controversy or claim arising out of or relating to this Agreement promptly by negotiations. If a controversy or claim should arise hereunder, the matter shall be referred to an individual designated by the Chief Executive Officer or President of Kinexus and an individual designated by the Chief Executive Officer (or the equivalent position) of the Customer (the "Representatives"). If the matter has not been resolved within twenty-one (21) days of the first meeting of the Representatives of the parties (which period may be extended by mutual agreement) concerning such matter, subject to rights to injunctive relief and specific performance, and unless otherwise specifically provided for herein, any controversy or claim arising out of or relating to this Agreement, or the breach thereof, will be settled as set forth in Section 9.8(b).
- (b) All disputes arising in connection with this Agreement that are not resolved pursuant to Section 9.8(a) above shall be finally settled in Vancouver, British Columbia, by a single arbitrator appointed pursuant to the provisions of the *Commercial Arbitration Act* (British Columbia). Notwithstanding the above, either party has the right to bring an action in a court of competent jurisdiction against the other party for (i) any breach of such other party's duties of confidentiality pursuant to Section 5 of this Agreement; (ii) any infringement of its proprietary rights by the other party; and (iii) for interim protection such as, by way of example, an interim injunction. Judgment upon the arbitrator's award may be entered in any court of competent jurisdiction. The award of the arbitrator may include compensatory damages against either party, but under no circumstances will the arbitrator be authorized to, nor shall he/she, award punitive, consequential or incidental damages against either party. The parties agree not to institute any litigation or proceedings against each other in connection with this Agreement except as provided in this Section 9.8.

9.9 Severability. Each party hereby agrees that it does not intend to violate any public policy, statutory or common laws, rules, regulations, treaty or decision of any government agency or executive body thereof of any country or community or association of countries. Should one or more provisions of this Agreement be or become invalid, the parties hereto shall substitute, by mutual consent, valid provisions for such invalid provisions which valid provisions in their economic effect are sufficiently similar to the invalid provisions that it can be reasonably assumed that the parties would have entered into this Agreement with such valid provisions. In case such valid provisions cannot be agreed upon, the invalidity of one or several provisions of this Agreement shall not affect the validity of this Agreement as a whole, unless the invalid provisions are of such essential importance to this Agreement that it is to be reasonably assumed that the parties would not have entered into this Agreement without the invalid provisions.

9.10 Counterparts. This Agreement may be executed in counterparts, each of which when executed and delivered is an original, but both of which together shall constitute one and the same instrument.

9.11 Fax Delivery. This Agreement may be executed by the parties and transmitted by facsimile or electronically as a portable document format (pdf) file or similar electronic file and if so executed and transmitted this Agreement will be for all purposes as effective as if the parties had delivered an executed original Agreement.

IN WITNESS WHEREOF, the parties have caused their duly authorized officer to execute and deliver this Agreement as of the Effective Date.

Printed Name of Institute or Company

Per: _____
Signature of Authorized Representative

Name: _____
Printed Name of Authorized Representative

Title: _____
Printed Title of Authorized Representative

Date signed: _____

KINEXUS BIOINFORMATICS CORPORATION

Per: _____
Signature of Dr. Steven Pelech

Dr. Steven Pelech

President and Chief Scientific Officer

Date signed: _____

Appendix 6. Listing of kinase antibodies printed on the Kinex™ KAM-2025 microarray.

Target Protein Name	Pan-specific or P-Site	Human UniProt ID	Protein Kinase Type	Kinexus Antibody	Kinexus Antibody Code	Antibody Type
A6 (Twintin-1)	Y309	Q12792	• DSK	Kinexus	PK501	RpAb
A6r (Twintin-2)	Y309	Q6IBS0	• DSK	Kinexus	PK502	RpAb
AAK1	S637+Pan	Q2M2I8	• PSTK	Kinexus	PK503	RpAb
Abl (Abl1)	Pan	P00519	• PYK	Kinexus	NK001-4	RpAb
Abl (Abl1)	Pan	P00519	• PYK	Kinexus	NK001-6	RpAb
Abl (Abl1)	Pan	P00519	• PYK	No	sc-887	RpAb
Abl (Abl1)	Pan	P00519	• PYK	No	sc-131	RpAb
Abl (Abl1)	Y139	P00519	• PYK	Kinexus	PK504	RpAb
Abl (Abl1)	Y226	P00519	• PYK	Kinexus	PK505	RpAb
Abl (Abl1)	Y257	P00519	• PYK	Kinexus	PK506	RpAb
Abl (Abl1)	Y264	P00519	• PYK	Kinexus	PK507	RpAb
Abl (Abl1)	Y393+T394	P00519	• PYK	Kinexus	PK873	RpAb
Abl (Abl1)	Y413	P00519	• PYK	Kinexus	PK896	RpAb
Abl (Abl1)	Y469	P00519	• PYK	Kinexus	PK508	RpAb
ACK1 (TNK2)	Pan	Q07912	• PYK	No	sc-323	RpAb
ACK1 (TNK2)	Y284	Q07912	• PYK	Kinexus	PK511	RpAb
ACK1 (TNK2)	Y518	Q07912	• PYK	Kinexus	PK512	RpAb
ACK1 (TNK2)	Y859+Y860	Q07912	• PYK	Kinexus	PK513	RpAb
Akt1 (PKBa)	Pan	P31749	• PSTK	Kinexus	NK129-4	RpAb
Akt1 (PKBa)	Pan	P31749	• PSTK	Kinexus	NK129-5	RpAb
Akt1 (PKBa)	Pan	P31749	• PSTK	Kinexus	NK129-3	RpAb
Akt1 (PKBa)	Pan	P31749	• PSTK	No	sc-5298	MmAb
Akt1 (PKBa)	T308	P31749	• PSTK	Kinexus	PK515	RpAb
Akt1 (PKBa)	Y315	P31749	• PSTK	Kinexus	PK516	RpAb
Akt1 (PKBa)	Y326	P31749	• PSTK	Kinexus	PK517	RpAb
Akt1 (PKBa)	S473	P31749	• PSTK	Kinexus	PK869	RpAb
Akt1 (PKBa)	S473	P31749	• PSTK	Kinexus	PK958	RpAb
Akt1 (PKBa)	Y474	P31749	• PSTK	No	06-0020	RpAb
Akt2 (PKBb)	Pan	P31751	• PSTK	Kinexus	NK130-4	RpAb
Akt2 (PKBb)	Pan	P31751	• PSTK	Kinexus	NK130-8	RpAb
Akt2 (PKBb)	Pan	P31751	• PSTK	Kinexus	NK130-9	RpAb
Akt2 (PKBb)	Pan	P31751	• PSTK	Kinexus	NK130-5	RpAb
Akt2 (PKBb)	Pan	P31751	• PSTK	No	sc-7125	GpAb
Akt2 (PKBb)	Pan	P31751	• PSTK	No	sc-7127	GpAb
Akt3 (PKBq)	Pan	Q9Y243	• PSTK	Kinexus	NK131-3	RpAb
ALK	Pan	Q9UM73	• PYK	Kinexus	NK003-2	RpAb
ALK	Pan	Q9UM73	• PYK	Kinexus	NK003-3	RpAb
ALK	Pan	Q9UM73	• PYK	No	18-0266	RpAb
ALK	Y1092	Q9UM73	• PYK	Kinexus	PK518	RpAb
ALK	Y1096	Q9UM73	• PYK	Kinexus	PK519	RpAb
ALK	Y1507	Q9UM73	• PYK	Kinexus	PK520	RpAb
AMPKa1 (PRKAA1)	Pan	Q13131	• PSTK	Kinexus	NK259-2	RpAb
AMPKa1 (PRKAA1)	Pan	Q13131	• PSTK	Kinexus	NK259-1	RpAb
AMPKa1 (PRKAA1)	T172	Q13131	• PSTK	Kinexus	PK897	RpAb
AMPKa1 (PRKAA1)	T183+S184	Q13131	• PSTK	Kinexus	PK521	RpAb
AMPKa1 (PRKAA1)	T490	Q13131	• PSTK	Kinexus	PK918	RpAb
AMPKa2 (PRKAA2)	Pan	P54646	• PSTK	Kinexus	NK260-1	RpAb
AMPKa2 (PRKAA2)	Pan	P54646	• PSTK	Kinexus	NK260-2	RpAb
AMPKa2 (PRKAA2)	S377	P54646	• PSTK	Kinexus	PK522	RpAb
AMPKa2 (PRKAA2)	Y436	P54646	• PSTK	Kinexus	PK919	RpAb
ANKRD3 (RIPK4)	Pan	P57078	• PSTK	No	AP7808b	RpAb
ANKRD3 (RIPK4)	S438+Pan	P57078	• PSTK	Kinexus	PK523	RpAb
Arq (Abl2)	Pan	P42684	• PYK	Kinexus	NK238-1	RpAb
Arq (Abl2)	Y439	P42684	• PYK	Kinexus	PK509	RpAb
Arq (Abl2)	Y439+T440	P42684	• PYK	Kinexus	PK510	RpAb
ASK1 (MAP3K5)	Pan	Q99683	• PSTK	No	sc-6368	GpAb
ASK1 (MAP3K5)	Pan	Q99683	• PSTK	No	sc-7931	RpAb
ASK1 (MAP3K5)	T838	Q99683	• PSTK	Kinexus	PK525	RpAb
ASK1 (MAP3K5)	S1033	Q99683	• PSTK	Kinexus	PK524	RpAb
ASK1 (MAP3K5)	T1326	Q99683	• PSTK	Kinexus	PK920	RpAb
ATM	Pan	Q13315	• PSTK	Kinexus	NK230-2	RpAb
ATM	Pan	Q13315	• PSTK	Kinexus	NK230-1	RpAb
ATM	Pan	Q13315	• PSTK	Kinexus	NK230-3	RpAb
ATM	Pan	Q13315	• PSTK	Kinexus	NK230	RpAb
ATM	Pan	Q13315	• PSTK	No	sc-7230	RpAb
ATM	Pan	Q13315	• PSTK	No	sc-1214	GpAb
ATM	S1981	Q13315	• PSTK	Kinexus	PK526	RpAb
ATM	Y2969	Q13315	• PSTK	Kinexus	PK527	RpAb
ATR	Pan	Q13535	• PSTK	Kinexus	NK237-2	RpAb
ATR	Pan	Q13535	• PSTK	Kinexus	NK237-3	RpAb
ATR	Pan	Q13535	• PSTK	Kinexus	NK237-1	RpAb
ATR	S435+S436	Q13535	• PSTK	Kinexus	PK528	RpAb
AurKA (Aurora A; ARK-1; AIK; STK15)	Pan	O14965	• PSTK	Kinexus	NK008-4	RpAb
AurKA (Aurora A; ARK-1; AIK; STK15)	Pan	O14965	• PSTK	Kinexus	NK008-5	RpAb
AurKA (Aurora A; ARK-1; AIK; STK15)	Pan	O14965	• PSTK	Kinexus	NK008-3	RpAb
AurKA (Aurora A; ARK-1; AIK; STK15)	T287+T288	O14965	• PSTK	Kinexus	PK529	RpAb
AurKB (AurB; AIK2)	Pan	Q96GD4	• PSTK	Kinexus	NK193-3	RpAb

Target Protein Name	Pan-specific or P-Site	Human UniProt ID	Protein Kinase Type	Kinexus Antibody	Kinexus Antibody Code	Antibody Type
AurKB (AurB; AIK2)	Pan	Q96GD4	• PSTK	Kinexus	NK193-4	RpAb
AurKB (AurB; AIK2)	Pan	Q96GD4	• PSTK	Kinexus	NK193-2	RpAb
AurKB (AurB; AIK2)	S227	Q96GD4	• PSTK	Kinexus	PK530	RpAb
AurKB (AurB; AIK2)	T232	Q96GD4	• PSTK	Kinexus	PK531	RpAb
AurKC (Aurora C; AurC; AIK3)	Pan	Q9UQB9	• PSTK	Kinexus	NK009-3	RpAb
AurKC (Aurora C; AurC; AIK3)	Pan	Q9UQB9	• PSTK	Kinexus	NK009-4	RpAb
AurKC (Aurora C; AurC; AIK3)	Pan	Q9UQB9	• PSTK	Kinexus	NK009-2	RpAb
AurKC (Aurora C; AurC; AIK3)	S193	Q9UQB9	• PSTK	Kinexus	PK532	RpAb
Axl (UFO)	Pan	P30530	• PYK	Kinexus	NK010-3	RpAb
Axl (UFO)	Pan	P30530	• PYK	Kinexus	NK010-2	RpAb
Axl (UFO)	Y702+Y703	P30530	• PYK	Kinexus	PK533	RpAb
Axl (UFO)	Y779	P30530	• PYK	Kinexus	PK898	RpAb
BCKD (BCKDK)	Pan	O14874	• PSTK	Kinexus	NK257-2	RpAb
BCKD (BCKDK)	Pan	O14874	• PSTK	Kinexus	NK257-3	RpAb
BCKD (BCKDK)	Pan	O14874	• PSTK	Kinexus	NK257-1	RpAb
Bcr	Y177	P11274	• PSTK	Kinexus	PK538	RpAb
Bcr	Y591	P11274	• PSTK	Kinexus	PK539	RpAb
Bcr	Y644	P11274	• PSTK	Kinexus	PK540	RpAb
BLK	Pan	P51451	• PYK	No	AP7697a	RpAb
BLK	Y187	P51451	• PYK	Kinexus	PK541	RpAb
BLK	Y188	P51451	• PYK	Kinexus	PK542	RpAb
BLK	Y389	P51451	• PYK	Kinexus	PK543	RpAb
Bmx (Etk)	Pan	P51813	• PYK	No	B63620	RpAb
Bmx (Etk)	Y40	P51813	• PYK	Kinexus	PK545	RpAb
BRD2	S37	P25440	• PSTK	Kinexus	PK546	RpAb
BRK	Y342	Q13882	• PYK	Kinexus	PK548	RpAb
BRK	S446+Y447	Q13882	• PYK	Kinexus	PK547	RpAb
BRSK1	T205	Q8TDC3	• PSTK	Kinexus	PK549	RpAb
Btk	Pan	Q06187	• PYK	No	sc-1696	RpAb
Btk	Pan	Q06187	• PYK	No	sc-1107	GpAb
Btk	Y223+Y225	Q06187	• PYK	Kinexus	PK550	RpAb
Btk	Y551	Q06187	• PYK	Kinexus	PK551	RpAb
BUB1 (BUB1A)	Pan	O43683	• PSTK	No	AP8058b	RpAb
BUBR1 (BUB1B)	S670+Pan	O60566	• PSTK	Kinexus	PK552	RpAb
CaMK1a (CAMK1)	T177	Q14012	• PSTK	Kinexus	PK553	RpAb
CaMK1a (CAMK1)	Y235	Q14012	• PSTK	Kinexus	PK874	RpAb
CaMK1a/d (CaMKI)	Pan	Q8IU85	• PSTK	No	sc-1544	GpAb
CaMK1d	Pan	Q8IU85	• PSTK	No	sc-1543	GpAb
CaMK1d	T180	Q8IU85	• PSTK	Kinexus	PK554	RpAb
CaMK2a (CaMKII)	Pan	Q9UQM7	• PSTK	No	sc-9035	RpAb
CaMK2a (CaMKII)	Pan	Q9UQM7	• PSTK	No	sc-5390	GpAb
CaMK2a (CaMKII)	Pan	Q9UQM7	• PSTK	No	NK302-2	MmAb
CaMK2a (CaMKII)	Pan	Q9UQM7	• PSTK	No	NK302-1	MmAb
CaMK2a (CaMKII)	Y230	Q9UQM7	• PSTK	Kinexus	PK875	RpAb
CaMK2a (CaMKII)	T286	Q9UQM7	• PSTK	Kinexus	PK555	RpAb
CAMK2b	Pan	Q13554	• PSTK	Kinexus	NK018-3	RpAb
CAMK2d	Pan	Q13557	• PSTK	Kinexus	NK019-3	RpAb
CaMK2g	Pan	Q13555	• PSTK	Kinexus	NK020-1	RpAb
CaMK4 (CaMPK4)	Pan	Q16566	• PSTK	Kinexus	NK021-1	RpAb
CaMK4 (CaMPK4)	Pan	Q16566	• PSTK	Kinexus	NK021-2	RpAb
CaMK4 (CaMPK4)	T200	Q16566	• PSTK	Kinexus	PK556	RpAb
CaMKK1 (CaMKK)	Pan	Q8N5S9	• PSTK	Kinexus	NK022-2	RpAb
CaMKK1 (CaMKK)	Pan	Q8N5S9	• PSTK	Kinexus	NK022	RpAb
CaMKK1 (CaMKK)	S74	Q8N5S9	• PSTK	Kinexus	PK557	RpAb
CDC2L5 (CHED; CDK13)	Pan	Q14004	• PSTK	No	AP7514a	RpAb
CDC2L5 (CHED; CDK13)	Pan	Q14004	• PSTK	Kinexus	NK024-2	RpAb
CDC7	Pan	O00311	• PSTK	No	sc-7519	GpAb
CDC7	Pan	O00311	• PSTK	No	sc-7518	GpAb
CDC7	T376	O00311	• PSTK	Kinexus	PK558	RpAb
CDK1 (CDC2)	Pan	P06493	• PSTK	No	AHZ0122	MmAb
CDK1 (CDC2)	Pan	P06493	• PSTK	Kinexus	NK025-4	RpAb
CDK1 (CDC2)	Pan	P06493	• PSTK	Kinexus	NK025-7	RpAb
CDK1 (CDC2)	Pan	P06493	• PSTK	No	sc-954	RpAb
CDK1 (CDC2)	Pan	P06493	• PSTK	No	sc-54	MmAb
CDK1 (CDC2)	T14	P06493	• PSTK	No	2543	RpAb
CDK1 (CDC2)	T14	P06493	• PSTK	Kinexus	PK559	RpAb
CDK1 (CDC2)	T14+Y15	P06493	• PSTK	Kinexus	PK560	RpAb
CDK1 (CDC2)	Y15	P06493	• PSTK	Kinexus	PK562	RpAb
CDK1 (CDC2)	Y19	P06493	• PSTK	Kinexus	PK563	RpAb
CDK1 (CDC2)	T161	P06493	• PSTK	Kinexus	PK561	RpAb
CDK1 (CDC2)	T161	P06493	• PSTK	No	11134	RpAb
CDK2	Pan	P24941	• PSTK	No	AP7518b	RpAb
CDK2	Pan	P24941	• PSTK	No	sc-163	RpAb
CDK2	Pan	P24941	• PSTK	No	sc-748	RpAb
CDK2	Pan	P24941	• PSTK	No	sc-6248	MmAb
CDK2	Pan	P24941	• PSTK	No	610145	MmAb
CDK2	T160	P24941	• PSTK	Kinexus	PK568	RpAb
CDK4	Pan	P11802	• PSTK	No	sc-260	RpAb
CDK4	Pan	P11802	• PSTK	No	sc-601	RpAb
CDK4	T172	P11802	• PSTK	Kinexus	PK569	RpAb

Target Protein Name	Pan-specific or P-Site	Human UniProt ID	Protein Kinase Type	Kinexus Antibody	Kinexus Antibody Code	Antibody Type
CDK5	Pan	Q00535	• PSTK	Kinexus	NK028-2	RpAb
CDK5	Pan	Q00535	• PSTK	No	sc-6247	MmAb
CDK5	Y15	Q00535	• PSTK	Kinexus	PK570	RpAb
CDK5	S159+Pan	Q00535	• PSTK	Kinexus	PK899	RpAb
CDK6	Pan	Q00534	• PSTK	No	C150M	MmAb
CDK6	Pan	Q00534	• PSTK	No	sc-7961	MmAb
CDK6	Pan	Q00534	• PSTK	No	sc-177	RpAb
CDK6	Pan	Q00534	• PSTK	No	KAP-CC006E	RpAb
CDK6	Y13	Q00534	• PSTK	Kinexus	PK571	RpAb
CDK6	Y24	Q00534	• PSTK	Kinexus	PK572	RpAb
CDK7 (MO15)	Pan	P50613	• PSTK	Kinexus	NK030-1	RpAb
CDK7 (MO15)	Pan	P50613	• PSTK	No	sc-7344	MmAb
CDK7 (MO15)	Pan	P50613	• PSTK	No	13-8700	RpAb
CDK7 (MO15)	T170	P50613	• PSTK	Kinexus	PK573	RpAb
CDK8	Pan	P49336	• PSTK	No	AP7524a	RpAb
CDK8	Pan	P49336	• PSTK	Kinexus	NK031-4	RpAb
CDK8	Pan	P49336	• PSTK	No	sc-1521	GpAb
CDK9	Pan	P50750	• PSTK	No	sc-7331	GpAb
CDK9	Pan	P50750	• PSTK	No	sc-484	RpAb
CDK9	T186	P50750	• PSTK	Kinexus	PK575	RpAb
CDK9	S347	P50750	• PSTK	Kinexus	PK574	RpAb
CDK10 (PISSLRE)	Pan	Q15131	• PSTK	Kinexus	NK033-3	RpAb
CDK10 (PISSLRE)	Pan	Q15131	• PSTK	Kinexus	NK033-2	RpAb
CDK10 (PISSLRE)	T196	Q15131	• PSTK	Kinexus	PK564	RpAb
CDK11A (Cdc2L2; PITSLRE)	T583	Q9UQ88	• PSTK	Kinexus	PK565	RpAb
CDK11B (PITSLRE; p58/GTA; CLK-1)	Pan	P21127	• PSTK	No	sc-928	RpAb
CDK12 (Cdc2L7; CRK7)	S383+S385	Q9NYV4	• PSTK	Kinexus	PK566	RpAb
CDK12 (Cdc2L7; CRK7)	T893	Q9NYV4	• PSTK	Kinexus	PK567	RpAb
CDK14 (PFTAIRE1)	Pan	O94921	• PSTK	Kinexus	NK287-1	RpAb
CDK15 (PFTAIRE2; ALS2CR7)	Pan	Q96Q40	• PSTK	No	AP7512a	RpAb
CDK15 (PFTAIRE2; ALS2CR7)	Pan	Q96Q40	• PSTK	Kinexus	NK004-2	RpAb
CDK15 (PFTAIRE2; ALS2CR7)	Pan	Q96Q40	• PSTK	Kinexus	NK004-3	RpAb
CDK15 (PFTAIRE2; ALS2CR7)	Y114	Q96Q40	• PSTK	Kinexus	PK957	RpAb
CDKL1 (KKIALRE)	Pan	Q00532	• PSTK	Kinexus	NK199	RpAb
CDKL1 (KKIALRE)	Pan	Q00532	• PSTK	No	sc-7588	GpAb
CDKL1 (KKIALRE)	Pan	Q00532	• PSTK	No	sc-7589	GpAb
CDKL2 (KKIAMRE)	Pan	Q92772	• PSTK	Kinexus	NK261-1	RpAb
CDKL2 (KKIAMRE)	Pan	Q92772	• PSTK	No	sc-6287	GpAb
CDKL2 (KKIAMRE)	Pan	Q92772	• PSTK	No	sc-6286	GpAb
CDKL3	Pan	Q8IVW4	• PSTK	Kinexus	NK262-1	RpAb
CDKL5	Y171	O76039	• PSTK	Kinexus	PK576	RpAb
Chk1 (CHEK1)	Pan	O14757	• PSTK	No	sc-7898	RpAb
Chk1 (CHEK1)	Pan	O14757	• PSTK	No	sc-8408	MmAb
Chk1 (CHEK1)	Pan	O14757	• PSTK	No	sc-7235	GpAb
Chk1 (CHEK1)	S280	O14757	• PSTK	Kinexus	PK577	RpAb
Chk1 (CHEK1)	S317	O14757	• PSTK	Kinexus	PK578	RpAb
Chk1 (CHEK1)	S345	O14757	• PSTK	Kinexus	PK579	RpAb
Chk2 (CHEK2)	Pan	O96017	• PSTK	No	sc-8812	GpAb
Chk2 (CHEK2)	Pan	O96017	• PSTK	No	sc-9064	RpAb
Chk2 (CHEK2)	T68	O96017	• PSTK	Kinexus	PK581	RpAb
Chk2 (CHEK2)	T383	O96017	• PSTK	Kinexus	PK580	RpAb
CK1a (CSNK1A1)	Pan	P48729	• PSTK	No	AP7400a	RpAb
CK1a (CSNK1A1)	Pan	P48729	• PSTK	No	sc-6478	GpAb
CK1d (CSNK1D)	Pan	P48730	• PSTK	No	AP7402a	RpAb
CK1d (CSNK1D)	Pan	P48730	• PSTK	No	sc-6474	GpAb
CK1d (CSNK1D)	Pan	P48730	• PSTK	No	sc-6475	GpAb
CK1d (CSNK1D)	T176	P48730	• PSTK	Kinexus	PK923	RpAb
CK1d (CSNK1D)	T347	P48730	• PSTK	Kinexus	PK924	RpAb
CK1d (CSNK1D)	S370	P48730	• PSTK	Kinexus	PK922	RpAb
CK1e (CSNK1E)	Pan	P49674	• PSTK	No	AP7403a	RpAb
CK1e (CSNK1E)	Pan	P49674	• PSTK	No	sc-6472	GpAb
CK1q3 (CSNK1G3)	Pan	Q9Y6M4	• PSTK	No	AP7406a	RpAb
CK2a1 (CSNK2A1)	Pan	P68400	• PSTK	Kinexus	NK041-2	RpAb
CK2a1 (CSNK2A1)	Pan	P68400	• PSTK	No	sc-373894	MmAb
CK2a1 (CSNK2A1)	Y255	P68400	• PSTK	Kinexus	PK582	RpAb
CK2a1 (CSNK2A1)	T360+S362	P68400	• PSTK	No	11572	RpAb
CLK1	Pan	P49759	• PSTK	No	AP7529a	RpAb
CLK1	S337	P49759	• PSTK	Kinexus	PK583	RpAb
CLK1	S337+T338	P49759	• PSTK	Kinexus	PK584	RpAb
CLK2	Pan	P49760	• PSTK	No	AP7530a	RpAb
CLK3	Pan	P49761	• PSTK	No	AP7531a	RpAb
CLK4	Pan	Q9HAZ1	• PSTK	No	AP7532a	RpAb
COT (MAP3K8; TPL2)	Pan	P41279	• PSTK	Kinexus	NK042-2	RpAb
COT (MAP3K8; TPL2)	Pan	P41279	• PSTK	Kinexus	NK042-1	RpAb
COT (MAP3K8; TPL2)	T290	P41279	• PSTK	Kinexus	PK956	RpAb
COT (MAP3K8; TPL2)	S334	P41279	• PSTK	Kinexus	PK585	RpAb
CSF1R (Fms)	Pan	P07333	• PYK	Kinexus	NK234-3	RpAb
CSF1R (Fms)	Pan	P07333	• PYK	Kinexus	NK234-4	RpAb
CSF1R (Fms)	Pan	P07333	• PYK	Kinexus	NK234-2	RpAb
CSF1R (Fms)	Y699	P07333	• PYK	Kinexus	PK587	RpAb

Target Protein Name	Pan-specific or P-Site	Human UniProt ID	Protein Kinase Type	Kinexus Antibody	Kinexus Antibody Code	Antibody Type
CSF1R (Fms)	S807+Y809	P07333	• PYK	Kinexus	PK586	RpAb
CSF1R (Fms)	Y809	P07333	• PYK	Kinexus	PK588	RpAb
Csk	Pan	P41240	• PYK	No	sc-9898	GpAb
Csk	Pan	P41240	• PYK	No	sc-286	RpAb
Csk	Y184	P41240	• PYK	Kinexus	PK589	RpAb
DAPK2	Pan	Q9UIK4	• PSTK	No	AP7218a	RpAb
DCAMLK1 (DCLK1)	Pan	O15075	• PSTK	No	AP7219a	RpAb
DDR1	Pan	Q08345	• PYK	Kinexus	NK263-1	RpAb
DDR1	Y796+Y797	Q08345	• PYK	Kinexus	PK591	RpAb
DDR1	Y797	Q08345	• PYK	Kinexus	PK592	RpAb
DDR2 (Tyr010)	Y736	Q16832	• PYK	Kinexus	PK593	RpAb
DDR2 (Tyr10)	Y740	Q16832	• PYK	Kinexus	PK594	RpAb
DLK (DAPK; ZPK; MAP3K12; MUK)	Pan	Q12852	• PSTK	No	AP7217b	RpAb
DLK (DAPK; ZPK; MAP3K12; MUK)	Pan	Q12852	• PSTK	No	AP7214a	RpAb
DLK (DAPK; ZPK; MAP3K12; MUK)	Pan	Q12852	• PSTK	No	sc-8124	GpAb
DLK (DAPK; ZPK; MAP3K12; MUK)	Pan	Q12852	• PSTK	No	sc-8125	GpAb
DLK (DAPK; ZPK; MAP3K12; MUK)	Pan	Q12852	• PSTK	No	sc-10805	RpAb
DLK (DAPK; ZPK; MAP3K12; MUK)	S269	Q12852	• PSTK	Kinexus	PK590	RpAb
DLK (DAPK; ZPK; MAP3K12; MUK)	S308+Pan	Q12852	• PSTK	Kinexus	PK900	RpAb
DMPK1 (DMPK)	Pan	Q09013	• PSTK	No	AP7034b	RpAb
DMPK1 (DMPK)	Pan	Q09013	• PSTK	Kinexus	NK264-1	RpAb
DMPK2 (MRCK-g)	Pan	Q6DT37	• PSTK	Kinexus	NK265-1	RpAb
DNAPK (PRKDC)	Pan	P78527	• PSTK	Kinexus	NK048-4	RpAb
DNAPK (PRKDC)	Pan	P78527	• PSTK	Kinexus	NK048-4	RpAb
DNAPK (PRKDC)	Pan	P78527	• PSTK	Kinexus	NK048-6	RpAb
DNAPK (PRKDC)	Pan	P78527	• PSTK	Kinexus	NK048-7	RpAb
DNAPK (PRKDC)	Pan	P78527	• PSTK	Kinexus	NK048-5	RpAb
DNAPK (PRKDC)	Pan	P78527	• PSTK	No	sc-9051	RpAb
DNAPK (PRKDC)	Y883	P78527	• PSTK	Kinexus	PK596	RpAb
DNAPK (PRKDC)	S2056	P78527	• PSTK	Kinexus	PK925	RpAb
DNAPK (PRKDC)	T2609	P78527	• PSTK	Kinexus	PK595	RpAb
DYRK1A	Y321	Q13627	• DSK	Kinexus	PK597	RpAb
DYRK2	Pan	Q92630	• DSK	No	AP7534a	RpAb
DYRK2	Pan	Q92630	• DSK	Kinexus	NK266-1	RpAb
DYRK2	Y382	Q92630	• DSK	Kinexus	PK598	RpAb
DYRK3	Pan	Q43781	• DSK	No	AP7535a	RpAb
DYRK4	Pan	Q9NR20	• DSK	No	AP7536b	RpAb
EGFR (ErbB1)	Pan	P00533	• PYK	No	AP7628b	RpAb
EGFR (ErbB1)	Pan	P00533	• PYK	No	AP7628a	RpAb
EGFR (ErbB1)	Pan	P00533	• PYK	Kinexus	NK052-5	RpAb
EGFR (ErbB1)	Pan	P00533	• PYK	Kinexus	NK052-6	RpAb
EGFR (ErbB1)	Pan	P00533	• PYK	Kinexus	NK052-4	RpAb
EGFR (ErbB1)	Pan	P00533	• PYK	Kinexus	NK052-7	RpAb
EGFR (ErbB1)	Pan	P00533	• PYK	Kinexus	NK052-8	RpAb
EGFR (ErbB1)	Pan	P00533	• PYK	No	100-401-149	RpAb
EGFR (ErbB1)	Y869	P00533	• PYK	Kinexus	PK602	RpAb
EGFR (ErbB1)	Y998	P00533	• PYK	Kinexus	PK603	RpAb
EGFR (ErbB1)	Y1069	P00533	• PYK	Kinexus	PK599	RpAb
EGFR (ErbB1)	Y1110	P00533	• PYK	Kinexus	PK600	RpAb
EGFR (ErbB1)	Y1172	P00533	• PYK	Kinexus	PK601	RpAb
EIF2AK3 (PERK; PEK; PKR)	S555	Q9NZJ5	• PSTK	Kinexus	PK926	RpAb
EIF2AK3 (PERK; PEK; PKR)	S715	Q9NZJ5	• PSTK	Kinexus	PK927	RpAb
EIF2AK3 (PERK; PEK; PKR)	T982	Q9NZJ5	• PSTK	Kinexus	PK604	RpAb
EphA1	Pan	P21709	• PYK	No	AP7606b	RpAb
EphA1	Y599	P21709	• PYK	Kinexus	PK928	RpAb
EphA1	Y781	P21709	• PYK	Kinexus	PK605	RpAb
EphA2	Pan	P29317	• PYK	No	AP7607b	RpAb
EphA2	Pan	P29317	• PYK	No	AP7701a	RpAb
EphA2	Y588	P29317	• PYK	Kinexus	PK606	RpAb
EphA2	Y772	P29317	• PYK	Kinexus	PK607	RpAb
EphA3	Pan	P29320	• PYK	No	AP7608a	RpAb
EphA3	Pan	P29320	• PYK	No	AP7608b	RpAb
EphA3	Y779	P29320	• PYK	Kinexus	PK608	RpAb
EphA4	Pan	P54764	• PYK	No	AP7609a	RpAb
EphA4	Pan	P54764	• PYK	No	AP7609b	RpAb
EphA4	Y602	P54764	• PYK	Kinexus	PK930	RpAb
EphA4	Y779	P54764	• PYK	Kinexus	PK931	RpAb
EphA5	Pan	P54756	• PYK	No	AP7610a	RpAb
EphA5	Pan	P54756	• PYK	No	AP7610b	RpAb
EphA6	Pan	Q9UF33	• PYK	No	AP7611a	RpAb
EphA6	Pan	Q9UF33	• PYK	No	AP7611b	RpAb
EphA7	Pan	Q15375	• PYK	No	AP7612a	RpAb
EphA8	Pan	P29322	• PYK	No	AP7613a	RpAb
EphA8	Pan	P29322	• PYK	No	AP7613b	RpAb
EphB1	Pan	P54762	• PYK	No	AP7622a	RpAb
EphB1	Y594	P54762	• PYK	Kinexus	PK609	RpAb
EphB2	Pan	P29323	• PYK	No	AP7623a	RpAb
EphB2	Pan	P29323	• PYK	No	AP7623b	RpAb
EphB2	Pan	P29323	• PYK	Kinexus	NK267-1	RpAb
EphB2	Pan	P29323	• PYK	Kinexus	NK267-2	RpAb

Target Protein Name	Pan-specific or P-Site	Human UniProt ID	Protein Kinase Type	Kinexus Antibody	Kinexus Antibody Code	Antibody Type
EphB2	Y780	P29323	•PYK	Kinexus	PK610	RpAb
EphB3	Pan	P54753	•PYK	No	AP7624a	RpAb
EphB3	Y600	P54753	•PYK	Kinexus	PK611	RpAb
EphB4	Pan	P54760	•PYK	No	AP7625a	RpAb
EphB4	Y596	P54760	•PYK	Kinexus	PK612	RpAb
EphB6	Pan	Q15197	•PYK	No	AP7627a	RpAb
EphB6	Pan	Q15197	•PYK	No	AP7627b	RpAb
ErbB2 (Neu; HER2)	Pan	P04626	•PYK	No	AP7629b	RpAb
ErbB2 (Neu; HER2)	Pan	P04626	•PYK	No	AP7629a	RpAb
ErbB2 (Neu; HER2)	Pan	P04626	•PYK	No	DB049	RpAb
ErbB2 (Neu; HER2)	Pan	P04626	•PYK	Kinexus	NK054-4	RpAb
ErbB2 (Neu; HER2)	Pan	P04626	•PYK	Kinexus	NK054-6	RpAb
ErbB2 (Neu; HER2)	Pan	P04626	•PYK	Kinexus	NK054-7	RpAb
ErbB2 (Neu; HER2)	Y735	P04626	•PYK	Kinexus	PK614	RpAb
ErbB2 (Neu; HER2)	Y877	P04626	•PYK	Kinexus	PK615	RpAb
ErbB2 (Neu; HER2)	Y1248	P04626	•PYK	Kinexus	PK613	RpAb
ErbB3 (HER3)	Pan	P21860	•PYK	Kinexus	NK231-2	RpAb
ErbB3 (HER3)	Pan	P21860	•PYK	Kinexus	NK231-3	RpAb
ErbB3 (HER3)	Pan	P21860	•PYK	Kinexus	NK231-4	RpAb
ErbB3 (HER3)	Pan	P21860	•PYK	Kinexus	NK231-2	RpAb
ErbB3 (HER3)	Y1289	P21860	•PYK	Kinexus	PK616	RpAb
ErbB3 (HER3)	Y1307	P21860	•PYK	Kinexus	PK617	RpAb
ErbB3 (HER3)	Y1328	P21860	•PYK	Kinexus	PK618	RpAb
ErbB4 (HER4)	Pan	Q15303	•PYK	No	AP7631a	RpAb
ErbB4 (HER4)	Pan	Q15303	•PYK	Kinexus	NK235-1	RpAb
ErbB4 (HER4)	Pan	Q15303	•PYK	Kinexus	NK235-3	RpAb
ErbB4 (HER4)	Y733	Q15303	•PYK	Kinexus	PK619	RpAb
ErbB4 (HER4)	Y875	Q15303	•PYK	Kinexus	PK620	RpAb
ERK1 (MAPK3)	Pan	P27361	•PSTK	No	AP7500a	RpAb
ERK1 (MAPK3)	Pan	P28482	•PSTK	No	AP7501a	RpAb
ERK1 (MAPK3)	Pan	P27361	•PSTK	Kinexus	NK055-1	RpAb
ERK1 (MAPK3)	Pan	P27361	•PSTK	Kinexus	NK055-2	RpAb
ERK1 (MAPK3)	Pan	P27361	•PSTK	Kinexus	NK055-3	RpAb
ERK1 (MAPK3)	Pan	P27361	•PSTK	Kinexus	NK055-5	RpAb
ERK1 (MAPK3)	Pan	P27361	•PSTK	Kinexus	NK055-4	RpAb
ERK1 (MAPK3)	Pan	P27361	•PSTK	Kinexus	NK055-6	RpAb
ERK1 (MAPK3)	Pan	P28482	•PSTK	Kinexus	NK056-2	RpAb
ERK1 (MAPK3)	Pan	P28482	•PSTK	Kinexus	NK056-3	RpAb
ERK1 (MAPK3)	Pan	P28482	•PSTK	Kinexus	NK056-4	RpAb
ERK1 (MAPK3)	Y204	P27361	•PSTK	Kinexus	PK864	RpAb
ERK1 (MAPK3)	Y204	P27361	•PSTK	No	sc-7383	MmAb
ERK1 (MAPK3)	T207	P27361	•PSTK	Kinexus	PK950	RpAb
ERK1 (MAPK3)	T207	P27361	•PSTK	Kinexus	PK865	RpAb
ERK1 (MAPK3)	S265	P27361	•PSTK	Kinexus	PK878	RpAb
ERK1 (MAPK3)	S283	P27361	•PSTK	Kinexus	PK879	RpAb
ERK1 (MAPK3)	T202+Y204	P27361	•PSTK	Kinexus	PK621	RpAb
ERK1 (MAPK3)	Y204+T207	P27361	•PSTK	Kinexus	PK866	RpAb
ERK1 (MAPK3)	Y263+S266	P28482	•PSTK	Kinexus	PK880	RpAb
ERK2 (MAPK1)	T185+Y187	P28482	•PSTK	Kinexus	PK622	RpAb
ERK3 (MAPK6)	Pan	Q16659	•PSTK	No	AP7502a	RpAb
ERK3 (MAPK6)	S189	Q16659	•PSTK	Kinexus	PK623	RpAb
ERK4 (MAPK4)	Pan	P31152	•PSTK	No	AP7503a	RpAb
ERK4 (MAPK4)	S186	P31152	•PSTK	Kinexus	PK624	RpAb
ERK5 (MAPK7; BMK)	Pan	Q13164	•PSTK	Kinexus	NK206-1	RpAb
ERK5 (MAPK7; BMK)	Pan	Q13164	•PSTK	Kinexus	NK206-4	RpAb
ERK5 (MAPK7; BMK)	Pan	Q13164	•PSTK	Kinexus	NK206-5	RpAb
ERK5 (MAPK7; BMK)	Pan	Q13164	•PSTK	No	sc-1285	GpAb
ERK5 (MAPK7; BMK)	Pan	Q13164	•PSTK	No	sc-1284	GpAb
ERK5 (MAPK7; BMK)	T219+Y221	Q13164	•PSTK	Kinexus	PK625	RpAb
ERK5 (MAPK7; BMK)	Y221	Q13164	•PSTK	Kinexus	PK626	RpAb
FAK (PTK2)	Pan	Q05397	•PYK	No	610087	MmAb
FAK (PTK2)	Pan	Q05397	•PYK	No	sc-558	RpAb
FAK (PTK2)	Pan	Q05397	•PYK	No	sc-932	RpAb
FAK (PTK2)	Y397	Q05397	•PYK	Kinexus	PK627	RpAb
FAK (PTK2)	Y576+Y577	Q05397	•PYK	Kinexus	PK628	RpAb
FAK (PTK2)	Y577	Q05397	•PYK	Kinexus	PK629	RpAb
FAK (PTK2)	S722	Q05397	•PYK	No	sc-16662-R	RpAb
Fer (TYK3)	Pan	P16591	•PYK	No	AP7704b	RpAb
Fer (TYK3)	Y402	P16591	•PYK	Kinexus	PK630	RpAb
Fer (TYK3)	Y714	P16591	•PYK	Kinexus	PK631	RpAb
Fes	Pan	P07332	•PYK	No	sc-7670	GpAb
Fes	Y713	P07332	•PYK	Kinexus	PK632	RpAb
Fes	Y713+S716	P07332	•PYK	Kinexus	PK633	RpAb
FGFR1 (FLT2)	Pan	P11362	•PYK	No	AP7643a	RpAb
FGFR1 (FLT2)	Pan	P11362	•PYK	No	AP7636a	RpAb
FGFR1 (FLT2)	Pan	P11362	•PYK	Kinexus	NK062-2	RpAb
FGFR1 (FLT2)	Pan	P11362	•PYK	Kinexus	NK062-3	RpAb
FGFR1 (FLT2)	Y653+Y654	P11362	•PYK	Kinexus	PK634	RpAb
FGFR2 (BEK)	Pan	P21802	•PYK	No	AP7637b	RpAb
FGFR2 (BEK)	Pan	P21802	•PYK	Kinexus	NK063-3	RpAb

Target Protein Name	Pan-specific or P-Site	Human UniProt ID	Protein Kinase Type	Kinexus Antibody	Kinexus Antibody Code	Antibody Type
FGFR2 (BEK)	Pan	P21802	•PYK	Kinexus	NK063-4	RpAb
FGFR2 (BEK)	Pan	P21802	•PYK	Kinexus	NK063-2	RpAb
FGFR2 (BEK)	Y656+Y657	P21802	•PYK	Kinexus	PK635	RpAb
FGFR3	Pan	P22607	•PYK	No	AP7638a	RpAb
FGFR3	Pan	P22607	•PYK	Kinexus	NK236-1	RpAb
FGFR3	Pan	P22607	•PYK	Kinexus	NK236-2	RpAb
FGFR3	Pan	P22607	•PYK	Kinexus	NK236-3	RpAb
FGFR3	Y647+Y648	P22607	•PYK	Kinexus	PK637	RpAb
FGFR3	Y647+Y648	P22607	•PYK	Kinexus	PK636	RpAb
FGFR4	Pan	P22455	•PYK	No	AP7639a	RpAb
FGFR4	Pan	P22455	•PYK	Kinexus	NK239-1	RpAb
FGFR4	Pan	P22455	•PYK	Kinexus	NK239-3	RpAb
Fgr	Pan	P09769	•PYK	Kinexus	NK268-1	RpAb
Fgr	Y208+Y209	P09769	•PYK	Kinexus	PK638	RpAb
Fgr	Y412	P09769	•PYK	Kinexus	PK639	RpAb
FLT3 (STK1; CD135)	Pan	P36888	•PYK	No	AP7644b	RpAb
FLT3 (STK1; CD135)	Pan	P36888	•PYK	No	AP7644a	RpAb
FLT3 (STK1; CD135)	Pan	P36888	•PYK	Kinexus	NK240-1	RpAb
FLT3 (STK1; CD135)	Pan	P36888	•PYK	Kinexus	NK240-2	RpAb
FLT3 (STK1; CD135)	Y842	P36888	•PYK	Kinexus	PK640	RpAb
Frk	Pan	P42685	•PYK	No	AP7708a	RpAb
Frk	Pan	P42685	•PYK	Kinexus	NK269-1	RpAb
Frk	Pan	P42685	•PYK	Kinexus	NK269-2	RpAb
Frk	Y387	P42685	•PYK	Kinexus	PK641	RpAb
Frk	Y497	P42685	•PYK	Kinexus	PK642	RpAb
Fused (STK36)	S159	Q9NRP7	•PSTK	Kinexus	PK643	RpAb
Fyn	Pan	P06241	•PYK	No	AP7709a	RpAb
Fyn	Pan	P06241	•PYK	Kinexus	NK065-2	RpAb
Fyn	Pan	P06241	•PYK	No	sc-16	RpAb
Fyn	T12	P06241	•PYK	Kinexus	PK901	RpAb
Fyn	Y213+Y214	P06241	•PYK	Kinexus	PK644	RpAb
Fyn	Y420	P06241	•PYK	Kinexus	PK881	RpAb
Fyn	Y531	P06241	•PYK	Kinexus	PK645	RpAb
GCK (MAP4K2)	Pan	Q12851	•PSTK	No	AP7901a	RpAb
GCK (MAP4K2)	Pan	Q12851	•PSTK	No	sc-6161	GpAb
GCK (MAP4K2)	S170	Q12851	•PSTK	Kinexus	PK646	RpAb
GCN2 (EIF2AK4)	Pan	Q9P2K8	•PSTK	No	AP8062a	RpAb
GCN2 (EIF2AK4)	T667	Q9P2K8	•PSTK	Kinexus	PK877	RpAb
GRK1 (Rhodopsin kinase)	Pan	Q15835	•PSTK	No	AP7003a	RpAb
GRK1 (Rhodopsin kinase)	Pan	Q15835	•PSTK	No	sc-561	MmAb
GRK1 (Rhodopsin kinase)	Pan	Q15835	•PSTK	No	sc-8004	MmAb
GRK2 (BARK1; ADRBK1)	Y356	P25098	•PSTK	Kinexus	PK537	RpAb
GRK2 (BARK1; ADRBK1)	S670	P25098	•PSTK	Kinexus	PK536	RpAb
GRK5 (GPRK5)	Pan	P34947	•PSTK	No	AP7007a	RpAb
GSK3a	Pan	P49840	•PSTK	Kinexus	NK069-3	RpAb
GSK3a	T19+S21	P49840	•PSTK	Kinexus	PK648	RpAb
GSK3a	S278+Y279	P49840	•PSTK	Kinexus	PK647	RpAb
GSK3a	Y279	P49840	•PSTK	Kinexus	PK649	RpAb
GSK3a	Y279	P49840	•PSTK	Kinexus	PK882	RpAb
GSK3a	Y284+Y285	P49840	•PSTK	Kinexus	PK650	RpAb
GSK3b	Pan	P49841	•PSTK	Kinexus	NK270-3	RpAb
GSK3b	Pan	P49841	•PSTK	Kinexus	NK070	RpAb
GSK3b	Pan	P49841	•PSTK	No	sc-7291	MmAb
GSK3b	Pan	P49841	•PSTK	No	NK070-4	RpAb
GSK3b	T43	P49841	•PSTK	Kinexus	PK933	RpAb
GSK3b	T275+T277	P49841	•PSTK	Kinexus	PK883	RpAb
GSK3b	T390	P49841	•PSTK	Kinexus	PK932	RpAb
Haspin (GSG2)	Pan	Q8TF76	•PSTK	No	AP8064c	RpAb
Hck	Pan	P08631	•PYK	Kinexus	NK271-1	RpAb
HGK (MAP4K4; NIK; ZC1)	Pan	O95819	•PSTK	Kinexus	NK300-1	RpAb
HGK (MAP4K4; NIK; ZC1)	T187	O95819	•PSTK	Kinexus	PK653	RpAb
HGS (Hrs)	Y216	O14964	•PYK	Kinexus	PN519	RpAb
HIPK1	Y352	Q86Z02	•PSTK	Kinexus	PK654	RpAb
HIPK2	Pan	Q9H2X6	•PSTK	Kinexus	NK272-1	RpAb
Hpk1	Pan	Q92918	•PSTK	No	sc-6230	GpAb
HRI (HCR; EIF2AK1)	S258	Q9BQI3	•PSTK	Kinexus	PK876	RpAb
ICK	Pan	Q9UPZ9	•PSTK	Kinexus	NK073-5	RpAb
ICK	Pan	Q9UPZ9	•PSTK	Kinexus	NK073-3	RpAb
ICK	Pan	Q9UPZ9	•PSTK	Kinexus	NK073-4	RpAb
ICK	Y159	Q9UPZ9	•PSTK	Kinexus	PK656	RpAb
ICK	Y156+T157	Q9UPZ9	•PSTK	Kinexus	PK655	RpAb
IGF1R	Pan	P08069	•PYK	No	AP7649a	RpAb
IGF1R	Pan	P08069	•PYK	Kinexus	NK074-2	RpAb
IGF1R	Pan	P08069	•PYK	Kinexus	NK074-3	RpAb
IGF1R	Y1161+T1163	P08069	•PYK	Kinexus	PK657	RpAb
IGF1R	Y1165+Y1166	P08069	•PYK	No	11088	RpAb
IGF1R	Y1280	P08069	•PYK	No	11302	RpAb
IGF1R	Y1346	P08069	•PYK	Kinexus	PK658	RpAb
IKKa (IkBKA; CHUK)	Pan	O15111	•PSTK	No	AHO0352	MmAb
IKKa (IkBKA; CHUK)	Pan	O15111	•PSTK	No	sc-7606	MmAb

Target Protein Name	Pan-specific or P-Site	Human UniProt ID	Protein Kinase Type	Kinexus Antibody	Kinexus Antibody Code	Antibody Type
IKKa (IkBKA; CHUK)	Pan	O15111	• PSTK	No	sc-7190	GpAb
IKKa (IkBKA; CHUK)	Pan	O15111	• PSTK	No	sc-7218	RpAb
IKKa (IkBKA; CHUK)	Pan	O15111	• PSTK	No	KAP-TF115	RpAb
IKKa (IkBKA; CHUK)	Pan	O15111	• PSTK	No	71-2300	RpAb
IKKa (IkBKA; CHUK)	T179+S180	O15111	• PSTK	Kinexus	PK659	RpAb
IKKb (IkBKB; IKKB)	Pan	O14920	• PSTK	Kinexus	NK076-6	RpAb
IKKb (IkBKB; IKKB)	Pan	O14920	• PSTK	Kinexus	NK076-5	RpAb
IKKb (IkBKB; IKKB)	Pan	O14920	• PSTK	No	KAP-TF118	RpAb
IKKe (IkBKE)	S172	Q14164	• PSTK	Kinexus	PK660	RpAb
IKKg (NEMO)	S377	Q9Y6K9	• PSTK	Kinexus	PN758	RpAb
ILK1 (ILK)	Pan	Q13418	• PSTK	No	AP7651b	RpAb
ILK1 (ILK)	Pan	Q13418	• PSTK	No	sc-7516	GpAb
ILK1 (ILK)	Pan	Q13418	• PSTK	No	KAP-ST203	RpAb
ILK1 (ILK)	S343	Q13418	• PSTK	Kinexus	PK661	RpAb
ILK1 (ILK)	Y351	Q13418	• PSTK	Kinexus	PK662	RpAb
InsR (IR)	Pan	P06213	• PYK	Kinexus	NK079-2	RpAb
InsR (IR)	Y1185	P06213	• PYK	Kinexus	PK951	RpAb
InsR (IR)	Y1189	P06213	• PYK	Kinexus	PK663	RpAb
InsR (IR)	Y1361	P06213	• PYK	Kinexus	PK952	RpAb
IRAK1	Pan	P51617	• PSTK	No	sc-7883	RpAb
IRAK1	T387	P51617	• PSTK	Kinexus	PK664	RpAb
IRAK2	Pan	Q43187	• PSTK	No	KAP-ST205	RpAb
IRAK3 (IRAK-M)	Pan	Q9Y616	• PSTK	No	AP7804b	RpAb
IRAK4	T345+S346	Q9NWZ3	• PSTK	Kinexus	PK665	RpAb
IRR (INSRR)	Pan	P14616	• PYK	Kinexus	NK273-1	RpAb
ITK	Pan	Q08881	• PYK	Kinexus	NK274-1	RpAb
ITK	Pan	Q08881	• PYK	Kinexus	NK274-3	RpAb
ITK	Y512	Q08881	• PYK	Kinexus	PK666	RpAb
JAK1	Pan	P23458	• PYK	Kinexus	NK084-3	RpAb
JAK1	Pan	P23458	• PYK	Kinexus	NK084-5	RpAb
JAK1	Pan	P23458	• PYK	No	sc-1677	MmAb
JAK1	Pan	P23458	• PYK	No	sc-295	RpAb
JAK1	Y1034+Y1035	P23458	• PYK	Kinexus	PK884	RpAb
JAK1	T1107	P23458	• PYK	Kinexus	PK895	RpAb
JAK2	Pan	O60674	• PYK	Kinexus	NK085-3	RpAb
JAK2	Pan	O60674	• PYK	Kinexus	NK085-4	RpAb
JAK2	Pan	O60674	• PYK	Kinexus	NK085-2	RpAb
JAK2	Y570	O60674	• PYK	Kinexus	PK668	RpAb
JAK2	Y1007+Y1008	O60674	• PYK	No	ab68268	RpAb
JAK2	Y1007+Y1008	O60674	• PYK	Kinexus	PK667	RpAb
JAK2	Pan	O60674	• PYK	No	sc-7229	RpAb
JAK2	Pan	O60674	• PYK	No	sc-294	RpAb
JAK3	Pan	P52333	• PYK	Kinexus	NK086-3	RpAb
JAK3	Pan	P52333	• PYK	Kinexus	NK086-4	RpAb
JAK3	Pan	P52333	• PYK	Kinexus	NK086-2	RpAb
JAK3	Pan	P52333	• PYK	No	sc-1078	GpAb
JAK3	Pan	P52333	• PYK	No	sc-6932	MmAb
JAK3	Y785	P52333	• PYK	Kinexus	PK934	RpAb
JAK3	Y980+Y981	P52333	• PYK	Kinexus	PK669	RpAb
JNK1 (MAPK8; SAPK1)	Pan	P45983	• PSTK	Kinexus	NK217-2	RpAb
JNK1 (MAPK8; SAPK1)	Pan	P45983	• PSTK	Kinexus	NK217-3	RpAb
JNK1 (MAPK8; SAPK1)	Pan	P45983	• PSTK	No	sc-571	RpAb
JNK1 (MAPK8; SAPK1)	Pan	P45983	• PSTK	No	sc-474-G	GpAb
JNK1 (MAPK8; SAPK1)	Y185	P45983	• PSTK	Kinexus	PK670	RpAb
JNK2 (MAPK9)	Pan	P45984	• PSTK	Kinexus	NK189-2	RpAb
JNK2 (MAPK9)	Pan	P45984	• PSTK	Kinexus	NK189-3	RpAb
JNK2 (MAPK9)	Pan	P45984	• PSTK	Kinexus	NK189-4	RpAb
JNK2 (MAPK9)	Pan	P45984	• PSTK	Kinexus	NK196	RpAb
JNK2 (MAPK9)	Pan	P45984	• PSTK	No	sc-7345	MmAb
JNK2 (MAPK9)	T183+Y185	P45984	• PSTK	Kinexus	PK902	RpAb
JNK3 (MAPK10)	Pan	P53779	• PSTK	Kinexus	NK197-4	RpAb
JNK3 (MAPK10)	Pan	P53779	• PSTK	Kinexus	NK197	RpAb
JNK3 (MAPK10)	Pan	P53779	• PSTK	Kinexus	NK197-2	RpAb
KHS1 (MAP4K5; KHS)	Pan	Q9Y4K4	• PSTK	Kinexus	NK089-2	RpAb
KHS1 (MAP4K5; KHS)	Pan	Q9Y4K4	• PSTK	No	sc-6429	GpAb
KHS1 (MAP4K5; KHS)	Y31	Q9Y4K4	• PSTK	Kinexus	PK672	RpAb
KHS1 (MAP4K5; KHS)	S174	Q9Y4K4	• PSTK	Kinexus	PK671	RpAb
Kit	Pan	P10721	• PYK	Kinexus	NK241-1	RpAb
Kit	Pan	P10721	• PYK	Kinexus	NK241-2	RpAb
Kit	Pan	P10721	• PYK	Kinexus	NK241-3	RpAb
Kit	Y721	P10721	• PYK	Kinexus	PK885	RpAb
Kit	S821+Y823	P10721	• PYK	Kinexus	PK674	RpAb
Kit	Y936	P10721	• PYK	Kinexus	PK673	RpAb
Ksr1	Pan	Q8IVT5	• PSTK	Kinexus	NK090-1	10320
Ksr1	Pan	Q8IVT5	• PSTK	No	sc-6212	GpAb
Ksr1	S406	Q8IVT5	• PSTK	Kinexus	PK675	RpAb
Ksr2	S490	Q6VAB6	• PSTK	Kinexus	PK676	RpAb
LATS1	Pan	O95835	• PSTK	No	AP7035a	RpAb
LATS1	Pan	O95835	• PSTK	Kinexus	NK091-2	RpAb
LATS1	S464	O95835	• PSTK	Kinexus	PK677	RpAb

Target Protein Name	Pan-specific or P-Site	Human UniProt ID	Protein Kinase Type	Kinexus Antibody	Kinexus Antibody Code	Antibody Type
LATS1	S909	O95835	• PSTK	Kinexus	PK678	RpAb
LATS2 (KPM)	Pan	Q9NRM7	• PSTK	Kinexus	NK092-2	RpAb
LATS2 (KPM)	Pan	Q9NRM7	• PSTK	Kinexus	NK092-1	RpAb
Lck	Pan	P06239	• PYK	No	sc-433	MmAb
Lck	Y192	P06239	• PYK	Kinexus	PK679	RpAb
Lck	Y263+Y264	P06239	• PYK	Kinexus	PK680	RpAb
Lck	Y394	P06239	• PYK	Kinexus	PK903	RpAb
LIMK1	T508	P53667	• PSTK	Kinexus	PK681	RpAb
LKB1 (STK11; STRAD)	Pan	Q15831	• PSTK	Kinexus	NK227-3	RpAb
LKB1 (STK11; STRAD)	Pan	Q15831	• PSTK	Kinexus	NK227-4	RpAb
LKB1 (STK11; STRAD)	Pan	Q15831	• PSTK	Kinexus	NK227-2	RpAb
LKB1 (STK11; STRAD)	S31	Q15831	• PSTK	Kinexus	PK682	RpAb
LKB1 (STK11; STRAD)	S428	Q15831	• PSTK	Kinexus	PK683	RpAb
LMR2 (LMTK2; KPI-2)	S1450	Q8IWU2	• PSTK	Kinexus	PK684	RpAb
LOK	S191	O94804	• PSTK	Kinexus	PK685-2	RpAb
LOK	S191	O94804	• PSTK	Kinexus	PK685	RpAb
LOK	T952	O94804	• PSTK	Kinexus	PK686	RpAb
LRRK2 (PARK8)	Pan	Q5S007	• PSTK	No	NK303-1	MmAb
LRRK2 (PARK8)	S910	Q5S007	• PSTK	Kinexus	PK904	RpAb
LRRK2 (PARK8)	S935	Q5S007	• PSTK	Kinexus	PK905	RpAb
LRRK2 (PARK8)	S935	Q5S007	• PSTK	Kinexus	PK935	RpAb
LRRK2 (PARK8)	S973	Q5S007	• PSTK	Kinexus	PK936	RpAb
LRRK2 (PARK8)	T1410	Q5S007	• PSTK	Kinexus	PK937	RpAb
LRRK2 (PARK8)	T1503	Q5S007	• PSTK	Kinexus	PK938	RpAb
LRRK2 (PARK8)	T2031+S2032	Q5S007	• PSTK	Kinexus	PK939	RpAb
Lyn	Pan	P07948	• PYK	Kinexus	NK095-2	RpAb
Lyn	Pan	P07948	• PYK	No	sc-7274	MmAb
Lyn	Y508	P07948	• PYK	Kinexus	PK688	RpAb
MAK	Pan	P20794	• PSTK	No	AP7542b	RpAb
MAK	T157	P20794	• PSTK	Kinexus	PK689	RpAb
MAPKAPK2 (RPS6KC1)	Pan	P49137	• PSTK	Kinexus	NK097-2	RpAb
MAPKAPK2 (RPS6KC1)	Pan	P49137	• PSTK	No	sc-6221	GpAb
MAPKAPK2 (RPS6KC1)	Pan	P49137	• PSTK	No	sc-7871	RpAb
MAPKAPK2 (RPS6KC1)	T222	P49137	• PSTK	Kinexus	PK690	RpAb
MAPKAPK2 (RPS6KC1)	Y225+T226	P49137	• PSTK	Kinexus	PK691	RpAb
MAPKAPK3	Y76	Q16644	• PSTK	Kinexus	PK692	RpAb
MAPKAPK5 (PRAK)	Pan	Q8IW41	• PSTK	No	sc-8251	GpAb
MAPKAPK5 (PRAK)	T186	Q8IW41	• PSTK	Kinexus	PK693	RpAb
MARK1	Pan	Q9P0L2	• PSTK	Kinexus	NK098-2	RpAb
MARK1	T215	Q9P0L2	• PSTK	Kinexus	PK694	RpAb
MARK1	T215	Q9P0L2	• PSTK	Kinexus	PK695	RpAb
MARK2	Pan	Q7KZ17	• PSTK	Kinexus	NK275-2	RpAb
MARK2	Pan	Q7KZ17	• PSTK	Kinexus	NK275-1	RpAb
MARK3	Pan	P27448	• PSTK	Kinexus	NK276-2	RpAb
MARK3	Pan	P27448	• PSTK	Kinexus	NK276-1	RpAb
MARK3	T507	P27448	• PSTK	Kinexus	PK697	RpAb
MARK4	Pan	Q96L34	• PSTK	Kinexus	NK277-2	RpAb
MARK4	Pan	Q96L34	• PSTK	Kinexus	NK277-1	RpAb
MEK1 (MAP2K1; MKK1)	Pan	Q02750	• DSK	Kinexus	NK099-8	RpAb
MEK1 (MAP2K1; MKK1)	Pan	Q02750	• DSK	Kinexus	NK099-9	RpAb
MEK1 (MAP2K1; MKK1)	Pan	Q02750	• DSK	Kinexus	NK099-7	RpAb
MEK1 (MAP2K1; MKK1)	Pan	Q02750	• DSK	Kinexus	NK099-3	RpAb
MEK1 (MAP2K1; MKK1)	Pan	Q02750	• DSK	Kinexus	NK099-4	RpAb
MEK1 (MAP2K1; MKK1)	Pan	Q02750	• DSK	No	610122	MmAb
MEK1 (MAP2K1; MKK1)	S222+Pan	Q02750	• DSK	Kinexus	PK698	RpAb
MEK1 (MAP2K1; MKK1)	T286	Q02750	• DSK	Kinexus	PK886	RpAb
MEK1 (MAP2K1; MKK1)	S298	Q02750	• DSK	No	KAP-MA023	RpAb
MEK2 (MAP2K2; MKK2)	Pan	P36507	• DSK	No	AP7905a	RpAb
MEK2 (MAP2K2; MKK2)	Pan	P36507	• DSK	Kinexus	NK100-5	RpAb
MEK2 (MAP2K2; MKK2)	Pan	P36507	• DSK	Kinexus	NK100-4	RpAb
MEK2 (MAP2K2; MKK2)	Pan	P36507	• DSK	Kinexus	NK100-6	RpAb
MEK2 (MAP2K2; MKK2)	Pan	P36507	• DSK	No	610236	MmAb
MEK5 (MAP2K5; MKK5)	Pan	Q13163	• DSK	Kinexus	NK104-4	RpAb
MEK5 (MAP2K5; MKK5)	Pan	Q13163	• DSK	Kinexus	NK104-5	RpAb
MEK5 (MAP2K5; MKK5)	Pan	Q13163	• DSK	Kinexus	NK104-2	RpAb
MEK5 (MAP2K5; MKK5)	Pan	Q13163	• DSK	Kinexus	NK104-3	RpAb
MEK5 (MAP2K5; MKK5)	Pan	Q13163	• DSK	No	sc-1287	GpAb
MEK5 (MAP2K5; MKK5)	S311	Q13163	• DSK	Kinexus	PK699	RpAb
MEKK1 (MAP3K1)	Pan	Q13233	• PSTK	No	AP7907a	RpAb
MEKK1 (MAP3K1)	Pan	Q13233	• PSTK	Kinexus	NK107-3	RpAb
MEKK1 (MAP3K1)	Pan	Q13233	• PSTK	No	sc-252	RpAb
MEKK2 (MAP3K2)	Pan	Q9Y2U5	• PSTK	No	AP7908a	RpAb
MEKK2 (MAP3K2)	Pan	Q9Y2U5	• PSTK	Kinexus	NK108-3	RpAb
MEKK2 (MAP3K2)	Pan	Q9Y2U5	• PSTK	Kinexus	NK108-4	RpAb
MEKK2 (MAP3K2)	Pan	Q9Y2U5	• PSTK	Kinexus	NK108-5	RpAb
MEKK2 (MAP3K2)	Pan	Q9Y2U5	• PSTK	No	sc-1089	RpAb
MEKK2 (MAP3K2)	S239+Pan	Q9Y2U5	• PSTK	Kinexus	PK700	RpAb
MEKK4 (MAP3K4)	Pan	Q9Y6R4	• PSTK	No	AP7910a	RpAb
MEKK6 (MAP3K6; ASK2)	Pan	O95382	• PSTK	Kinexus	NK225-2	RpAb
MEKK6 (MAP3K6; ASK2)	Pan	O95382	• PSTK	Kinexus	NK225-3	RpAb

Target Protein Name	Pan-specific or P-Site	Human UniProt ID	Protein Kinase Type	Kinexus Antibody	Kinexus Antibody Code	Antibody Type
MEKK6 (MAP3K6; ASK2)	Pan	Q95382	• PSTK	Kinexus	NK225-4	RpAb
MELK	Pan	Q14680	• PSTK	Kinexus	NK229-3	RpAb
MELK	Pan	Q14680	• PSTK	Kinexus	NK229-4	RpAb
MELK	Pan	Q14680	• PSTK	Kinexus	NK229-2	RpAb
MELK	Y438	Q14680	• PSTK	Kinexus	PK701	RpAb
MERTK (MER)	Y749	Q12866	• PYK	Kinexus	PK702	RpAb
MERTK (MER)	Y749+Y753	Q12866	• PYK	Kinexus	PK703	RpAb
MERTK (MER)	Y753	Q12866	• PYK	Kinexus	PK704	RpAb
Met (HGF receptor)	Pan	P08581	• PYK	Kinexus	NK110-3	RpAb
Met (HGF receptor)	Pan	P08581	• PYK	Kinexus	NK110-4	RpAb
Met (HGF receptor)	Pan	P08581	• PYK	Kinexus	NK110-2	RpAb
Met (HGF receptor)	Y1003	P08581	• PYK	Kinexus	PK708	RpAb
Met (HGF receptor)	Y1230+Pan	P08581	• PYK	Kinexus	PK709	RpAb
Met (HGF receptor)	Y1234	P08581	• PYK	Kinexus	PK710	RpAb
Met (HGF receptor)	S1236	P08581	• PYK	Kinexus	PK705	RpAb
Met (HGF receptor)	Y1234+Y1235	P08581	• PYK	Kinexus	PK711	RpAb
Met (HGF receptor)	Y1234+Y1235	P08581	• PYK	Kinexus	PK712	RpAb
Met (HGF receptor)	T1355+Y1356	P08581	• PYK	Kinexus	PK707	RpAb
Met (HGF receptor)	T1241	P08581	• PYK	Kinexus	PK706	RpAb
MKK3 (MAP2K3; MEK3)	Pan	P46734	• DSK	Kinexus	NK101-4	RpAb
MKK3 (MAP2K3; MEK3)	Pan	P46734	• DSK	Kinexus	NK101-5	RpAb
MKK3 (MAP2K3; MEK3)	Pan	P46734	• DSK	Kinexus	NK101-6	RpAb
MKK3 (MAP2K3; MEK3)	Pan	P46734	• DSK	No	sc-959	RpAb
MKK3 (MAP2K3; MEK3)	Pan	P46734	• DSK	No	sc-960	RpAb
MKK3 (MAP2K3; MEK3)	S218	P46734	• DSK	Kinexus	PK713	RpAb
MKK3 (MAP2K3; MEK3)	Y230	P46734	• DSK	Kinexus	PK714	RpAb
MKK3 (MAP2K3; MEK3); MKK6 (MAP2K6)	Pan	P46734	• DSK	No	sc-8407	MmAb
MKK4 (MAP2K4; MEK4)	Pan	P45985	• DSK	Kinexus	NK103-4	RpAb
MKK4 (MAP2K4; MEK4)	Pan	P45985	• DSK	Kinexus	NK103-5	RpAb
MKK4 (MAP2K4; MEK4)	Pan	P45985	• DSK	Kinexus	NK103-6	RpAb
MKK4 (MAP2K4; MEK4)	Pan	P45985	• DSK	No	sc-964	RpAb
MKK4 (MAP2K4; MEK4)	S257	P45985	• DSK	Kinexus	PK715	RpAb
MKK4 (MAP2K4; MEK4)	S80+Pan	P45985	• DSK	Kinexus	PK716	RpAb
MKK6 (MAP2K6; MEK6)	Pan	P52564	• DSK	Kinexus	NK105-4	RpAb
MKK6 (MAP2K6; MEK6)	Pan	P52564	• DSK	Kinexus	NK105-5	RpAb
MKK6 (MAP2K6; MEK6)	Pan	P52564	• DSK	Kinexus	NK105-3	RpAb
MKK7 (MAP2K7; MEK7)	Pan	O14733	• DSK	Kinexus	NK106-4	RpAb
MKK7 (MAP2K7; MEK7)	Pan	O14733	• DSK	Kinexus	NK106-5	RpAb
MKK7 (MAP2K7; MEK7)	Pan	O14733	• DSK	Kinexus	NK106-3	RpAb
MKK7 (MAP2K7; MEK7)	T275	O14733	• DSK	Kinexus	PK717	RpAb
MLK1 (MAP3K9)	Pan	P80192	• PSTK	Kinexus	NK278-1	RpAb
MLK2 (MAP3K10)	Pan	Q02779	• PSTK	Kinexus	NK279-1	RpAb
MLK3 (MAP3K11)	S281	Q16584	• PSTK	Kinexus	PK718	RpAb
MLK3 (MAP3K11)	T277+S281	Q16584	• PSTK	Kinexus	PK870	RpAb
MLK4 (MAP3K21)	Pan	Q5TCX8	• PSTK	Kinexus	NK280-1	RpAb
MLTK	T161+T162	Q9NYL2	• PSTK	Kinexus	PK719	RpAb
Mnk1	T250+T255	Q9BUB5	• PSTK	No	2111L	RpAb
Mnk2	Pan	Q9HBH9	• PSTK	No	sc-7445	GpAb
MOK (RAGE)	Pan	Q9UQ07	• PSTK	Kinexus	NK281-2	RpAb
MOK (RAGE)	Pan	Q9UQ07	• PSTK	Kinexus	NK281-1	RpAb
MOK (RAGE)	Y167	Q9UQ07	• PSTK	Kinexus	PK721	RpAb
MOK (RAGE)	T159+Y161	Q9UQ07	• PSTK	Kinexus	PK720	RpAb
Mos	Pan	P00540	• PSTK	Kinexus	NK112	RpAb
Mos	Y263	P00540	• PSTK	Kinexus	PK722	RpAb
MRCKa (PK428)	Pan	Q5VT25	• PSTK	Kinexus	NK282-1	RpAb
MRCKb (CDC42BPB)	Pan	Q9Y5S2	• PSTK	Kinexus	NK283-1	RpAb
MSK1 (RPS6KA5)	S212	O75582	• PSTK	Kinexus	PK723	RpAb
MSK1 (RPS6KA5)	S376	O75582	• PSTK	No	9595L	RpAb
MSK2 (RPS6KA4)	T194+S196	O75676	• PSTK	Kinexus	PK868	RpAb
MSK2 (RPS6KA4)	T687	O75676	• PSTK	Kinexus	PK725	RpAb
MST1 (STK4; Krs2)	Pan	Q13043	• PSTK	No	sc-6213	GpAb
MST1 (STK4; Krs2)	Pan	Q13043	• PSTK	No	M77120	MmAb
MST1 (STK4; Krs2)	T183	Q13043	• PSTK	Kinexus	PK871	RpAb
MST1 (STK4; Krs2)	T187	Q13043	• PSTK	Kinexus	PK726	RpAb
MST3 (STK24)	T184+Pan	Q9Y6E0	• PSTK	Kinexus	PK727	RpAb
MST3 (STK24)	T190	Q9Y6E0	• PSTK	Kinexus	PK728	RpAb
mTOR (FRAP)	Pan	P42345	• PSTK	Kinexus	NK116-4	RpAb
mTOR (FRAP)	Pan	P42345	• PSTK	Kinexus	NK116-3	RpAb
mTOR (FRAP)	Pan	P42345	• PSTK	Kinexus	NK116-5	RpAb
mTOR (FRAP)	S2448	P42345	• PSTK	Kinexus	PK729	RpAb
mTOR (FRAP)	S2478+S2481	P42345	• PSTK	Kinexus	PK730	RpAb
MuSK	Pan	O15146	• PYK	No	sc-6009	GpAb
MuSK	Y554	O15146	• PYK	Kinexus	PK953	RpAb
MuSK	Y756	O15146	• PYK	Kinexus	PK872	RpAb
MYT1 (PLPB1)	S143	Q99640	• PSTK	Kinexus	PK887	RpAb
NDR1 (NDR; STK38)	S281+T282	Q15208	• PSTK	Kinexus	PK731	RpAb
Nek1	S1052	Q96PY6	• PSTK	Kinexus	PK940	RpAb
Nek2	Pan	P51955	• PSTK	No	NK117-5	RpAb
Nek2	Pan	P51955	• PSTK	No	sc-7440	GpAb
Nek2	Pan	P51955	• PSTK	No	sc-7439	GpAb

Target Protein Name	Pan-specific or P-Site	Human UniProt ID	Protein Kinase Type	Kinexus Antibody	Kinexus Antibody Code	Antibody Type
Nek2	T170+S171	P51955	• PSTK	Kinexus	PK733	RpAb
Nek2	S171	P51955	• PSTK	Kinexus	PK732	RpAb
Nek4	Pan	P51957	• PSTK	No	AP8076b	RpAb
Nek6	S206	Q9HC98	• PSTK	Kinexus	PK734	RpAb
Nek7	T191+S195	Q8TDX7	• PSTK	Kinexus	PK735	RpAb
NIK (MAP3K14; NLK; LAK1)	Pan	Q99558	• PSTK	No	AP8004a	RpAb
NIK (MAP3K14; NLK; LAK1)	Pan	Q99558	• PSTK	No	sc-7211	RpAb
NIK (MAP3K14; NLK; LAK1)	Pan	Q99558	• PSTK	No	sc-6364	GpAb
NLK	Pan	Q99558	• PSTK	No	sc-8211	GpAb
NLK	T298	Q9UBE8	• PSTK	Kinexus	PK736	RpAb
NuaK1 (ARK5)/Nuak2	T211	O60285	• PSTK	Kinexus	PK737	RpAb
Obscn	Pan	Q5VST9	• PSTK	Kinexus	NK247-2	RpAb
Obscn	Pan	Q5VST9	• PSTK	Kinexus	NK247-3	RpAb
Obscn	Pan	Q5VST9	• PSTK	Kinexus	NK247-1	RpAb
OSR1 (OXSR1)	T185	O95747	• PSTK	Kinexus	PK738	RpAb
p38a MAPK (MAPK14; CSBP; MXI2;	Pan	Q15759	• PSTK	Kinexus	NK120-6	RpAb
p38a MAPK (MAPK14; CSBP; MXI2;	Pan	Q15759	• PSTK	Kinexus	NK120-8	RpAb
p38a MAPK (MAPK14; CSBP; MXI2;	Pan	Q15759	• PSTK	Kinexus	NK120-9	RpAb
p38a MAPK (MAPK14; CSBP; MXI2;	Pan	Q16539	• PSTK	Kinexus	NK120-10	RpAb
p38a MAPK (MAPK14; CSBP; MXI2;	Pan	Q15759	• PSTK	No	sc-7973	MmAb
p38a MAPK (MAPK14; CSBP; MXI2;	Pan	Q15759	• PSTK	No	NK120-4	MmAb
p38a MAPK (MAPK14; CSBP; MXI2;	T180+Y182	Q16539	• PSTK	Kinexus	PK739	RpAb
p38a MAPK (MAPK14; CSBP; MXI2;	T180+Y182	Q15759	• PSTK	Kinexus	PK740	RpAb
p38a MAPK (MAPK14; CSBP; MXI2;	Y182	Q15759	• PSTK	Kinexus	PK959	RpAb
p38b MAPK (MAPK11)	Pan	Q15759	• PSTK	Kinexus	NK248-2	RpAb
p38b MAPK (MAPK11)	Pan	Q15759	• PSTK	Kinexus	NK248-1	RpAb
p38b MAPK (MAPK11)	T180+Y182	Q15759	• PSTK	Kinexus	PK741-2	RpAb
p38b MAPK (MAPK11)	T180+Y182	Q15759	• PSTK	Kinexus	PK741	RpAb
p38d MAPK (MAPK13)	Pan	O15264	• PSTK	Kinexus	NK121-3	RpAb
p38d MAPK (MAPK13)	Pan	O15264	• PSTK	Kinexus	NK121-4	RpAb
p38d MAPK (MAPK13)	Pan	O15264	• PSTK	Kinexus	NK121-2	RpAb
p38d MAPK (MAPK13)	T180+Y182	O15264	• PSTK	Kinexus	PK960	RpAb
p38d MAPK (MAPK13)	Y182	O15264	• PSTK	Kinexus	PK743	RpAb
p38d MAPK (MAPK13)	S261+T265	O15264	• PSTK	Kinexus	PK888	RpAb
p38g MAPK (MAPK12; ERK6; SAPK3)	Pan	P53778	• PSTK	No	NK059-2	RpAb
p38g MAPK (MAPK12; ERK6; SAPK3)	Pan	P53778	• PSTK	Kinexus	NK059-3	RpAb
p38g MAPK (MAPK12; ERK6; SAPK3)	Pan	P53778	• PSTK	Kinexus	NK059-4	RpAb
p38g MAPK (MAPK12; ERK6; SAPK3)	Pan	P53778	• PSTK	Kinexus	NK059-5	RpAb
p38g MAPK (MAPK12; ERK6; SAPK3)	Pan	P53778	• PSTK	No	sc-6023	GpAb
p38g MAPK (MAPK12; ERK6; SAPK3)	Pan	P53778	• PSTK	No	sc-6022	GpAb
p38g MAPK (MAPK12; ERK6; SAPK3)	Pan	P53778	• PSTK	No	07-139	RpAb
p70S6K (S6Ka; RPS6KB1)	Pan	P23443	• PSTK	Kinexus	NK223-2	RpAb
p70S6K (S6Ka; RPS6KB1)	Pan	P23443	• PSTK	Kinexus	NK223-4	RpAb
p70S6K (S6Ka; RPS6KB1)	Pan	P23443	• PSTK	No	sc-230	RpAb
p70S6K (S6Ka; RPS6KB1)	T252	P23443	• PSTK	Kinexus	PK744	RpAb
p70S6K (S6Ka; RPS6KB1)	T412	P23443	• PSTK	No	9205L	RpAb
p70S6K (S6Ka; RPS6KB1)	T412	P23443	• PSTK	Kinexus	PK745	RpAb
p70S6K (S6Ka; RPS6KB1)	S434	P23443	• PSTK	No	11269	RpAb
p70S6K (S6Ka; RPS6KB1)	T444+S447	P23443	• PSTK	Kinexus	PK746	RpAb
p70S6K (S6Ka; RPS6KB1)	S447	P23443	• PSTK	No	11284	RpAb
p70S6Kb (S6Kb2; RPS6KB2)	S423	Q9UBS0	• PSTK	Kinexus	PK747	RpAb
PAK1 (PAKa)	Pan	Q13153	• PSTK	Kinexus	NK122-2	RpAb
PAK1 (PAKa)	Pan	Q13153	• PSTK	No	sc-881	RpAb
PAK1 (PAKa)	S144	Q13153	• PSTK	Kinexus	PK748	RpAb
PAK1 (PAKa)	T212	Q13153	• PSTK	No	Y011154	RpAb
PAK1 (PAKa)	T423	Q13153	• PSTK	Kinexus	PK749	RpAb
PAK2 (PAKq)	Pan	Q13177	• PSTK	Kinexus	NK200	RpAb
PAK2 (PAKq)	Pan	Q13177	• PSTK	No	sc-1872	GpAb
PAK2 (PAKq)	Y130	Q13177	• PSTK	Kinexus	PK751	RpAb
PAK2 (PAKq)	S141	Q13177	• PSTK	Kinexus	PK750	RpAb
PAK4	S474	O96013	• PSTK	Kinexus	PK752	RpAb
PAK5 (PAK7)	Pan	Q9P286	• PSTK	Kinexus	NK190-3	RpAb
PAK5 (PAK7)	Pan	Q9P286	• PSTK	Kinexus	NK190-2	RpAb
PAK5 (PAK7)	S602	Q9P286	• PSTK	Kinexus	PK753	RpAb
PAK6	Pan	Q9NQU5	• PSTK	Kinexus	NK124-2	RpAb
PBK (TOPK)	Pan	Q96KB5	• PSTK	Kinexus	NK284-1	RpAb
PBK (TOPK)	Y74	Q96KB5	• PSTK	Kinexus	PK754	RpAb
PBK (TOPK)	Y272	Q96KB5	• PSTK	Kinexus	PK889	RpAb
PCTAIRE1 (CDK16; PCTK1)	Pan	Q00536	• PSTK	No	AP7547b	RpAb
PCTAIRE1 (CDK16; PCTK1)	Y176	Q00536	• PSTK	Kinexus	PK755	RpAb
PCTK2 (PCTAIRE2; CDK17)	Pan	Q00537	• PSTK	Kinexus	NK285-1	RpAb
PCTK2 (PCTAIRE2; CDK17))	S180	Q00537	• PSTK	Kinexus	PK756	RpAb
PCTK3 (PCTAIRE3; CDK18)	Pan	Q07002	• PSTK	Kinexus	NK286-1	RpAb
PDGFRA	Pan	P16234	• PYK	Kinexus	NK242-2	RpAb
PDGFRA	Pan	P16234	• PYK	Kinexus	NK242-1	RpAb
PDGFRA	Y762	P16234	• PYK	Kinexus	PK758	RpAb
PDGFRA	Y768	P16234	• PYK	Kinexus	PK759	RpAb
PDGFRA	S847+Y849	P16234	• PYK	Kinexus	PK757	RpAb
PDGFRB	Pan	P09619	• PYK	Kinexus	NK243-3	RpAb
PDGFRB	Pan	P09619	• PYK	Kinexus	NK243-1	RpAb

Target Protein Name	Pan-specific or P-Site	Human UniProt ID	Protein Kinase Type	Kinexus Antibody	Kinexus Antibody Code	Antibody Type
PDGFRB	Y716	P09619	• PYK	No	07-021	RpAb
PDK1 (PDHK1)	Pan	Q15118	• PSTK	Kinexus	NN179-2	RpAb
PDK1 (PDHK1)	Pan	Q15118	• PSTK	Kinexus	NN179-1	RpAb
PDK1 (PDPK1)	Pan	O15530	• PSTK	Kinexus	NK126-3	RpAb
PDK1 (PDPK1)	Pan	O15530	• PSTK	Kinexus	NK126-4	RpAb
PDK1 (PDPK1)	S241	O15530	• PSTK	Kinexus	PK760	RpAb
PDK2 (PDHK2; PyDK2)	Pan	Q15119	• PSTK	Kinexus	NN180-2	RpAb
PDK2 (PDHK2; PyDK2)	Pan	Q15119	• PSTK	Kinexus	NN180-1	RpAb
PDK3 (PDHK3)	Pan	Q15120	• PSTK	Kinexus	NN181-2	RpAb
PDK4 (PDHK4)	Pan	Q16654	• PSTK	Kinexus	NN178-3	RpAb
PDK4 (PDHK4)	Pan	Q16654	• PSTK	Kinexus	NN178-2	RpAb
PIK3CA	Y317	P42336	• PI-K	Kinexus	PK894	RpAb
PIK3R1 (PI3K p85)	Y467	P27986	• PI-K-	Kinexus	PN526	RpAb
PIK3R1 (PI3K p85)	Y580	P27986	• PI-K-	Kinexus	PN527	RpAb
PIK3R2	Y464	O00459	• PI-K-	Kinexus	PN528	RpAb
Pim1	Pan	P11309	• PSTK	Kinexus	NK258-2	RpAb
Pim2	Pan	Q9P1W9	• PSTK	Kinexus	NK288-2	RpAb
Pim2	Pan	Q9P1W9	• PSTK	Kinexus	NK288-1	RpAb
Pim2	T195	Q9P1W9	• PSTK	Kinexus	PK761	RpAb
Pim3	Pan	Q86V86	• PSTK	Kinexus	NK289-1	RpAb
PINK1 (BRPK)	Pan	Q9BXM7	• PSTK	No	NK304-1	MmAb
PINK1 (BRPK)	S228	Q9BXM7	• PSTK	Kinexus	PK906	RpAb
PINK1 (BRPK)	T257	Q9BXM7	• PSTK	Kinexus	PK942	RpAb
PINK1 (BRPK)	T313	Q9BXM7	• PSTK	Kinexus	PK907	RpAb
PINK1 (BRPK)	S402	Q9BXM7	• PSTK	Kinexus	PK908	RpAb
PIP5K	S307	Q9Y2I7	• PSTK	Kinexus	PK762	RpAb
PIP5K	Y1772+Y1773	Q9Y2I7	• PSTK	Kinexus	PK943	RpAb
PIP5K2a (PIP5K2A)	Pan	P48426	• PI-K	No	NK209	RpAb
PKCa (PRKCA)	Pan	P17252	• PSTK	Kinexus	NK201	RpAb
PKCa (PRKCA)	Pan	P17252	• PSTK	No	P16520	MmAb
PKCa (PRKCA)	Y195	P17252	• PSTK	Kinexus	PK764	RpAb
PKCa (PRKCA)	S226+T228	P17252	• PSTK	Kinexus	PK944	RpAb
PKCa (PRKCA)	T497	P17252	• PSTK	Kinexus	PK763	RpAb
PKCa (PRKCA)	T638	P17252	• PSTK	Kinexus	PK909	RpAb
PKCa (PRKCA)	T638/T641	P17252	• PSTK	No	9375L	RpAb
PKCb (PRKCB1)	Pan	P05771	• PSTK	Kinexus	NK133-2	RpAb
PKCb (PRKCB1)	Pan	P05771	• PSTK	No	sc-209	RpAb
PKCb (PRKCB1)	T500	P05771	• PSTK	Kinexus	PK766	RpAb
PKCb (PRKCB1)	S661	P05771	• PSTK	Kinexus	PK765	RpAb
PKCb2 (PRKCB2)	Pan	P05771	• PSTK	No	sc-210	RpAb
PKCd (PRKCD)	Pan	Q05655	• PSTK	No	sc-213	RpAb
PKCd (PRKCD)	Y313	Q05655	• PSTK	Kinexus	PK768	RpAb
PKCd (PRKCD)	Y334	Q05655	• PSTK	Kinexus	PK769	RpAb
PKCd (PRKCD)	T507	Q05655	• PSTK	Kinexus	PK767	RpAb
PKCd (PRKCD)	S664	Q05655	• PSTK	No	44-976G	RpAb
PKCe (PRKCE)	Pan	Q02156	• PSTK	No	sc-214	RpAb
PKCe (PRKCE)	Pan	Q02156	• PSTK	No	sc-214-G	GpAb
PKCq (PRKCG)	Pan	P05129	• PSTK	No	sc-211	RpAb
PKCq (PRKCG)	T514	P05129	• PSTK	No	KAP-PK011	RpAb
PKCq (PRKCG)	T655	P05129	• PSTK	No	44-965	RpAb
PKCh (PRKCH; PRKCeta)	Pan	P24723	• PSTK	No	sc-215	RpAb
PKCi (PRKCiota)/PKCl (PRKClambda)	Pan	P41743	• PSTK	No	sc-32020	GpAb
PKCt (PRKCC; PKC-q; PKC-theta)	Y545	Q04759	• PSTK	Kinexus	PK773	RpAb
PKCt (PRKCC; PKC-q; PKC-theta)	S676	Q04759	• PSTK	No	11297	RpAb
PKCt (PRKCC; PKC-q; PKC-theta)	S685	Q04759	• PSTK	Kinexus	PK961	RpAb
PKCt (PRKCC; PKC-q; PKC-theta)	S695	Q04759	• PSTK	Kinexus	PK772	RpAb
PKCt (PRKCC; PKC-q; PKC-theta)	S695	Q04759	• PSTK	No	11173	RpAb
PKCz (PRKCZ)	Pan	Q05513	• PSTK	No	sc-216	RpAb
PKCz (PRKCZ)	S262+Y263	Q05513	• PSTK	Kinexus	PK774	RpAb
PKCz (PRKCZ)	T410	Q05513	• PSTK	Kinexus	PK775	RpAb
PKD1 (PRKCM; PKCm; PRKD1)	Pan	Q15139	• PSTK	No	sc-639	RpAb
PKD1 (PRKCM; PKCm; PRKD1)	S205	Q15139	• PSTK	Kinexus	PK770	RpAb
PKD1 (PRKCM; PKCm; PRKD1)	S738+S742	Q15139	• PSTK	Kinexus	PK771	RpAb
PKD1 (PRKCM; PKCm; PRKD1)	S910	Q15139	• PSTK	Kinexus	PK912	RpAb
PKD2 (PRKD2)	S197+S198	Q9BZL6	• PSTK	Kinexus	PK784	RpAb
PKD3 (PRKCN)	Pan	O94806	• PSTK	Kinexus	NK139-2	RpAb
PKG1a (PRKG1A)	Pan	Q13976	• PSTK	Kinexus	NK202-2	RpAb
PKG1a (PRKG1A)	Pan	Q13976	• PSTK	Kinexus	NK202	RpAb
PKG1a (PRKG1A)	Pan	Q13976	• PSTK	No	sc-10344	GpAb
PKG1a (PRKG1A)	T515+T517	Q13976	• PSTK	Kinexus	PK776	RpAb
PKG1a (PRKG1A)	T517	Q13976	• PSTK	Kinexus	PK776-2	RpAb
PKG2 (PRKG2)	Pan	Q13237	• PSTK	Kinexus	NK290-2	RpAb
PKG2 (PRKG2)	Pan	Q13237	• PSTK	Kinexus	NK290-1	RpAb
PKN1 (PRK1)	Pan	Q16512	• PSTK	No	sc-1842	GpAb
PKN1 (PRK1)	T774	Q16512	• PSTK	Kinexus	PK781	RpAb
PKN2 (PRK2)	Pan	Q16513	• PSTK	Kinexus	NK149-3	RpAb
PKR1 (PRKR; EIF2AK2)	Pan	P19525	• PSTK	No	sc-6282	MmAb
PKR1 (PRKR; EIF2AK2)	T446+Pan	P19525	• PSTK	Kinexus	PK777	RpAb
PKR1 (PRKR; EIF2AK2)	T451	P19525	• PSTK	Kinexus	PK910	RpAb
Plk1 (PLK)	Pan	P53350	• PSTK	Kinexus	NK145-2	RpAb

Target Protein Name	Pan-specific or P-Site	Human UniProt ID	Protein Kinase Type	Kinexus Antibody	Kinexus Antibody Code	Antibody Type
Plk1 (PLK)	Pan	P53350	• PSTK	No	33-1700	RpAb
Plk1 (PLK)	T210	P53350	• PSTK	Kinexus	PK778	RpAb
Plk1 (PLK)	T210	P53350	• PSTK	Kinexus	PK778-2	RpAb
Plk1 (PLK)	Y217	P53350	• PSTK	Kinexus	PK779	RpAb
Plk2 (SNK)	Pan	Q9NYY3	• PSTK	No	NK146	RpAb
Plk2 (SNK)	Pan	Q9NYY3	• PSTK	No	sc-9577	GpAb
Plk3 (CNK; FNK)	Pan	Q9H4B4	• PSTK	No	AP3213a	RpAb
Plk3 (CNK; FNK)	Pan	Q9H4B4	• PSTK	Kinexus	NK147-2	RpAb
Plk3 (CNK; FNK)	Pan	Q9H4B4	• PSTK	No	sc-9578	GpAb
Plk3 (CNK; FNK)	Pan	Q9H4B4	• PSTK	No	sc-9580	GpAb
Plk4 (SAK; STK18)	Pan	O00444	• PSTK	Kinexus	NK291-1	RpAb
Plk4 (SAK; STK18)	T170	O00444	• PSTK	Kinexus	PK780	RpAb
PRKACA (PKA; PKACA)	Pan	P17612	• PSTK	No	610981	MmAb
PRKACA/B (PKA; PKACA/B)	T196+T198	P17612	• PSTK	Kinexus	PK782	RpAb
PRKACB (PKA)	Y69	P22694	• PSTK	Kinexus	PK783	RpAb
PRKACB (PKA)	S339	P22694	• PSTK	No	44-992G	RpAb
PRKX	Pan	P51817	• PSTK	Kinexus	NK292-1	RpAb
PRKX	T201+T203	P51817	• PSTK	Kinexus	PK785	RpAb
PRKY	Pan	O43930	• PSTK	Kinexus	NK293-1	RpAb
PRP4K (PRP4; PRPF4B)	Y849	Q13523	• PSTK	Kinexus	PK786	RpAb
PYK2 (PTK2B; FAK2)	Pan	Q14289	• PYK	No	AP7703a	RpAb
PYK2 (PTK2B; FAK2)	Pan	Q14289	• PYK	No	sc-1514	GpAb
PYK2 (PTK2B; FAK2)	Y402	Q14289	• PYK	Kinexus	PK788	RpAb
PYK2 (PTK2B; FAK2)	Y402	Q14289	• PYK	Kinexus	PK787	RpAb
PYK2 (PTK2B; FAK2)	Y579+Y580	Q14289	• PYK	Kinexus	PK789	RpAb
Raf-A (ARaf)	Pan	P10398	• PSTK	Kinexus	NK205-3	RpAb
Raf-A (ARaf)	Pan	P10398	• PSTK	Kinexus	NK205-4	RpAb
Raf-A (ARaf)	Pan	P10398	• PSTK	Kinexus	NK205-5	RpAb
Raf-A (ARaf)	Pan	P10398	• PSTK	No	sc-408	RpAb
Raf-A (ARaf)	Y302	P10398	• PSTK	Kinexus	PK500	RpAb
Raf-B (B-Raf; BRaf; RafB)	Pan	P15056	• PSTK	Kinexus	NK156-4	RpAb
Raf-B (B-Raf; BRaf; RafB)	Pan	P15056	• PSTK	Kinexus	NK156-6	RpAb
Raf-B (B-Raf; BRaf; RafB)	Pan	P15056	• PSTK	No	sc-9002	RpAb
Raf-B (B-Raf; BRaf; RafB)	Pan	P15056	• PSTK	No	sc-5284	MmAb
Raf-B (B-Raf; BRaf; RafB)	Pan	P15056	• PSTK	No	NH000673M1	MmAb
Raf-B (B-Raf; BRaf; RafB)	S446+S447	P15056	• PSTK	Kinexus	PK534	RpAb
Raf-B (B-Raf; BRaf; RafB)	S729	P15056	• PSTK	Kinexus	PK535	RpAb
Raf1 (c-Raf; RafC)	Pan	P04049	• PSTK	No	610151	MmAb
Raf1 (c-Raf; RafC)	Pan	P04049	• PSTK	Kinexus	NK155-5	RpAb
Raf1 (c-Raf; RafC)	Pan	P04049	• PSTK	Kinexus	NK155-7	RpAb
Raf1 (c-Raf; RafC)	Pan	P04049	• PSTK	Kinexus	NK155-8	RpAb
Raf1 (c-Raf; RafC)	Pan	P04049	• PSTK	Kinexus	NK155-2	RpAb
Raf1 (c-Raf; RafC)	Pan	P04049	• PSTK	Kinexus	NK155-6	RpAb
Raf1 (c-Raf; RafC)	Pan	P04049	• PSTK	No	sc-376142	MmAb
Raf1 (c-Raf; RafC)	Pan	P04049	• PSTK	No	sc-7198	RpAb
Raf1 (c-Raf; RafC)	Pan	P04049	• PSTK	No	sc-227	RpAb
Raf1 (c-Raf; RafC)	S259	P04049	• PSTK	Kinexus	PK790	RpAb
Raf1 (c-Raf; RafC)	S296	P04049	• PSTK	Kinexus	PK791	RpAb
Raf1 (c-Raf; RafC)	S301+T303	P04049	• PSTK	Kinexus	PK792	RpAb
Raf1 (c-Raf; RafC)	S338	P04049	• PSTK	Kinexus	PK913	RpAb
Raf1 (c-Raf; RafC)	Y340+Y341	P04049	• PSTK	Kinexus	PK914	RpAb
Ret (GDNF receptor)	Pan	P07949	• PYK	Kinexus	NK244-2	RpAb
Ret (GDNF receptor)	Pan	P07949	• PYK	Kinexus	NK244-3	RpAb
Ret (GDNF receptor)	Pan	P07949	• PYK	Kinexus	NK244-1	RpAb
Ret (GDNF receptor)	Y905	P07949	• PYK	Kinexus	PK793	RpAb
Ret (GDNF receptor)	Y1062	P07949	• PYK	Kinexus	PK915	RpAb
RIOK1	Y466	Q9BRS2	• PSTK	Kinexus	PK794	RpAb
RIOK2	S332+S335+S337	Q9BVS4	• PSTK	Kinexus	PK890	RpAb
RIPK1 (RIP; RIPK)	Pan	Q13546	• PSTK	No	sc-133102	MmAb
RIPK1 (RIP; RIPK)	S166	Q13546	• PSTK	Kinexus	PK945	RpAb
RIPK1 (RIP; RIPK)	S320	Q13546	• PSTK	Kinexus	PK946	RpAb
RIPK1 (RIP; RIPK)	Y384	Q13546	• PSTK	Kinexus	PK795	RpAb
RIPK2 (RICK; RIP2; CARD3)	S176	O43353	• PSTK	Kinexus	PK796	RpAb
RIPK2 (RICK; RIP2; CARD3)	Y381	O43353	• PSTK	Kinexus	PK797	RpAb
ROCK1 (ROKb)	T233	Q13464	• PSTK	Kinexus	PK947	RpAb
ROCK1 (ROKb)	Y913	Q13464	• PSTK	Kinexus	PK798	RpAb
ROCK2 (ROKa)	Pan	O75116	• PSTK	No	sc-1851	GpAb
ROCK2 (ROKa)	Pan	O75116	• PSTK	No	07-443	RpAb
ROCK2 (ROKa)	Y722	O75116	• PSTK	Kinexus	PK799	RpAb
Ron (RONa; MST1R)	Pan	Q04912	• PYK	Kinexus	NK161-3	RpAb
Ron (RONa; MST1R)	Pan	Q04912	• PYK	Kinexus	NK161-4	RpAb
Ron (RONa; MST1R)	Pan	Q04912	• PYK	Kinexus	NK161-2	RpAb
Ron (RONa; MST1R)	Y1238	Q04912	• PYK	Kinexus	PK800	RpAb
Ron (RONa; MST1R)	Y1238+Y1239	Q04912	• PYK	Kinexus	PK801	RpAb
ROR2 (RON2)	Y645+Y646	Q01974	• PYK	Kinexus	PK802	RpAb
Ros (ROS1)	Pan	P08922	• PYK	Kinexus	NK163-3	RpAb
Ros (ROS1)	Pan	P08922	• PYK	Kinexus	NK163-4	RpAb
Ros (ROS1)	Pan	P08922	• PYK	Kinexus	NK163-2	RpAb
Ros (ROS1)	Y2114+Y2115	P08922	• PYK	Kinexus	PK803	RpAb
RSK1 (RPS6KA1; p90RSK)	Pan	Q15418	• PSTK	Kinexus	NK164-3	RpAb

Target Protein Name	Pan-specific or P-Site	Human UniProt ID	Protein Kinase Type	Kinexus Antibody	Kinexus Antibody Code	Antibody Type
RSK1 (RPS6KA1; p90RSK)	Pan	Q15418	• PSTK	No	sc-231	RpAb
RSK1 (RPS6KA1; p90RSK)	Y220+S221	Q15418	• PSTK	Kinexus	PK807	RpAb
RSK1 (RPS6KA1; p90RSK)	S221	Q15418	• PSTK	Kinexus	PK804	RpAb
RSK1 (RPS6KA1; p90RSK)	S380	Q15418	• PSTK	Kinexus	PK805	RpAb
RSK1 (RPS6KA1; p90RSK)	T573	Q15418	• PSTK	Kinexus	PK806	RpAb
RSK2 (RPS6KA3)	Pan	P51812	• PSTK	Kinexus	NK165-2	RpAb
RSK2 (RPS6KA3)	Pan	P51812	• PSTK	Kinexus	NK165-3	RpAb
RSK2 (RPS6KA3)	Pan	P51812	• PSTK	No	AF1518	RpAb
RSK3 (RPS6KA2)	Y217+S218	Q15349	• PSTK	Kinexus	PK808	RpAb
RSK4 (RPS6KA6)	Pan	Q9UK32	• PSTK	Kinexus	NK166-2	RpAb
RYK	Pan	P34925	• PYK	No	AP7677b	RpAb
SCYL1	S754	Q96KG9	• PSTK	Kinexus	PK809	RpAb
SGK1	Pan	O00141	• PSTK	Kinexus	NK294-1	RpAb
Sgk223	Y413	Q86YV5	• PSTK	Kinexus	PK810	RpAb
Sgk269 (PEAK1)	Y635	Q9H792	• PSTK	Kinexus	PK811	RpAb
Sgk288 (ANKK1)	Pan	Q8NFD2	• PSTK	Kinexus	NK295-1	RpAb
SGK3 (CISK; SGKL)	Pan	Q96BR1	• PSTK	Kinexus	NK170-4	RpAb
SGK3 (CISK; SGKL)	Pan	Q96BR1	• PSTK	Kinexus	NK170-3	RpAb
SIK (SNF1LK)	Pan	P57059	• PSTK	Kinexus	NK251-2	RpAb
SIK (SNF1LK)	Pan	P57059	• PSTK	Kinexus	NK251-3	RpAb
SIK (SNF1LK)	Pan	P57059	• PSTK	Kinexus	NK251-1	RpAb
SIK (SNF1LK)	T182	P57059	• PSTK	Kinexus	PK812	RpAb
SIK2 (QIK)	Pan	Q9H0K1	• PSTK	Kinexus	NK249-2	RpAb
SIK2 (QIK)	Pan	Q9H0K1	• PSTK	Kinexus	NK249-3	RpAb
SIK2 (QIK)	Pan	Q9H0K1	• PSTK	Kinexus	NK249-1	RpAb
SIK2 (QIK)	S358	Q9H0K1	• PSTK	Kinexus	PK813	RpAb
SIK3 (QSK)	Pan	Q9Y2K2	• PSTK	Kinexus	NK250-2	RpAb
SIK3 (QSK)	Pan	Q9Y2K2	• PSTK	Kinexus	NK250-3	RpAb
SIK3 (QSK)	Pan	Q9Y2K2	• PSTK	Kinexus	NK250-1	RpAb
SIK3 (QSK)	T163	Q9Y2K2	• PSTK	Kinexus	PK814	RpAb
SIK3 (QSK)	T411	Q9Y2K2	• PSTK	Kinexus	PK815	RpAb
SLK	S189	Q9H2G2	• PSTK	Kinexus	PK816	RpAb
SMG1	Pan	Q96Q15	• PYK	Kinexus	NK233-1	RpAb
SMG1	Pan	Q96Q15	• PYK	Kinexus	NK233-3	RpAb
SMG1	Pan	Q96Q15	• PYK	Kinexus	NK233-2	RpAb
SMG1	T3550	Q96Q15	• PYK	Kinexus	PK817	RpAb
Src	Pan	P12931	• PYK	No	sc-19	RpAb
Src	Pan	P12931	• PYK	No	KAP-TK121	RpAb
Src	Pan	P12931	• PYK	No	05-184	MmAb
Src	Y419	P12931	• PYK	Kinexus	PK818	RpAb
Src	Y419	P12931	• PYK	Kinexus	PK818-2	RpAb
Src	Y530	P12931	• PYK	Kinexus	PK948	RpAb
SRPK1	S222	Q96SB4	• PSTK	Kinexus	PK819	RpAb
SRPK1	S587	Q96SB4	• PSTK	Kinexus	PK891	RpAb
SRPK2	Pan	P78362	• PSTK	Kinexus	NK296-1	RpAb
SRPK2	Y319	P78362	• PSTK	Kinexus	PK820	RpAb
STLK3 (DCHT)	T231	Q9UEW8	• PSTK	Kinexus	PK916	RpAb
STLK6 (ALS2CR2)	S304+S306	Q9C0K7	• PSTK	Kinexus	PN911	RpAb
Syk	Pan	P43405	• PYK	No	sc-1240	MmAb
Syk	Y323	P43405	• PYK	Kinexus	PK821	RpAb
Syk	Y352	P43405	• PYK	Kinexus	PK822	RpAb
Syk	Y525+Y526	P43405	• PYK	Kinexus	PK823	RpAb
TAK1 (MAP3K7)	Pan	O43318	• PSTK	Kinexus	NK175-3	RpAb
TAK1 (MAP3K7)	Pan	O43318	• PSTK	No	sc-7967	MmAb
TAK1 (MAP3K7)	Pan	O43318	• PSTK	No	KAP-ST009E	RpAb
TAK1 (MAP3K7)	T184+T187	O43318	• PSTK	Kinexus	PK825	RpAb
TAK1 (MAP3K7)	S439	O43318	• PSTK	Kinexus	PK824	RpAb
TAO1 (TAOK1)	S181	Q7L7X3	• PSTK	Kinexus	PK826	RpAb
TAO1 (TAOK1)	Y309	Q7L7X3	• PSTK	Kinexus	PK827	RpAb
TAO2 (TAOK2)	Pan	Q9UL54	• PSTK	No	sc-514268	MmAb
TAO3 (JIK, TAOK3)	Pan	Q9H2K8	• PSTK	No	AP7902a	RpAb
TAO3 (JIK, TAOK3)	Pan	Q9H2K8	• PSTK	Kinexus	NK087-2	RpAb
TBK1 (IKKd)	Pan	Q9UHD2	• PSTK	No	sc-9085	RpAb
TBK1 (IKKd)	S172	Q9UHD2	• PSTK	Kinexus	PK828	RpAb
TBK1 (IKKd)	S716	Q9UHD2	• PSTK	Kinexus	PK949	RpAb
Tec	Y519	P42680	• PYK	Kinexus	PK829	RpAb
TIE2 (TEK)	Pan	Q02763	• PYK	No	AP7684a	RpAb
TIE2 (TEK)	Y897	Q02763	• PYK	Kinexus	PK830	RpAb
TIE2 (TEK)	Y992	Q02763	• PYK	Kinexus	PK831	RpAb
TLK1	Pan	Q9UKI8	• PSTK	No	AP8101b	RpAb
TNK1	Y277	Q13470	• PYK	Kinexus	PK832	RpAb
TRIM28 (TIF1B)	Y458	Q13263	• PSTK	Kinexus	PK834	RpAb
TRIM28 (TIF1B)	S473	Q13263	• PSTK	Kinexus	PK833	RpAb
TRIM28 (TIF1B)	Y517	Q13263	• PSTK	Kinexus	PK835	RpAb
TRIM33 (TIF1G)	S1119	Q9UPN9	• PSTK	Kinexus	PK836	RpAb
TrkA (NGFR; NTRK1)	Y496	P04629	• PYK	No	sc-8058	MmAb
TrkA (NGFR; NTRK1)	Y680+Y681	P04629	• PYK	Kinexus	PK837	RpAb
TrkB (NTRK2)	Y516	Q16620	• PYK	Kinexus	PK838	RpAb
TrkB (NTRK2)	Y702	Q16620	• PYK	Kinexus	PK839	RpAb
TrkB (NTRK2)	Y706+Y707	Q16620	• PYK	Kinexus	PK917	RpAb

Target Protein Name	Pan-specific or P-Site	Human UniProt ID	Protein Kinase Type	Kinexus Antibody	Kinexus Antibody Code	Antibody Type
TrkC (NTRK3)	Y709+Y710	Q16288	• PYK	Kinexus	PK840	RpAb
TRRAP	Pan	Q9Y4A5	• PSTK	Kinexus	NK232-2	RpAb
TRRAP	Pan	Q9Y4A5	• PSTK	Kinexus	NK232	RpAb
TRRAP	Pan	Q9Y4A5	• PSTK	Kinexus	NK232-3	RpAb
TSSK3	T168	Q96PN8	• PSTK	Kinexus	PK841	RpAb
TTBK1	Pan	Q5TCY1	• PSTK	Kinexus	NK306-1	RpAb
TTBK1	Pan	Q5TCY1	• PSTK	Kinexus	NK306-2	RpAb
TTBK1	T186	Q5TCY1	• PSTK	Kinexus	PK955	RpAb
TTBK2	Pan	Q6IQ55	• PSTK	Kinexus	NK307-2	RpAb
TTK (MPS1)	Pan	P33981	• DSK	No	AP8103a	RpAb
TTK (MPS1)	S677	P33981	• DSK	Kinexus	PK842	RpAb
TTK (MPS1)	Y833+Y836	P33981	• DSK	Kinexus	PK843	RpAb
TXK	Y420	P42681	• PYK	Kinexus	PK844	RpAb
TYK2	Pan	P29597	• PYK	Kinexus	NK181-3	RpAb
TYK2	Pan	P29597	• PYK	Kinexus	NK181-4	RpAb
TYK2	Pan	P29597	• PYK	Kinexus	NK181-5	RpAb
TYK2	Pan	P29597	• PYK	No	sc-169	RpAb
TYK2	Pan	P29597	• PYK	No	sc-7205	RpAb
TYK2	Y292	P29597	• PYK	Kinexus	PK846	RpAb
TYK2	Y1054+Y1055	P29597	• PYK	Kinexus	PK845	RpAb
Tyro3	Y681	Q06418	• PYK	Kinexus	PK847	RpAb
Tyro3	Y685+Y686	Q06418	• PYK	Kinexus	PK848	RpAb
ULK1	Pan	O75385	• PSTK	Kinexus	NK298-1	RpAb
ULK1	Pan	O75385	• PSTK	No	NK298-2	RpAb
ULK2	Pan	Q8IYT8	• PSTK	No	NK354-1	RpAb
ULK3	Pan	Q6PHR2	• PSTK	No	NK355-1	RpAb
ULK4	Pan	Q96C45	• PSTK	Kinexus	NK299-1	RpAb
VACAMKL	Y245	Q8NCB2	• PSTK	Kinexus	PK892	RpAb
VEGFR1 (Flt1)	Pan	P17948	• PYK	No	AP7642b	RpAb
VEGFR1 (Flt1)	Pan	P17948	• PYK	Kinexus	NK226-2	RpAb
VEGFR1 (Flt1)	Pan	P17948	• PYK	Kinexus	NK226-1	RpAb
VEGFR1 (Flt1)	Pan	P17948	• PYK	No	AP7642a	RpAb
VEGFR1 (Flt1)	Y1048	P17948	• PYK	Kinexus	PK850	RpAb
VEGFR1 (Flt1)	Y1053	P17948	• PYK	Kinexus	PK851	RpAb
VEGFR2 (KDR)	Pan	P35968	• PYK	Kinexus	NK245-2	RpAb
VEGFR2 (KDR)	Pan	P35968	• PYK	Kinexus	NK245-3	RpAb
VEGFR2 (KDR)	Pan	P35968	• PYK	Kinexus	NK245-1	RpAb
VEGFR2 (KDR)	Y1054	P35968	• PYK	Kinexus	PK852	RpAb
VEGFR3 (Flt4)	Pan	P35916	• PYK	Kinexus	NK064-3	RpAb
VEGFR3 (Flt4)	Pan	P35916	• PYK	Kinexus	NK064-2	RpAb
VEGFR3 (Flt4)	Y1063	P35916	• PYK	No	11531	RpAb
VEGFR3 (Flt4)	Y1068	P35916	• PYK	Kinexus	PK853	RpAb
Vrk1	Pan	Q99986	• PSTK	No	AP7408c	RpAb
Wee1	Pan	P30291	• DSK	Kinexus	NK185	RpAb
Wee1	S642	P30291	• DSK	Kinexus	PK854	RpAb
WNK1	Pan	Q9H4A3	• PSTK	Kinexus	NK252-2	RpAb
WNK1	Pan	Q9H4A3	• PSTK	Kinexus	NK252-3	RpAb
WNK1	Pan	Q9H4A3	• PSTK	Kinexus	NK252-1	RpAb
WNK1	T60	Q9H4A3	• PSTK	Kinexus	PK856	RpAb
WNK1	S382+Pan	Q9H4A3	• PSTK	Kinexus	PK855	RpAb
WNK1	T2245	Q9H4A3	• PSTK	Kinexus	PK857	RpAb
WNK2	Pan	Q9Y3S1	• PSTK	Kinexus	NK253-2	RpAb
WNK2	Pan	Q9Y3S1	• PSTK	Kinexus	NK253-3	RpAb
WNK2	Pan	Q9Y3S1	• PSTK	Kinexus	NK253-1	RpAb
WNK3 (PRKWnk3)	Pan	Q9BYP7	• PSTK	Kinexus	NK254-2	RpAb
WNK3 (PRKWnk3)	Pan	Q9BYP7	• PSTK	Kinexus	NK254-3	RpAb
WNK3 (PRKWnk3)	Pan	Q9BYP7	• PSTK	Kinexus	NK254-1	RpAb
WNK4 (PRKWnk4)	Pan	Q96J92	• PSTK	Kinexus	NK255-3	RpAb
WNK4 (PRKWnk4)	Pan	Q96J92	• PSTK	Kinexus	NK255-1	RpAb
Yes	Pan	P07947	• PYK	No	sc-8403	MmAb
Yes	Pan	P07947	• PYK	No	sc-46674	MmAb
Yes	Pan	P07947	• PYK	No	sc-14	RpAb
Yes	Y222+Y223	P07947	• PYK	Kinexus	PK858	RpAb
YSK1 (STK25; SOK1)	Pan	O00506	• PSTK	No	sc-6865	GpAb
YSK1 (STK25; SOK1)	Pan	O00506	• PSTK	No	sc-6884	GpAb
YSK1 (STK25; SOK1)	T174	O00506	• PSTK	Kinexus	PK859	RpAb
YSK4 (MAP3K19)	Pan	Q56UN5	• PSTK	Kinexus	NK256-2	RpAb
YSK4 (MAP3K19)	Pan	Q56UN5	• PSTK	Kinexus	NK256-3	RpAb
YSK4 (MAP3K19)	Pan	Q56UN5	• PSTK	Kinexus	NK256-1	RpAb
ZAP70	Pan	P43403	• PYK	No	sc-1526	GpAb
ZAP70	Pan	P43403	• PYK	No	sc-574	RpAb
ZAP70	Y248	P43403	• PYK	Kinexus	PK860	RpAb
ZAP70	Y292	P43403	• PYK	Kinexus	PK861	RpAb
ZAP70	Y319	P43403	• PYK	Kinexus	PK862	RpAb
ZAP70	Y492+Y493	P43403	• PYK	Kinexus	PK863	RpAb
ZC2 (TNIK; GK)	Pan	Q9UKE5	• PSTK	Kinexus	NK301-1	RpAb