



PRODUCTS AND SERVICES

*Drug Discovery Tools
from Carna Biosciences*

~your kinase company~



Kinome Wide Coverage!

Mutants

- ABL [E255K]
- ABL [T315I]
- ALK [C1156Y]
- ALK [F1174L]
- ALK [F1174L/G1202R]
- ALK [G1202R]
- ALK [G1269A]
- ALK [I1171N]
- ALK [I1171N/L1198F]
- ALK [I1171S]
- ALK [L1196M]
- ALK [L1196M/G1202R]
- ALK [R1275Q]
- ALK [T1151_L1152insT]
- ALK2 [Q207D]
- ALK2 [R206H]
- BRAF [T599 V600insT]
- BRAF [V600E]
- BTK [C481S]
- BTK [T316A]
- BTK [T474I]
- BTK [T474S]
- EGFR [C797S]
- EGFR [C797S/L858R]
- EGFR [d746-750]
- EGFR [d746-750/C797S]
- EGFR [d746-750/T790M]
- EGFR [d746-750/T790M/C797S]
- EGFR [D770_N771 ins NPG]
- EGFR [L792H]
- EGFR [L858R]
- EGFR [L861Q]
- EGFR [T790M]
- EGFR [T790M/C797S/L858R]
- EGFR [T790M/L858R]
- EML4-ALK
- FGFR1 [V561M]
- FGFR2 [N549H]
- FGFR2 [V564I]
- FGFR3 [G697C]
- FGFR3 [K650E]
- FGFR3 [K650M]
- FGFR3 [V555L]
- FGFR3 [V555M]
- FGFR4 [N535K]
- FGFR4 [V550E]
- FGFR4 [V550L]

- JAK2 [JH1 JH2][V617F]
- KIT [D816E]
- KIT [D816V]
- KIT [D816V]
- KIT [T670I]
- KIT [T670I/D816V]
- KIT [V560G]
- KIT [V560G/D816V]
- KIT [V654A/D816V]
- LRRK2 [G2019S]
- MAP2K1 [F129L]
- MAP2K1 [P124L]
- MET [D1228H]
- MET [D1228N]
- MET [M1250T]
- MET [Y1230C]
- MET [Y1230H]
- MET [Y1235D]
- NPM1-ALK
- PDGFRa [D842V]
- PDGFRa [T674I]
- PDGFRa [V561D]
- RET [G691S]
- RET [G810C]
- RET [G810R]
- RET [M918T]
- RET [S891A]
- RET [Y791F]
- RET [V804M]
- LYNa, LYNb
- YES [YES1][T348I]

Atypical

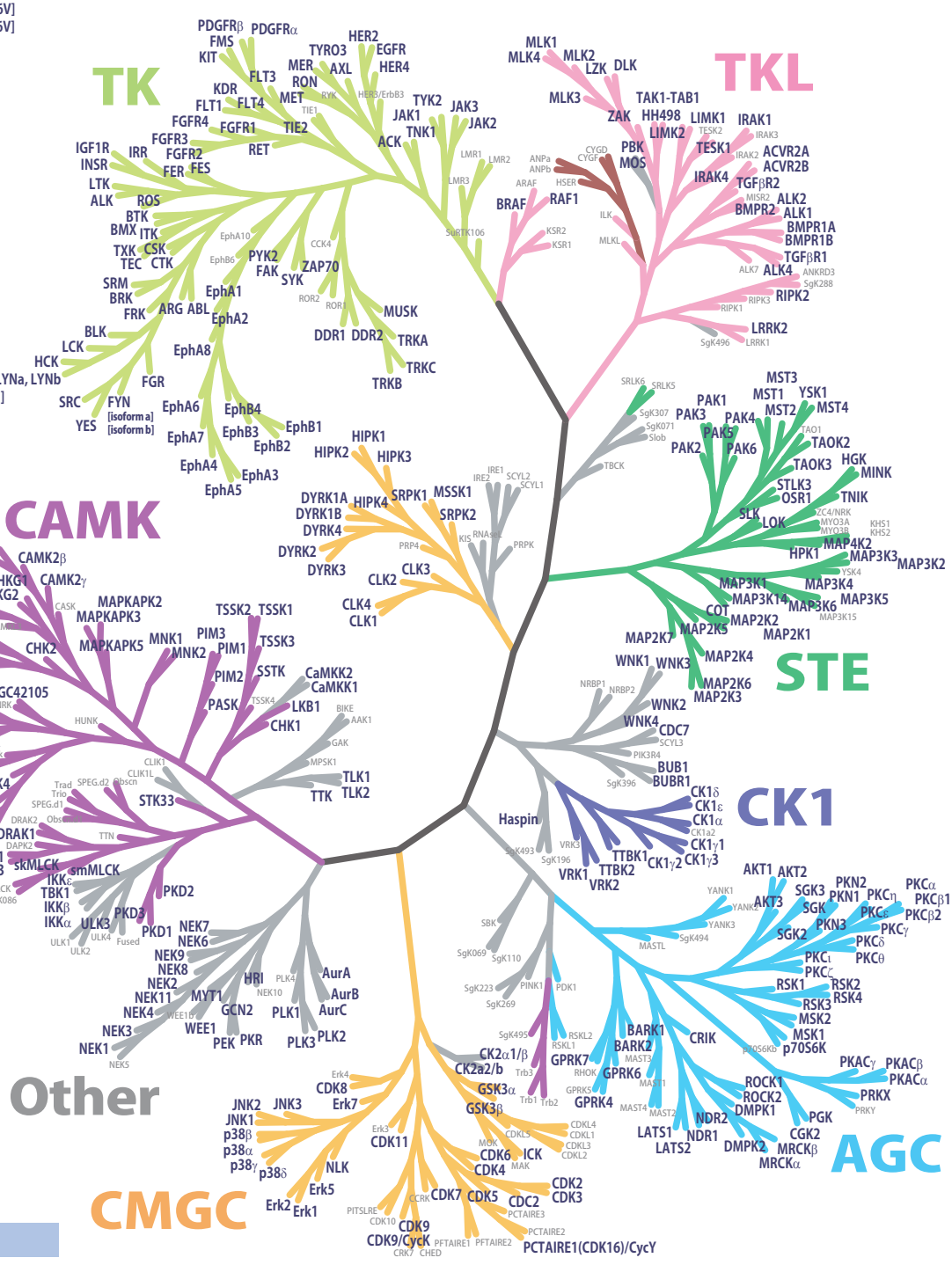
- CHAK1
- EEF2K
- PDHK1
- PDHK2
- PDHK3
- PDHK4

Inactive & Inactive-mutants

- Erk2
- Erk5
- IKK α (inactive mutant only)
- JNK1
- JNK2 (inactive only)
- MAP2K1
- MAP2K6
- MAP2K7
- p38a

Lipid Kinases

- MTOR(FRAP) / MLST8
- PI4KB
- PIK3C3
- PIK3CA / PIK3R1
- PIK3CA[E542K] / PIK3R1
- PIK3CA[E545K] / PIK3R1
- PIK3CA[H1047R] / PIK3R1
- PIK3CA[P539R] / PIK3R1
- PIK3CA[R88Q] / PIK3R1
- PIK3CB / PIK3R1
- PIK3CD / PIK3R1
- PIK3CG
- PIKFYVE(PIP5K3)
- PIP4K2A
- PIP4K2B
- PIP4K2C
- PIP5K1A
- PIP5K1B
- PIP5K1C
- PIP5KL1
- SPHK1
- SPHK2



CMGC

- Erk2
- Erk1
- CDK9/CycK
- CDK7
- CDK5
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High Quality Active Kinases

Carna offers an expanded portfolio of high purity, active human kinases and related products. All of our >450 kinases and products are developed and produced entirely in-house from gene cloning, expression and purification, and undergo rigorous quality control. All products are available in various sizes starting from 5µg up to bulk production, are delivered to you with a lot specific data sheet.

*Target lists: Please refer to the attachment.

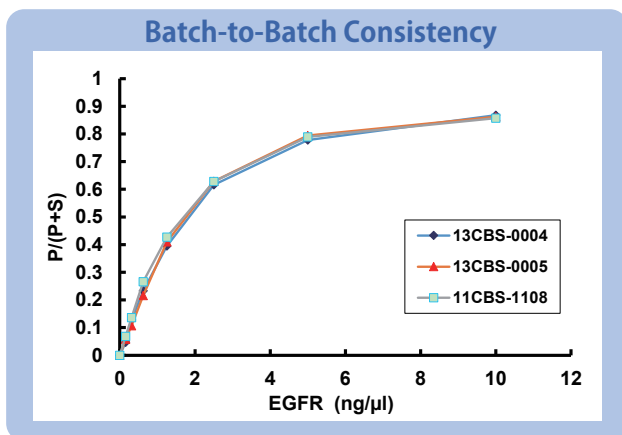
Industry Leading Production and Quality Control Methods

- Proprietary Production Methods ensure batch-to-batch consistency (Fig.1)
- Relevant kinase specific substrate(s) measure activity of each batch
- Target kinase activity maximized to minimize literature documented host cell activity
- Kinase constructs are carefully selected from published literature
- DNA sequence confirmed prior to protein expression
- Amino acid sequence confirmed by Peptide Mass Fingerprinting(PMF)

Unparalleled Kinase Activity

Production process yields highly active kinases.
Some kinases are activated further by :

- ◆ Expression with upstream kinase(s)
- ◆ Tag removal
- ◆ ATP treatment



[Fig.1]

Lipid Kinases and Related Products

Carna's lipid kinase panel includes numerous members of the PIK family. The enzymes enable complete and easy investigation of lipid kinase drug targets.

Protein Substrates

Our protein substrates are available for use in phosphorylation activity assays to assess kinase activity.

Custom protein production

We offer custom production services using our extensive expertise, for any kinase of interest.

For more information, please contact us at info@carnabio.com

CARNA BIOSCIENCES

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Chuo-ku, Kobe 650-0047 Japan
PHONE : +81-78-302-7091 FAX : +81-78-302-7088
e-mail : info@carnabio.com
URL : http://www.carnabio.com

Product Information

CDK5/p25
Product Number : 04-106

Product description
Full-length human CDK5 (1-292/end) amino acids of accession number NP_004926.1) was co-expressed as N-terminal GST-fusion protein (60 kDa) with p25 (99-307/end) amino acids of accession number NP_003876.1) using baculovirus expression system. GST-CDK5 was purified by using glutathione sepharose chromatography.

Storage buffer:
50 mM Tris-HCl, 150 mM NaCl, 0.05% Brij35,
1 mM DTT, 10% glycerol, pH7.5

Storage and Handling:
Store at -80C.
Avoid repeating freeze-thaws.

SDS-PAGE

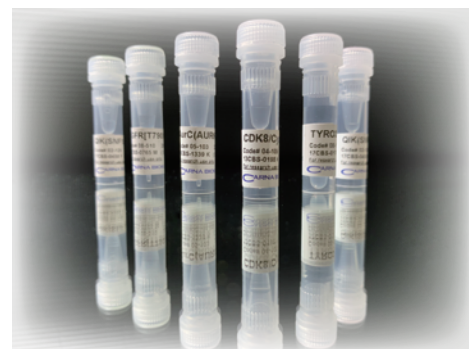
Purity: 99 %
The purity was assessed by SDS-PAGE/CBB staining.

Activity data

Concentration of protein (ng/µL)	P/(P+S)
0	0.0
0.01	0.4
0.02	0.7
0.03	0.85
0.05	0.9

The activity was measured by off-chip mobility shift assay. The enzyme was incubated with fluorescence-labeled substrate and Mg(or Mn)/ATP. The phosphorylated and unphosphorylated substrates were separated and detected by LabChip™3000.

Substrate : Modified Histone H1
ATP : 100 µM



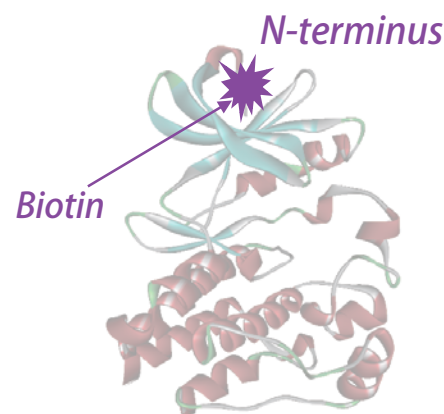
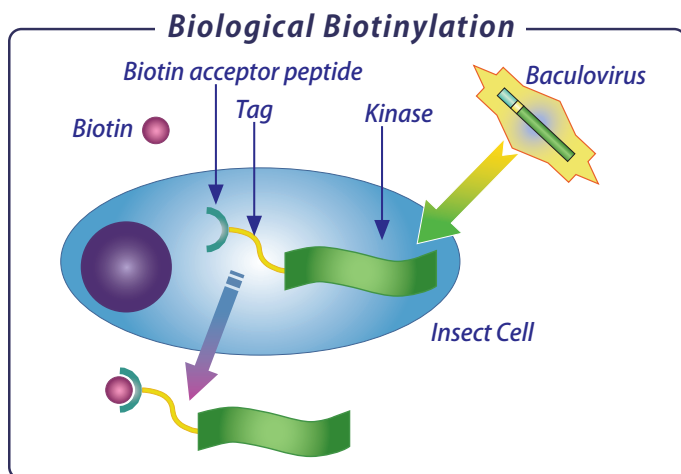
Biotinylated Kinases

Biotinylated Kinases are best suited for the study of compound binding affinity and other kinase-molecule interactions using devices measuring Surface Plasmon Resonance (SPR), BioLayer Interferometry (BLI) and other similar biomolecular interactions. They can also be utilized in homogenous proximity-based binding assays such as TR-FRET, AlphaScreen™ and HTRF® to interrogate inhibitor binding affinity, determine on-off rates, and measure binding kinetics. The immobilization of target proteins onto sensor surfaces without impairing their structure and activity can be challenging in small molecule drug discovery. Carna's in-house, single-site specifically biotinylated kinases are easily immobilized, leading to rapid acquisition of accurate and real-time data for evaluation of your drug candidates!

*Target lists: Please refer to the attachment.

Advantages of Carna's Biological Biotinylation Process

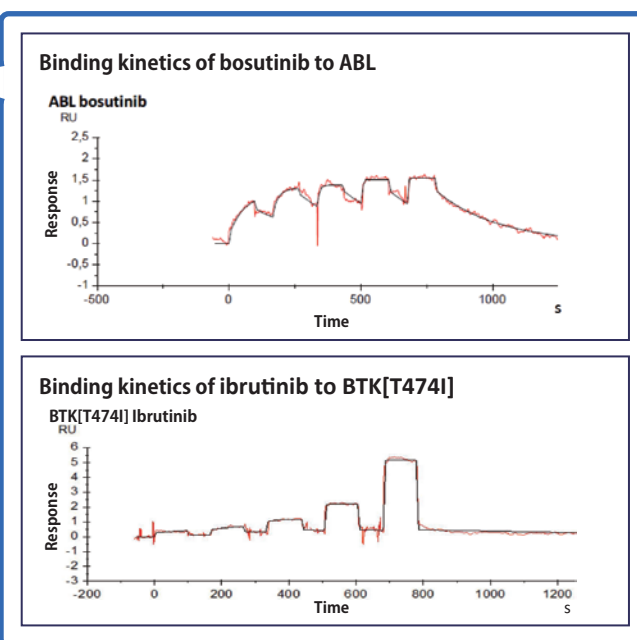
- Kinases are labeled with a single biotin at the N-terminus
- Easy-to-use ; no additional labeling required
- Native, catalytically active kinase domains are preserved
- High quality human kinases produced via Baculovirus expression system
- Stable activity determined post expression
- Select kinases available pre-activated (via ATP treatment) and non-activated (without ATP treatment)



SPR data samples* using Carna's biotinylated kinases are shown on our website

(*Measured using Biacore T200 in collaboration with Oncolines B.V)

Biotinylated Kinases					
Catalog No.	Product Name	Product Size			Biacore Sensorgram (Reference Data)
08-401-20N	BTN-ABL(ABL1)	10ug	100ug	Bulk	
01-401-20N	BTN-AKT1	10ug	100ug	Bulk	
01-402-20N	BTN-AKT2	10ug	100ug	Bulk	
08-405-20N	BTN-ALK	10ug	100ug	Bulk	
08-429-20N	BTN-ALK[L1196M]	10ug	100ug	Bulk	
05-401-20N	BTN-AurA (AURKA)	10ug	100ug	Bulk	
05-402-21N	BTN-AurB (AURKB)/INCENP*	10ug	100ug	Bulk	
08-407-20N	BTN-AXL	10ug	100ug	Bulk	
08-479-20N	BTN-BMX	10ug	100ug	Bulk	
09-422-20N	BTN-BRAF	10ug	100ug	Bulk	
08-480-20N	BTN-BTK *	10ug	100ug	Bulk	
08-417-20N	BTN-BTK[C481S] *	10ug	100ug	Bulk	
08-417-23N	BTN-BTK[C481S][non-activated]	10ug	100ug	Bulk	
08-480-23N	BTN-BTK[non-activated]	10ug	100ug	Bulk	TBA
08-418-20N	BTN-BTK[T316A] *	10ug	100ug	Bulk	
08-418-23N	BTN-BTK[T316A][non-activated]	10ug	100ug	Bulk	
08-419-20N	BTN-BTK[T474I] *	10ug	100ug	Bulk	
08-419-23N	BTN-BTK[T474I][non-activated]	10ug	100ug	Bulk	
08-420-20N	BTN-BTK[T474S] *	10ug	100ug	Bulk	



QuickScout Screening Assist™ Kits

QuickScout Screening Assist™ Kits are designed to accelerate your in house compound screening, particularly secondary and counter- screening applications. Our Kits provide essential reagents and detailed assay protocols in one package, and are available for more than 300 human kinase targets. After your initial kit purchase, components contained in the kit can be purchased separately and in bulk.

*Target lists: Please refer to the attachment.

Advantages of Carna's Assay Kits

- Prepared utilizing the extensive expertise of our kinase profiling team
- Ready-To-Run products & protocols save time and money
- Scalable for HTS applications

Designed for primary, in-house screening procedures applicable to Lead Generation through Lead Optimization!



Assay Platform	Minimum Kit Size	Kit Components
Mobility Shift Assay QSS Assist™ MSA This MSA kit works best using LabChip® technology from PerkinElmer, Inc.	400dp Equivalent to 1 x 384-well plate	<ul style="list-style-type: none"> ● Protein Kinase ● Substrate Mixture (ATP, Cation included) ● Assay Buffer ● Termination Buffer ● Assay Protocol (Separation conditions included)
FP(IMAP™) QSS Assist™ FP	400dp Equivalent to 1 x 384-well plate	<ul style="list-style-type: none"> ● Protein Kinase ● Substrate Mixture (ATP, Cation included) ● Assay Buffer ● Assay Protocol
TR-FRET QSS Assist™ TR-FRET	400dp Equivalent to 1 x 384-well plate	<ul style="list-style-type: none"> ● Protein Kinase ● Substrate Mixture (ATP, Cation included) ● Assay Buffer ● Assay Protocol
ELISA QSS Assist™ ELISA	100dp Equivalent to 1 x 96-well plate	<ul style="list-style-type: none"> ● Protein Kinase ● Substrate Mixture (ATP, Cation included) ● Assay Buffer ● Antibody for ELISA (except for TTK & WEE1) ● Assay Protocol
ADP-Glo™ QSS Assist™ ADP-Glo™	400dp Equivalent to 1 x 384-well plate	<ul style="list-style-type: none"> ● Protein Kinase ● Substrate Solution ● Kinase dilution Buffer (Cation included) ● Assay Buffer ● MgCl2 solution for detection reagent ● Assay Protocol

Sample protocols for all kit platforms are available online. Each kinase kit is made-to-order, with turnaround time of 2-3 weeks.

Biochemical Kinase Screening and Profiling Services

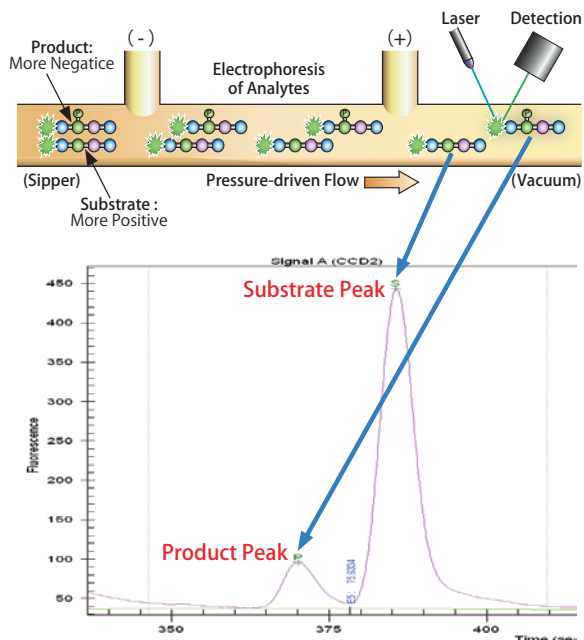
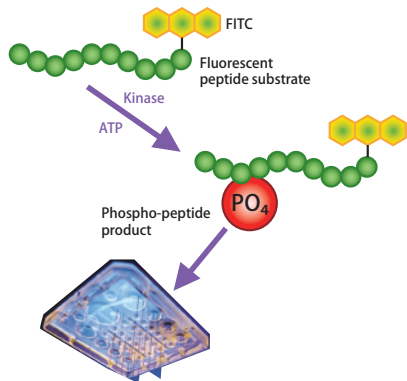
Carna offers >320 biochemical screening and profiling assays for assessing potency and selectivity of your compounds. Our three assay platforms allow us to interrogate a wide range of kinase targets using stringent SOPs. We offer testing at higher ATP concentration (1mM) to provide insight into compound inhibition and potency under more physiologically relevant conditions, in addition to our ~ATP km assay services.

*Target lists: Please refer to the attachment.

Three Assay Platforms

1. Mobility Shift Assay

Direct monitoring of phosphorylation by measuring non-phosphorylated and phosphorylated substrate.



2. IMAP™ (Immobilized Metal Ion-Affinity Partitioning) Assay

3. ADP-Glo™ Assay

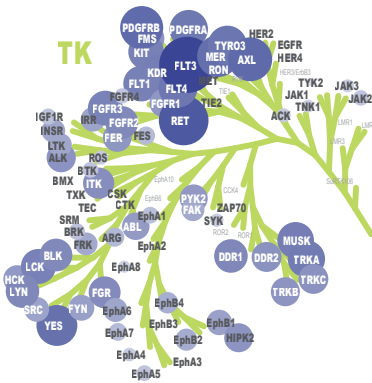
~ATP Km / 1mM ATP Assays

ATP concentration approximating Km are our routine kinase assays

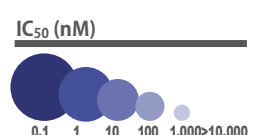
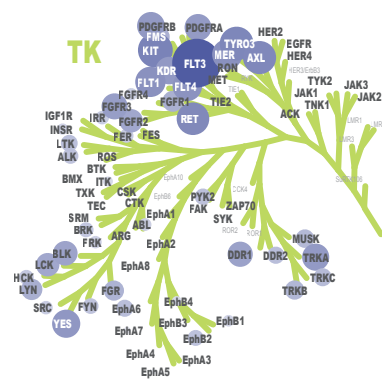
Many assays are also available at 1mM ATP

Assays approaching physiological ATP levels, provide insight to in vivo pharmacology.

Sunitinib vs. TKs at [ATP]=Km bin.

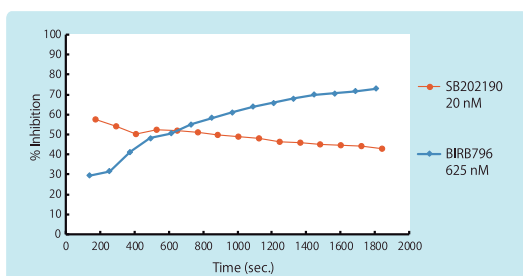


Sunitinib vs. TKs at [ATP]=1mM



Preincubation Kinase Profiling Service

Carna's preincubation service can be utilized to study slow binding compounds. This service incorporates a thirty (30) minute room temperature preincubation of target kinase with your test compound(s) prior to measuring activity in our standard Mobility Shift Assay.



Time course of p38α inhibitors (ATP=1 mM)

Structurally unrelated SB202190 and BIRB796 are potent inhibitors of p38α. BIRB796 interacts with p38α in a manner different from SB202190, and its binding induces a slow conformational change that locks the protein into an inactive conformation. The potency of BIRB796 increases with prolonged incubation, which is easily detected utilizing the pre-incubation service.

Biochemical Kinase Screening and Profiling Services

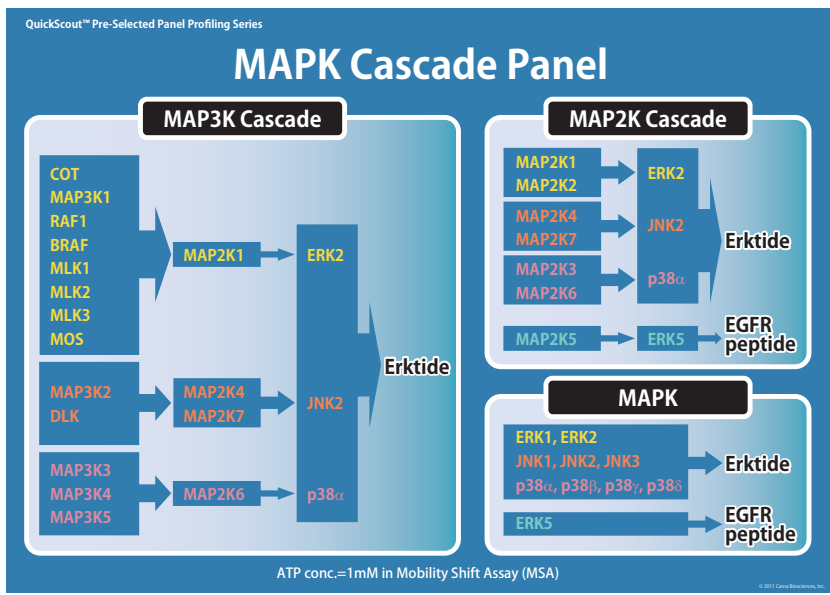
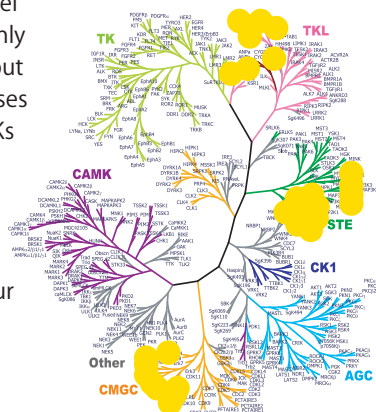
QuickScout™ Pre-selected Panel Profiling Options

Our selected panel series are well-suited for an initial profiling of your compounds.

*Target lists: Please refer to the attachment.

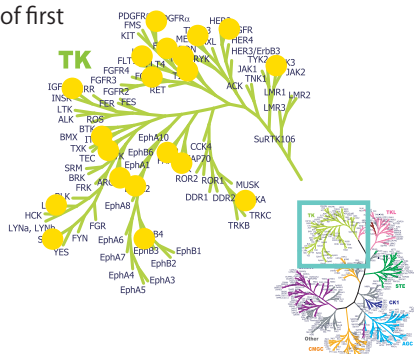
MAPK Cascade Panel ver. 2.0

The MAPK cascade plays an important role in the intracellular signal transduction of eukaryotic cells. Our MAPK panel includes not only MAP kinases, but upstream kinases such as MAPKKs and MAPKKKs. This panel is useful for analyzing the function of your compounds in the cascade.



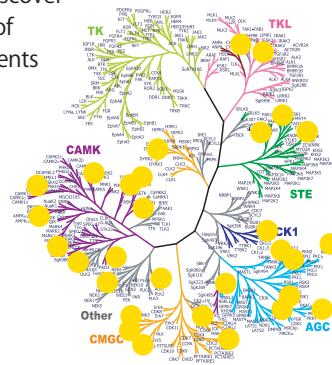
Tyrosine Kinase (TK) Panel ver. 2.0

QuickScout™ TK Panel consists of 20 Pre-Selected receptor and non-receptor Tyrosine Kinases, and helps you to rapidly screen your compounds against druggable and clinically relevant kinases. Identification and optimization of small molecule inhibitors against many of the targets in our 20 TK Panel have led to the development of first and second generation therapeutics for the treatment of diseases such as leukemia and cancers of the lung, breast, and kidney.



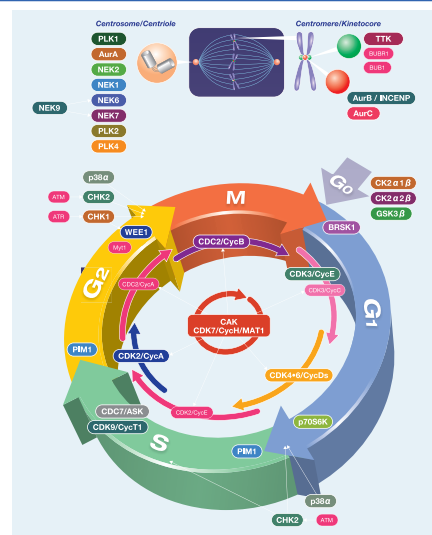
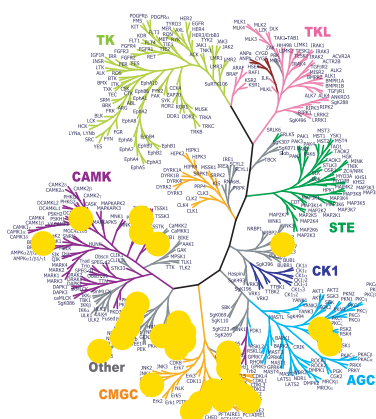
Serine/Threonine Kinase (STK) Panel ver. 3.0

QuickScout™ STK Panel consists of 30 Pre-Selected Serine / Threonine kinases that are key members of the AGC, CAMK, CMGC, STE, TKL, and Other Group of STK kinases. This Panel allows you to screen your lead compounds using the industry's most diverse Kinome Sampler and helps to discover and characterize the selectivity of compounds as potential treatments for cancer, inflammatory, metabolic and/or neurological diseases.



Cell Cycle Panel ver. 2.0

QuickScout™ Cell Cycle Panel is comprised of relevant kinases for cell-cycle regulation and is well-suited for determining whether your compound acts on cell division. This panel mainly includes kinases that are directly involved in the cell-cycle where their inhibition may interfere with cell proliferation.



NanoBRET™ TE Intracellular Kinase Cell-Based Assay

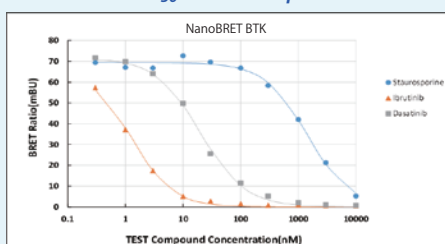
Quantifying kinase inhibitor occupancy, selectivity, and affinity within the cellular environment is crucial to more accurately predict engagement potencies against human kinases. In addition to equilibrium evaluation, kinetic parameters such as Residence Time should be determined for better compound optimization. Quantitative and wide-spectrum kinase profiling services using the NanoBRET™ Target Engagement Intracellular Kinase Assay System (Promega) enable you to assess your compound's engagement for a selected intracellular target under physiological conditions, including compound Residence Time at the target, while keeping the cells intact. Simply submit your compound(s) of interest, and Carna will rapidly deliver cellular IC₅₀ values and Residence Time!

*Target lists: Please refer to the attachment. For targets not listed, please inquire.

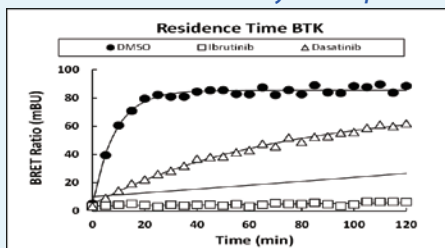


● Investigate Inhibitor Binding and Residence Time in Intact Cells Expressing Full-length Kinases

IC₅₀ Data Sample



Residence Time Analysis Sample



IC₅₀ Determinations & Residence Time Analysis

IC₅₀ determinations

(7 serial half-log dilutions, 8 conc. points)

Turnaround:
2 weeks upon receipt of compounds

Residence Time Analysis*

(performed in duplicate based on your IC₅₀ evaluation result)

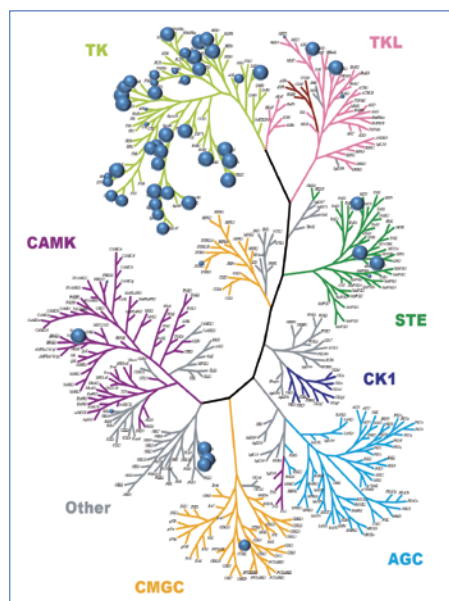
Turnaround: 3 weeks after dose setting
*Preliminary IC₅₀ determinations required for study dose setting.

Panel Services

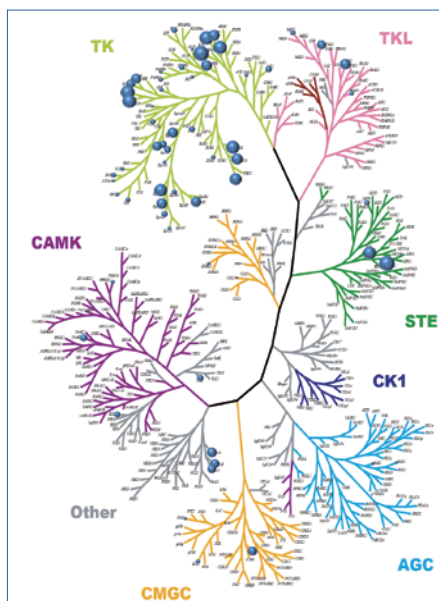
- ◆ CDK Panel Assay Service
- ◆ Kinome-Wide Profiling Service (192 Kinase Panel)

● Compare and Assess Selectivity and Potency at Cellular ATP Concentration

[Target occupancy using 1 μM Crizotinib]



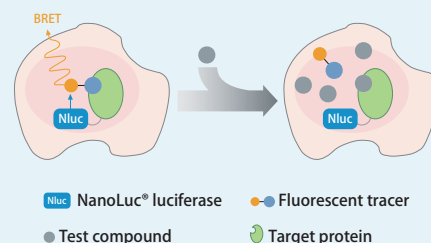
Carna Kinase Profiling service
ATP Km, Mobility Shift Assay



NanoBRET™ (HEK 293 cells)
Cell Chem Biol. 2018 Feb 15;25(2):206-214.e11

NanoBRET™ System

A cell-permeable fluorescent NanoBRET™ tracer, a BRET acceptor, is added to HEK293 cells expressing a full length kinase/NanoLuc® fusion protein. Engagement of the tracer to the target protein generates a BRET signal.



Binding of the test compound to the target protein results in a loss of NanoBRET™ signal between the target protein and the tracer inside intact cells.

NanoBRET™ TE Intracellular Kinase Cell-Based Assay

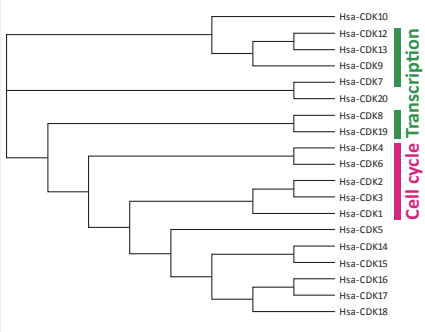
Two Panel Assay Services using NanoBRET™ TE Intracellular Kinase Assay technology are available to accelerate your investigations.

*Target lists: Please refer to the attachment. For targets not listed, please inquire.

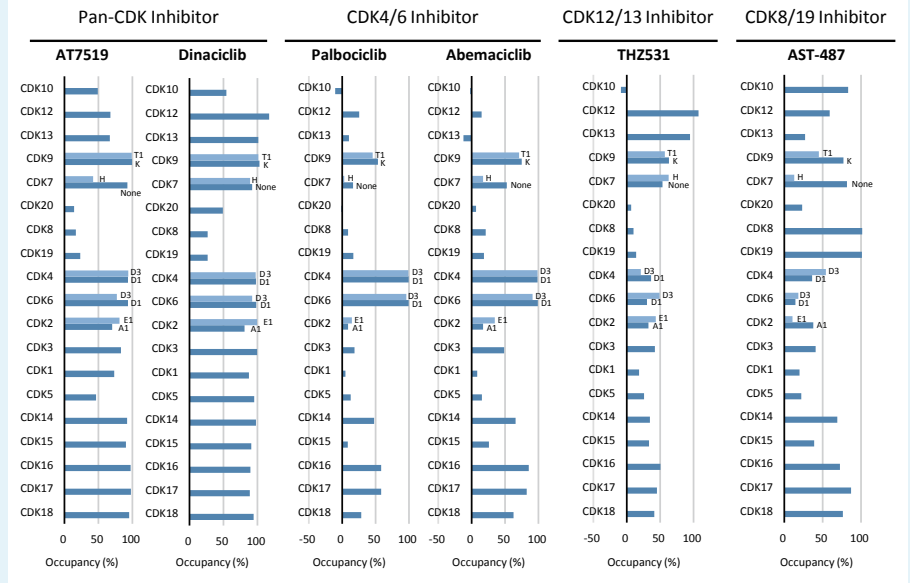
● CDK Panel Assay Service

Carna's NanoBRET™ Intracellular CDK Panel Assay consists of 23 CDK targets. It is an ideal tool to examine the specificity of your CDK inhibitor across an extensive set of CDK family kinases: in the presence of the cyclin subunit; in a cellular environment; and in a unified assay format. The compound's engagement with each CDK is quantitatively measured inside living HEK293 cells, which provides a snapshot of your compound's selectivity across all the CDK targets in the panel.

CDK Phylogenetic Tree



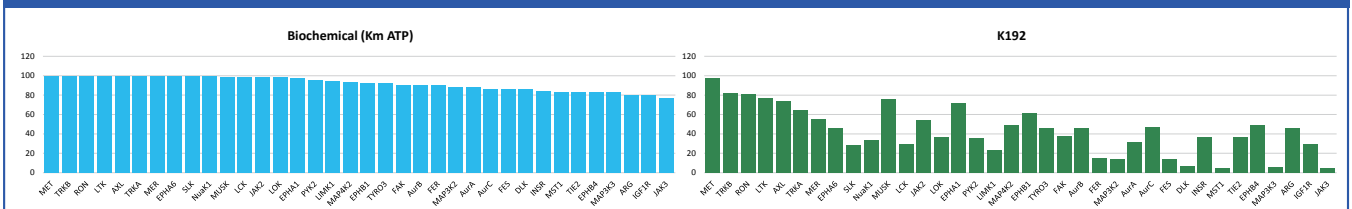
(Right) NanoBRET™ TE Intracellular CDK Panel Assay reveals each selectivity at 10 μM conc. of pan-CDK inhibitors (AT7519, dinaciclib), CDK4/6 inhibitors (palbociclib, abemaciclib), CDK12/13 inhibitor (THZ531), and CDK8/19 inhibitor (AST-487).



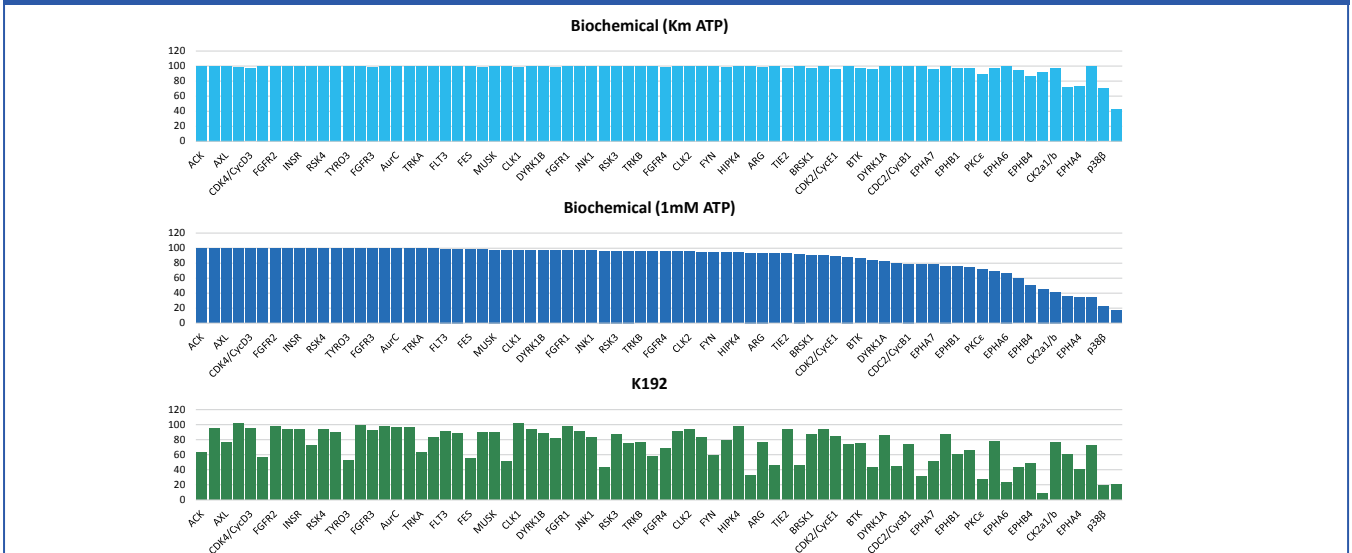
● Kinome-Wide Profiling Service (K192)

NanoBRET™ Target Engagement (TE) Intracellular Kinase Assay System (Promega) is used in this broad panel of 192 kinase targets (see list), each expressed intracellularly by transient transfection. Compound evaluation against all targets is performed simultaneously at 1 compound concentration in duplicate, under the same assay conditions. Follow up IC₅₀ determinations also available.

Comparison data using 1 μM Crizotinib in a biochemical assay (Mobility Shift Assay) and NanoBRET™ K192 cell assay panel (36 selected targets shown)



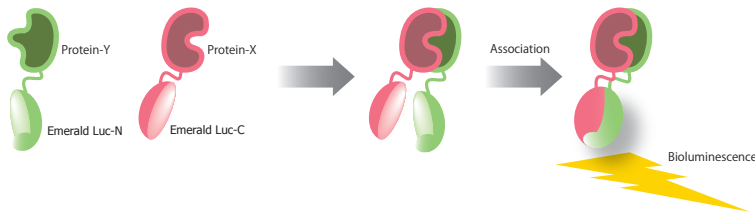
Comparison data using 0.3 μM CCI inhibitor in a biochemical assay (Mobility Shift Assay) and NanoBRET™ K192 cell assay panel



Detection of Protein-Protein Interactions ~ProbeX™~

Carna's split luciferase complementation assay, utilizing a unique luciferase derived from *Pyrearinus termitilluminans* (Emerald Luciferase, E-Luc), is a valuable tool for your study of Protein-Protein Interactions (PPIs). Detection of various types of PPIs, including GPCRs, is performed with ease and high-sensitivity. In addition to off-the-shelf cell lines, we develop stable transfected cell lines suitable for detecting specific PPIs of interest.

● Split Luciferase Technology



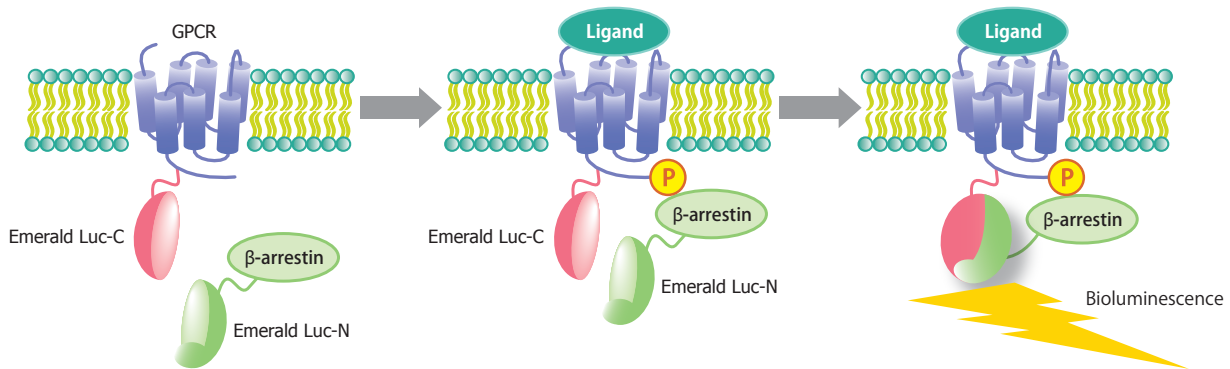
E-Luc is known to emit a brighter and more stable signal than conventional firefly luciferases. The N- and C-terminal domains of luciferase can be separated into two fragments, which can then re-associate in cells. When the two fragments of the reporter proteins are brought within proximity, they spontaneously refold and generate a detectable signal (patent filed).

● Application for GPCR

The N-terminal and C-terminal fragments of emerald split luciferase are fused to β -arrestin and GPCR, respectively. Binding of a ligand to the GPCR triggers phosphorylation of the GPCR, thereby inducing its interaction with β -arrestin. This interaction brings the N-terminal luciferase fragment into proximity with the C-terminal fragment, and bioluminescence activity is recovered.

Please view the list* showing our validated stable transfectants. We also develop custom cell lines suitable for your needs on a fee for service basis.

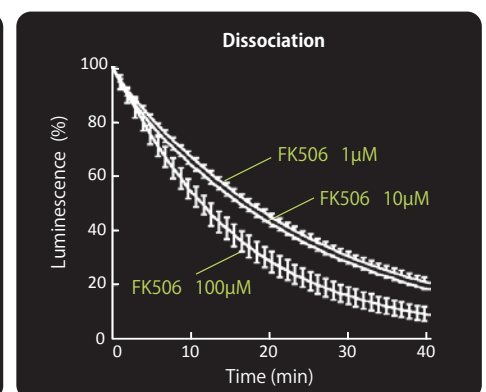
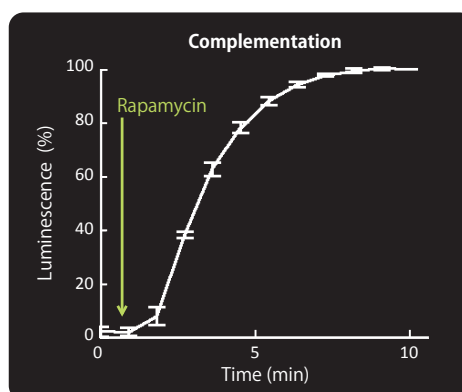
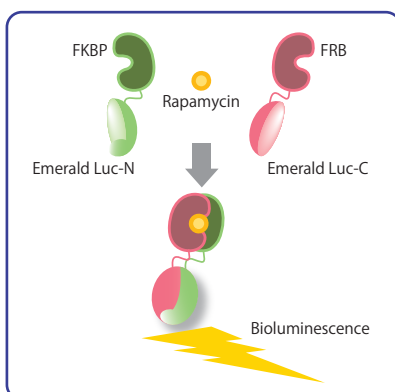
*Target lists: Please refer to the attachment.



GPCR Ligand Assay utilizing Split Luciferase Technology

● Example Application - FKBP-FRB Interaction

The immunosuppressant macrolide, rapamycin, mediates the interaction of two proteins: FKBP and FRB (left). Addition of rapamycin facilitates E-Luc complementation and a concomitant rapid increase in bioluminescence (middle). A competitive inhibitor of FK506 decoupled the rapamycin-induced signal (right), indicating the E-Luc complementation is reversible. This is in contrast to the split GFP system which is irreversible and not applicable to detect dissociation of two proteins.



Tyrosine Kinase Ba/F3 Cell-Based Assay Services

Carna offers kinase profiling services using a unique cell-based tyrosine kinase assay panel developed and performed by Advanced Cellular Dynamics (Seattle, WA, USA). This service provides tyrosine kinase profiling and screening using stable cell lines expressing an activated recombinant kinase to help you discover direct inhibitors to target tyrosine kinases. Assay services and /or Cell lines are available.

*Target lists: Please refer to the attachment.



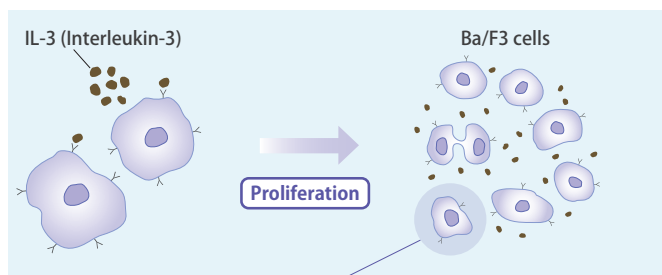
Two Options For Activity and Potency Assessment

1. IC₅₀ Determinations : ten (10) serial concentrations (9 half-log dilutions) tested in duplicate
2. % Inhibition Study : three (3) serial concentrations (2 full-log dilutions) tested in duplicate

Largest Commercially Available Tyrosine Kinase Cell-Based Panel — 94 Cell Lines

Select your targets from the 94 member tyrosine kinase panel. Percent inhibition or IC₅₀ determination studies will be performed using your compounds, and clinically-relevant kinase inhibitors.

Principle & Method of ACD Cell-Based Tyrosine Kinase Assays

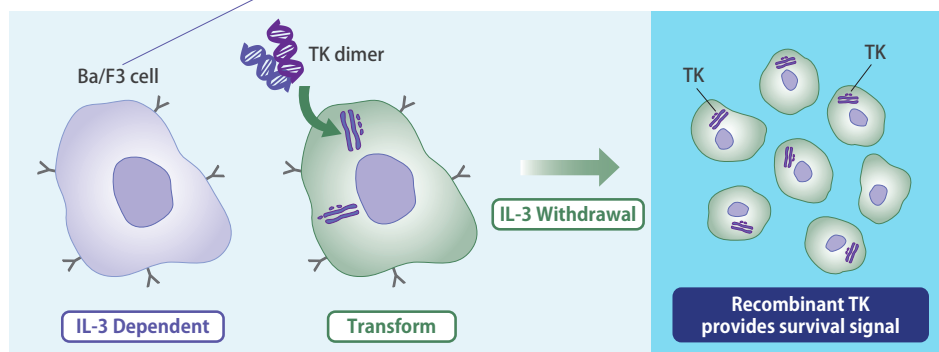


The assay principle builds upon the work of Daley & Baltimore (1988)* and Jonathan S. Melnick et al. (2005)**

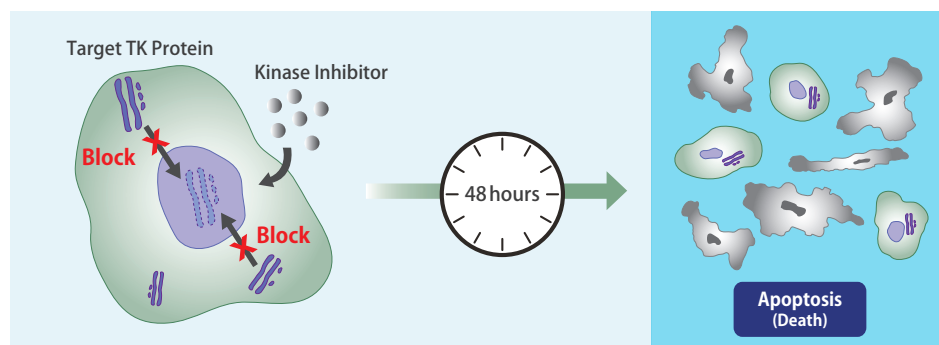
In this system, IL3-dependent Ba/F3 cells are modified to express an activated recombinant kinase. Following removal of IL3, the modified cells are dependent on the activity of the recombinant kinase for survival and proliferation.

* Daley & Baltimore; Proc. Natl. Acad. Sci. U.S.A. 1988; 85(23):9312-6

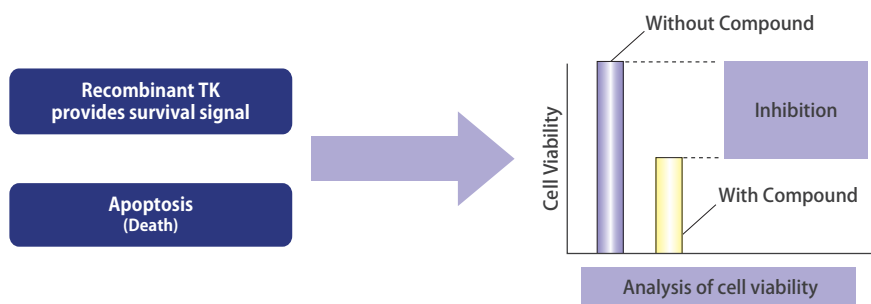
** Melnick et al., pnas.0511292103



Ba/F3 cells are transformed by target kinase dimerization via viral vectors. Activity of the transformed kinase overrides IL3 dependency for cellular proliferation and survival - modified cells no longer require IL3 for growth.



If the kinase inhibitor (compound) specifically blocks the activity of the recombinant kinase, the modified cells undergo programmed cell death (apoptosis).



Each assay is engineered to be dependent upon activity of the introduced kinase activity for survival. Inhibition of this activity by compound results in a directly proportional decrease in cell viability.

Products & Services by Kinase

Products & Services Kinases name	Products							Services							
	Kinase Proteins	Biotinylated Kinases	Kinase Protein Assay Kit					Cell-Free Assays				Cell-Based Assays			
								Mobility Shift Assay/IMAP™		ATP conc.		ADP-Glo™ (ATP=Km)	NanoBRET™ TE Intracellular Kinase Cell-Based Assay Services		
			MSA	FP (IMAP™)	ELISA	TR-FRET	ADP-Glo™	■: IMAP™ (FP)	Preincubation Study	Km	1mM		Assay Service	CDK Panel	K192 Panel
BTK [P190K]															
BTK [T4741]		○													○
BTK [T4741] [non-activated]		○													
BTK [T4745]		○													
BTK [T4745] [non-activated]		○													
BUB1/BUB3	○		○						○	○	○				
BUBR1(BUB1B)	○														
CaMK1α(CAMK1)	○		○						○		○	○		○	○
CaMK1β(PNCK)	○														
CaMK1γ(CAMK1G)															○
CaMK1δ(CAMK1D)	○		○						○		○			○	
CaMK2α(CAMK2A)	○		○	○					○	○	○			○	○
CaMK2β(CAMK2B)	○		○						○	○	○	○			
CaMK2γ(CAMK2G)	○		○						○	○	○	○		○	
CaMK2δ(CAMK2D)	○		○						○	○	○			○	○
CaMK4	○		○	○					○	○	○	○			
CAMKK1	○														
CAMKK2	○														
CDC2L6/CycC	○				○										
CDC7/ASK	○		○						○		○	○			
CDK1(CDC2)/CycA2	○	○							○		○	○			
CDK1(CDC2)/CycB1	○	○	○	○					○		○	○		○	○
CDK1(CDC2)/CycE1														○	
CDK2/CycA1														○	○
CDK2/CycA2	○	○	○	○					○	○	○	○			
CDK2/CycE1	○	○	○	○					○	○	○	○		○	○
CDK3/CycE1	○		○	○					○	○	○	○		○	○
CDK4/CycD1														○	○
CDK4/CycD3	○	○	○	○					○		○	○		○	○
CDK5														○	
CDK5/p25	○	○	○	○					○	○	○	○			
CDK5/CDK5R1														○	○
CDK5/CDK5R2														○	
CDK6/CycD1	○													○	○
CDK6/CycD3	○		○						○		○	○		○	○
CDK7														○	○
CDK7/CycH														○	○
CDK7/CycH/MAT1	○	○	○						○		○	○			
CDK8/CycC	○	○			○									○	○
CDK9/CycK	○	○												○	○
CDK9/CycT1	○	○	○						○		○	○		○	○
CDK9/CycT2	○	○												○	○
CDK10/Cycl2														○	○
CDK11A/CycK														○	
CDK11A/Cycl2														○	
CDK12(CRKRS)/CycK														○	○
CDK12(CRKRS)(720-1490aa)/CycK		○													
CDK13(CHEK)/CycK	○	○												○	○
CDK13(CHEK)(694-1512aa)/CycK		○													
CDK14/CycY														○	○
CDK15/CycY														○	○
CDK17/CycY														○	○
CDK18/CycY														○	○
CDK19/CycC														○	○
CDK20/CycH														○	○
CDKL1														○	○
CDKL2														○	○
CDKL3														○	○
CDKL5														○	○
CGK2(PRKG2)	○		○	○					○	○	○			○	
CHAK1(TRPM7)	○														
CHK1(CHEK1)	○	○	○	○					○	○	○	○		○	○
CHK2(CHEK2)	○		○	○					○	○	○	○		○	○
CK1α(CSNK1A1)	○		○						○		○	○			
CK1α1L(CSNK1A1L)														○	○
CK1γ1(CSNK1G1)	○		○						○	○	○				
CK1γ2(CSNK1G2)	○		○						○	○	○				○
CK1γ3(CSNK1G3)	○		○						○	○	○				
CK1δ(CSNK1D)	○		○	○					○	○	○	○		○	○
CK1ε(CSNK1E)	○		○						○		○	○		○	
CK2α1(CSNK2A1)														○	○
CK2α1/β(CSNK2A1/B)	○		○						○	○	○	○			
CK2α2(CSNK2A2)														○	○
CK2α2/β(CSNK2A2/B)	○		○						○	○	○				
CLK1	○		○	○					○	○	○	○		○	○
CLK2	○		○	○					○	○	○	○		○	○
CLK3	○		○						○	○	○				

Products & Services by Kinase

Products & Services	Products							Services								
	Kinase Proteins	Biotiny- lated Kinases	Kinase Protein Assay Kit					Cell-Free Assays				Cell-Based Assays				
			MSA	FP (IMAP™)	ELISA	TR-FRET	ADP-Glo™	Mobility Shift Assay/IMAP™		ADP-Glo™ (ATP=Km)	NanoBRET™ TE Intracellular Kinase Cell-Based Assay Services					
								■: IMAP™ (FP)	Preincubation Study		Km	1mM	Assay Service	CDK Panel	K192 Panel	
Kinases name																
CLK4	○													○		○
Cofilin2	○															
COQ8B														○		
COT(MAP3K8)	○				○			○			○					
CRIK(CIT)	○		○	○				○		○	○					
CSK	○		○				○	○		○	○			○		
DAPK1	○		○	○				○	○	○	○					
DAPK2														○		○
DAPK3	○	○														
DCAMKL1(DCLK1)	○													○		
DCAMKL2	○		○					○		○						
DCLK3														○		○
DDR1	○	○	○					○		○	○			○		
DDR1(SRC treated)	○	○														
DDR2	○	○	○					○		○	○			○		
DDR2 [N456S]														○		
DLK(MAP3K12)	○	○			○			○			○			○		○
DMPK1(DMPK)	○													○		
DMPK2(CDC42BPG)	○															
DRAK1(STK17A)	○															
DRAK2(STK17B)														○		○
DYRK1A	○		○					○	○	○	○			○		○
DYRK1B	○		○					○	○	○	○			○		○
DYRK2	○		○					○	○	○	○			○		
DYRK3	○		○					○	○	○	○					
DYRK4	○		○													
EEF2K	○		○					○		○						
EGFR(ERBB1)	○	○	○					○	○	○	○					
EGFR [C797S]	○	○														
EGFR [C797S/L858R]	○	○						○		○	○					
EGFR [d746-750/C797S]	○	○						○	○	○	○					
EGFR [d746-750/T790M]	○		○					○	○	○	○					
EGFR [d746-750]	○	○	○					○	○	○	○					
EGFR [d746-750/T790M/C797S]	○							○		○	○					
EGFR [D770_N771insNPG]	○		○					○		○	○					
EGFR [D770_N771insNPG/T790M]	○															
EGFR [L792H]	○															
EGFR [L858R]	○	○	○					○	○	○	○					
EGFR [L861Q]	○		○					○	○	○	○					
EGFR [T790M/L858R]	○	○	○					○	○	○	○					
EGFR [T790M]	○	○	○					○	○	○	○					
EGFR [T790M/C797S/L858R]	○							○		○	○					
EIF2S1	○															
EIF4EBP1	○															
EML4-ALK	○		○					○		○	○					
EPHA1	○		○					○	○	○	○			○		○
EPHA2	○	○	○				○	○	○	○	○			○		
EPHA2 [non-activated]		○														
EPHA3	○		○					○	○	○	○			○		
EPHA4	○		○					○	○	○	○			○		○
EPHA5	○		○					○	○	○	○			○		
EPHA6	○		○					○	○	○	○			○		○
EPHA7	○		○					○	○	○	○			○		○
EPHA8	○		○					○	○	○	○			○		
EPHB1	○		○					○	○	○	○			○		○
EPHB2	○		○					○	○	○	○			○		
EPHB3	○		○					○	○	○	○			○		
EPHB4	○		○					○	○	○	○			○		○
ERN1														○		○
ERN2														○		○
Erk1(MAPK3)	○		○	○				○	○	○	○			○		
Erk2(MAPK1)	○		○	○				○	○	○	○			○		
Erk2(MAPK1) [inactive mutant]	○															
Erk2(MAPK1) [inactive]	○															
Erk3(MAPK6)														○		○
Erk4(MAPK4)														○		○
Erk5(MAPK7)	○				○			○		○	○					
Erk5(MAPK7) [inactive mutant]	○															
Erk5(MAPK7) [inactive]	○															
Erk7(MAPK15)	○															
FAK(PTK2)	○	○	○					○		○	○			○		○
FER	○		○					○	○	○	○			○		○
FES	○		○					○	○	○	○			○		○
FGFR1	○	○	○					○	○	○	○			○		○
FGFR1 [non-activated]		○														
FGFR1 [V561M]	○		○					○		○	○					
FGFR2	○		○					○	○	○	○			○		○

Products & Services by Kinase

Products & Services	Products							Services								
	Kinase Proteins	Biotinylated Kinases	Kinase Protein Assay Kit					Cell-Free Assays				Cell-Based Assays				
			MSA	FP (IMAP™)	ELISA	TR-FRET	ADP-Glo™	Mobility Shift Assay/IMAP™		ADP-Glo™ (ATP=Km)	NanoBRET™ TE Intracellular Kinase Cell-Based Assay Services					
								■: IMAP™ (FP)	Preincubation Study		Km	1mM	Assay Service	CDK Panel	K192 Panel	
Kinases name																
FGFR2 [K659M]														○		
FGFR2 [L617F]														○		
FGFR2 [L617V]														○		
FGFR2 [M537I]														○		
FGFR2 [N549H]	○		○											○		
FGFR2 [N549K]														○		
FGFR2 [V564F]														○		
FGFR2 [V564I]	○		○					○	○	○	○					
FGFR3	○	○	○					○		○	○			○		○
FGFR3 [G697C]	○		○											○		
FGFR3 [K650E]	○		○					○		○	○					
FGFR3 [K650M]	○		○					○		○	○					
FGFR3 [V555L]	○		○					○		○	○					
FGFR3 [V555M]	○		○					○		○	○			○		
FGFR4	○	○	○					○	○	○	○			○		○
FGFR4 [N535K]	○		○					○		○	○					
FGFR4 [V550E]	○		○					○		○	○					
FGFR4 [V550L]	○		○					○	○	○	○					
FGR	○		○					○	○	○	○			○		
FLT1(VEGFR1)	○		○					○	○	○	○			○		
FLT3	○	○	○					○		○	○			○		○
FLT3 [non-activated]		○														
FLT3 [D835H]														○		
FLT3 [D835V]														○		
FLT3 [D835Y]														○		
FLT3 [K663Q]														○		
FLT3 [N841I]														○		
FLT3 [R834Q]														○		
FLT4(VEGFR3)	○		○					○	○	○	○					
FMS(CSF1R)	○	○	○					○		○	○			○		
FRK	○		○					○	○	○	○			○		
FYN [isoform a]	○	○	○					○		○	○			○		○
FYN [isoform a][Y531F]														○		
FYN [isoform b]	○		○					○		○	○			○		
GAK														○		○
GCN2(EIF2AK4)	○	○														
GCN2(EIF2AK4) domain 2														○		
GLK(MAP4K3)														○		○
GPRK4(GRK4)	○															
GPRK6(GRK6)	○															
GPRK7(GRK7)	○															
GSK3α(GSK3A)	○		○					○	○	○	○			○		
GSK3β(GSK3B)	○	○	○		○			○	○	○	○			○		
Haspin(GSG2)	○		○					○	○	○	○					
HCK	○		○					○		○	○			○		
HER2(ERBB2)	○		○					○		○	○					
HER4(ERBB4)	○		○					○	○	○	○					
HGK(MAP4K4)	○		○	○				○		○	○					
HH498(TNNI3K)	○													○		○
HIPK1	○		○					○	○	○	○					
HIPK2	○		○					○	○	○	○			○		○
HIPK3	○		○					○	○	○	○			○		○
HIPK4	○		○					○	○	○	○			○		○
HPK1(MAP4K1)	○		○					○		○	○			○		○
HRI(EIF2AK1)	○															
ICK	○													○		○
IGF1R	○	○	○					○	○	○	○			○		○
IKKα(CHUK)	○	○		○				■		○	○					
IKKα(CHUK) [inactive mutant]		○														
IKKβ(IKBKB)	○	○	○					○	○	○	○					
IKKε(IKBKE)	○		○	○				○	○	○	○			○		○
INSR	○	○	○					○	○	○	○			○		○
INSR [non-activated]		○														
IRAK1	○			○				■		○	○			○		
IRAK3														○		○
IRAK4	○	○	○	○				○		○	○			○		○
IRR(INSRR)	○		○					○		○	○					
ITK	○	○	○					○	○	○	○			○		○
JAK1														○		
JAK1(JH1)	○	○	○					○		○	○			○		
JAK2														○		
JAK2 [V617F]														○		○
JAK2(JH1)	○	○	○					○	○	○	○			○		
JAK2(JH1JH2)	○		○													
JAK2(JH1JH2) [V617F]	○		○													
JAK3														○		
JAK3(JH1)	○		○					○	○	○	○					○

Products & Services by Kinase

Products & Services	Products							Services							
	Kinase Proteins	Biotinylated Kinases	Kinase Protein Assay Kit					Cell-Free Assays				Cell-Based Assays			
			MSA	FP (IMAP™)	ELISA	TR-FRET	ADP-Glo™	Mobility Shift Assay/IMAP™		ADP-Glo™ (ATP=Km)	NanoBRET™ TE Intracellular Kinase Cell-Based Assay Services				
								■: IMAP™ (FP)	Preincubation Study		Km	1mM	Assay Service	CDK Panel	K192 Panel
Kinases name															
JNK1(MAPK8)	○						○	○	○	○		○			○
JNK1(MAPK8) [inactive mutant]	○														
JNK1(MAPK8) [inactive]	○														
JNK2(MAPK9)	○						○	○	○	○		○			○
JNK2(MAPK9) [inactive]	○														
JNK3(MAPK10)	○						○	○	○	○		○			○
KDR(VEGFR2)	○	○	○				○	○	○	○					
KHS1(MAP4K5)												○			○
KIT	○	○	○				○		○	○		○			
KIT [A829P]												○			
KIT [D816E]	○		○				○		○	○					
KIT [D816H]												○			
KIT [D816V]	○		○				○		○	○		○			
KIT [D816Y]	○		○				○		○	○					
KIT [L576P]												○			
KIT [T670I/D816V]	○						○		○	○					
KIT [T670I]	○		○				○		○	○					
KIT [V559D,T670I]												○			
KIT [V559D,V654A]												○			
KIT [V559D]												○			
KIT [V560G/D816V]	○		○												
KIT [V560G]	○		○				○		○	○					
KIT [V654A/D816V]	○														
KIT [V654A]			○				○		○	○					
KIT [non-activated]		○													
LATS1	○											○			○
LATS2	○		○				○		○	○		○			○
LCK	○	○	○				○	○	○	○		○			○
LIMK1	○											○			○
LIMK2	○											○			○
LKB1(STK11)												○			○
LKB1(STK11)/MO25a/STRADα	○														
LOK(STK10)	○		○				○		○			○			○
LRRK2	○											○			○
LRRK2 [G2019S]	○											○			○
LRRK2 [I2020T]												○			○
LRRK2 [R1441C]												○			○
LTK	○		○				○		○	○		○			○
LYNa	○	○	○				○	○	○	○		○			
LYNb	○		○				○	○	○	○		○			
LZK(MAP3K13)	○				○							○			
MAP2K1	○				○		○			○					
MAP2K1 [F129L]	○														
MAP2K1 [inactive mutant]	○														
MAP2K1 [inactive]	○	○													
MAP2K1 [P124L]	○														
MAP2K2	○				○		○			○					
MAP2K3	○				○		○			○					
MAP2K4	○				○		○			○					
MAP2K5	○				○		○			○		○			
MAP2K6	○				○		○			○		○			
MAP2K6 [inactive mutant]	○														
MAP2K6 [inactive]	○														
MAP2K7	○				○		○			○					
MAP2K7 [inactive mutant]	○														
MAP2K7 [inactive]	○														
MAP3K1	○				○		○			○					
MAP3K14	○														
MAP3K2	○				○		○			○		○			○
MAP3K3	○				○		○			○		○			○
MAP3K4	○				○		○			○		○			○
MAP3K5	○	○					○			○					
MAP3K6	○														
MAP4K2	○		○				○		○	○		○			○
MAPKAPK2	○		○	○			○	○	○	○					
MAPKAPK3	○		○	○			○	○	○	○					
MAPKAPK5	○		○	○			○	○	○	○					
MARK1	○		○				○	○	○	○					
MARK2	○		○				○	○	○	○		○			○
MARK3	○		○				○	○	○	○		○			○
MARK4	○		○				○	○	○	○		○			○
MAST3												○			○
MAST4												○			○
MELK	○		○	○			○		○	○		○			○
MELK [T460M]												○			○
MER(MERTK)	○	○	○				○	○	○	○		○			○
MER(MERTK) [A708S]												○			

Products & Services by Kinase

Products & Services Kinases name	Products							Services						
	Kinase Proteins	Biotinylated Kinases	Kinase Protein Assay Kit					Cell-Free Assays				Cell-Based Assays		
								Mobility Shift Assay/IMAP™		ATP conc.				
			MSA	FP (IMAP™)	ELISA	TR-FRET	ADP-Glo™	■: IMAP™ (FP)	Preincubation Study	Km	1mM	Assay Service	CDK Panel	K192 Panel
MET	○	○	○				○	○	○	○		○		○
MET [D1228H]	○	○	○				○	○	○	○		○		○
MET [D1228N]	○	○										○		
MET [F1200I]												○		
MET [M1250T]	○	○	○				○	○	○	○		○		○
MET [P991S]												○		○
MET [T1173I]												○		○
MET [T992I]												○		○
MET [V1092I]												○		○
MET [Y1230A]												○		○
MET [Y1230C]		○										○		○
MET [Y1230D]												○		○
MET [Y1230H]	○	○										○		○
MET [Y1235D]	○	○	○				○	○	○	○		○		○
MINK(MINK1)	○		○				○		○	○		○		○
MLK1(MAP3K9)	○	○			○		○		○	○		○		○
MLK2(MAP3K10)	○	○			○		○		○	○		○		○
MLK3(MAP3K11)	○	○			○		○		○	○		○		○
MLK4	○											○		○
MNK1(MKNK1)	○	○	○	○			○	○	○	○		○		○
MNK2(MKNK2)	○		○	○			○	○	○	○		○		○
MOK												○		○
MOS	○				○		○		○	○				
MRCKα(CDC42BPA)	○		○	○			○		○	○				
MRCKβ(CDC42BPB)	○		○				○		○	○				
MSK1(RPS6KA5)	○		○	○			○	○	○	○				
MSK2(RPS6KA4)	○		○	○			○		○	○		○		○
MSSK1(STK23)	○		○				○		○	○				
MST1(STK4)	○		○				○		○	○		○		○
MST2(STK3)	○		○				○		○	○		○		○
MST3(STK24)	○		○				○		○	○		○		○
MST4	○		○	○			○		○	○		○		○
MTOR(FRAP)/MLST8	○													
MUSK	○		○				○		○	○		○		○
MYLK3												○		○
MYLK4	○	○										○		○
MYT1(PKMYT1)	○											○		○
NDR1(STK38)	○		○				○		○	○		○		○
NDR2(STK38L)	○		○				○		○	○		○		○
NEK1	○		○				○		○	○		○		○
NEK11	○											○		○
NEK2	○		○				○	○	○	○		○		○
NEK3	○											○		○
NEK4	○		○				○	○	○	○		○		○
NEK5												○		○
NEK6	○		○				○		○	○		○		○
NEK7	○		○				○		○	○		○		○
NEK9	○	○	○				○		○	○		○		○
NIM1K(MGC42105)	○		○	○			○	○	○	○		○		○
NLK	○											○		○
NPM1-ALK	○		○				○	○	○	○				
NRK(NESK)												○		○
NuaK1(ARK5)	○		○	○			○	○	○	○		○		○
NuaK2	○		○				○	○	○	○		○		○
OSR1(OXSRI)	○													
p38α(MAPK14)	○	○	○	○			○	○	○	○		○		○
p38α(MAPK14) [inactive mutant]	○													
p38α(MAPK14) [inactive]	○	○												
p38α(MAPK14) [T106M]												○		○
p38β(MAPK11)	○		○	○			○	○	○	○		○		○
p38γ(MAPK12)	○		○	○			○	○	○	○				
p38δ(MAPK13)	○		○	○			○	○	○	○				
p70S6K(RPS6KB1)	○		○	○			○	○	○	○				
p70S6Kβ(RPS6KB2)	○		○	○			○	○	○	○				
PAK1	○		○				○	○	○	○				
PAK2	○		○				○	○	○	○				
PAK3	○		○				○	○	○	○				
PAK4	○	○	○				○		○	○		○		○
PAK5(PAK7)	○		○				○	○	○	○		○		○
PAK6	○		○				○		○	○		○		○
PASK	○		○	○			○		○	○				
PBK	○		○	○			○		○	○				
PCTAIRE1(CDK16)/CycY	○											○	○	○
PDGFRα(PDGFR)	○		○				○	○	○	○				
PDGFRα(PDGFR) [non-activated]		○												
PDGFRα(PDGFR) [D842V]	○		○				○	○	○	○				
PDGFRα(PDGFR) [T674I]	○		○				○		○	○				

Products & Services by Kinase

Products & Services	Products							Services							
	Kinase Proteins	Biotinylated Kinases	Kinase Protein Assay Kit					Cell-Free Assays				Cell-Based Assays			
								Mobility Shift Assay/IMAP™		ADP-Glo™ (ATP=Km)		NanoBRET™ TE Intracellular Kinase Cell-Based Assay Services			
			MSA	FP (IMAP™)	ELISA	TR-FRET	ADP-Glo™	■: IMAP™ (FP)	Preincubation Study	Km	1mM				Assay Service
PDGFRα(PDGFRα) [V561D]	○		○					○	○	○	○		○		
PDGFRβ(PDGFRβ)	○	○	○					○	○	○	○				
PDGFRβ(PDGFRβ) [non-activated]		○													
PDHK1(PDK1)	○														
PDHK2(PDK2)	○		○					○		○					
PDHK3(PDK3)	○														
PDHK4(PDK4)	○		○					○		○					
PDK1(PDK1)	○							○		○	○				
PEK(EIF2AK3)	○			○				■		○					
PGK(PRKG1)	○		○	○				○		○					
PHKG1	○		○	○				○		○			○		○
PHKG2	○		○					○		○			○		○
PI4KB	○														
PIK3C3	○														
PIK3CA/PIK3R1	○	○					○					○	○		
PIK3CA [P539R]/PIK3R1		○													
PIK3CA [R88Q]/PIK3R1		○													
PIK3CA [C420R]/PIK3R1														○	
PIK3CA [E542K]/PIK3R1		○												○	
PIK3CA [E545A]/PIK3R1														○	
PIK3CA [E545K]/PIK3R1		○												○	
PIK3CA [H1047L]/PIK3R1														○	
PIK3CA [H1047R]/PIK3R1		○												○	
PIK3CA [H1047Y]/PIK3R1														○	
PIK3CA [I800L]/PIK3R1														○	
PIK3CA [M1043I]/PIK3R1														○	
PIK3CA [Q546K]/PIK3R1														○	
PIK3CB/PIK3R1	○	○					○					○	○		
PIK3CD/PIK3R1	○	○					○					○	○		
PIK3CG		○													
PIKFYVE(PIP5K3)	○						○					○	○		
PIM1	○		○	○				○	○	○	○				
PIM2	○		○	○				○		○	○				
PIM3	○		○					○		○	○		○		
PIP4K2A	○						○					○			
PIP4K2B	○						○					○			
PIP4K2C	○												○		
PIP5K1A	○						○					○			
PIP5K1B	○						○					○	○		
PIP5K1C	○						○					○			
PIP5K1L	○						○					○			
PKAα(PRKACA)	○	○	○	○				○		○	○		○		○
PKAβ(PRKACB)	○		○					○		○			○		○
PKAγ(PRKACG)	○		○					○		○					
PKCα(PRKCA)	○	○	○	○				○		○	○		○		
PKCβ1(PRKCB1)	○		○	○				○		○			○		
PKCβ2(PRKCB2)	○		○					○		○					
PKCγ(PRKCG)	○	○	○					○		○	○		○		
PKCδ(PRKCD)	○		○	○				○	○	○			○		
PKCε(PRKCE)	○		○	○				○	○	○	○		○		○
PKCζ(PRK CZ)	○		○	○				○	○	○					
PKCη(PRKCH)	○	○	○	○				○	○	○			○		
PKCθ(PRK CQ)	○		○	○				○		○			○		
PKCι(PRKCI)	○		○	○				○		○					
PKD1(PRKD1)	○		○	○				○	○	○					
PKD2(PRKD2)	○		○	○				○	○	○	○				
PKD3(PRKD3)	○		○	○				○		○					
PKN1	○	○						■		○					
PKN2	○														
PKN3	○														
PKR(EIF2AK2)	○			○				■		○					
PLK1	○	○	○	○				○		○	○				
PLK2	○			○				■		○					
PLK3	○		○	○				○		○	○		○		○
PLK4													○		○
PRKX	○		○	○				○		○			○		○
PYK2(PTK2B)	○	○	○	○				○	○	○	○		○		○
QIK(SNF1LK2)	○		○					○	○	○	○		○		○
RAF1(CRAF)	○	○			○			○		○			○		
RET	○	○	○					○	○	○	○		○		○
RET [G691S]	○	○	○					○	○	○	○				
RET [G691S] [non-activated]		○													
RET [G810C]	○														
RET [G810R]	○														
RET [M918T]	○	○	○					○	○	○	○		○		
RET [M918T] [non-activated]		○													
RET [S891A]	○	○	○					○	○	○	○				

Products & Services by Kinase

Products & Services Kinases name	Products							Services						
	Kinase Proteins	Biotinylated Kinases	Kinase Protein Assay Kit					Cell-Free Assays				Cell-Based Assays		
								Mobility Shift Assay/IMAP™		ADP-Glo™ (ATP=Km)		NanoBRET™ TE Intracellular Kinase Cell-Based Assay Services		
			MSA	FP (IMAP™)	ELISA	TR-FRET	ADP-Glo™	■: IMAP™ (FP)	Preincubation Study	Km	1mM	Assay Service	CDK Panel	K192 Panel
TTBK2	○													
TTK	○				○								○	
TXK	○		○					○		○	○		○	○
TYK2	○	○	○			○		○		○	○		○	
TYK2 (JH1)													○	
TYK2 (JH2)													○	
TYK2 (JH1 JH2)	○	○												
TYRO3	○	○	○					○	○	○	○		○	○
TYRO3 [non-activated]		○												
ULK1													○	○
ULK2													○	○
ULK3	○												○	○
VRK1	○													
VRK2	○													
WEE1	○	○			○								○	○
WEE2													○	○
WNK1	○	○	○	○				○		○				
WNK2	○		○					○		○				
WNK3	○		○					○		○				
WNK4	○	○												
YES(YES1)	○	○	○					○	○	○	○		○	
YES(YES1) [T348I]	○		○					○	○	○	○			
YSK1(STK25)	○													
YSK4(MAP3K19)													○	○
ZAK	○												○	○
ZAP70	○		○					○		○	○			

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