Kinase Assay Kits

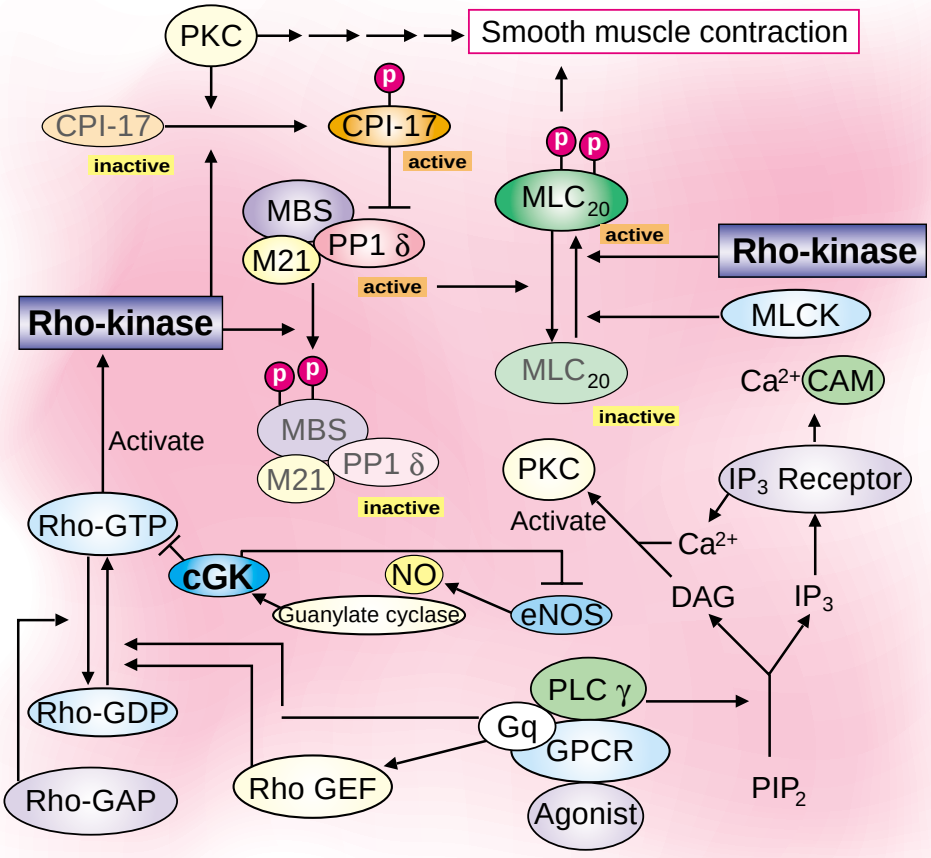
MBL® International Corporation

Products and Solutions to Advance Scientific Discoveries™

For research use only

Kinase Detection and Inhibitor Screening Assay Kits

Signal transduction of smooth muscle contraction



Serine/Threonine Kinase Kits

- Akt/PKB
- Aurora A
- Aurora Family
- CaM Kinase II
- Casein Kinase 2
- Cdc2-Cyclin B
- Checkpoint Kinases
- cGK/PKG
- JNK/SAPK
- MAPKAP Kinase 2
- Polo-like Kinase-1
- Polo-like Kinase-3
- PKA & PKC
- Rho Kinase

Tyrosine Kinase Kits

- FGFR2
- Lck/p56
- Met
- Pyk2
- Src
- Wee1

Phosphatase Assay Kits

- PTP1B Phosphatase
- T Cell Tyrosine Phosphatase (TC-PTP)

Phospho-Specific Antibodies

- Complete list of Phospho-Antibodies

For more information and to order, go to www.mblintl.com

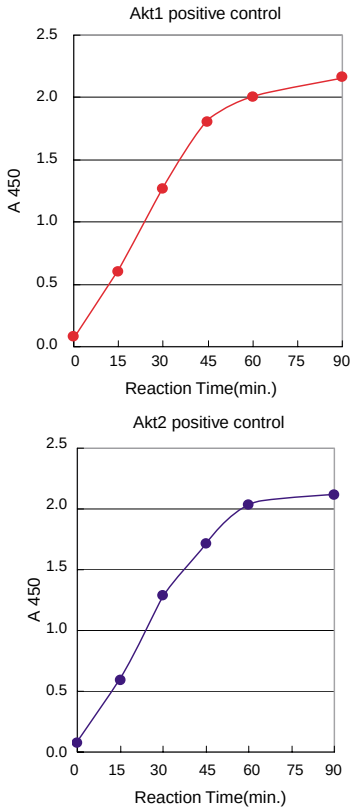
For research use only

CycLex® Akt/PKB Kinase Assay/Inhibitor Screening Kit
KinaseSTAR™ Akt/PKB Activity Assay Kit

The PI3K and Akt (also known as Protein Kinase B) signaling pathway regulates a variety of biological processes including survival, proliferation, cell growth, cell motility and glycogen metabolism. Akt mediates insulin- and IGF-1-induced cellular responses, such as the inhibition of glycogen synthase kinase-3, the stimulation of glucose uptake and the promotion of cell survival by inhibiting apoptosis. Mammals have three closely related Akt genes, encoding the isoforms Akt1, Akt2 and. Akt3. Over-expression of Akt1 or Akt2 is associated with some human ovarian, pancreatic, and breast carcinomas[1)].

MBL has two different kits for measuring Akt activity. The **CycLex® Akt/PKB Kinase Assay/Inhibitor Screening Kit** is a single-site, non-quantitative immunoassay for Akt activity. Plates are pre-coated with "AKTide-2T", a specific Akt substrate that is efficiently phosphorylated by Akt1, 2 and 3. The detector antibody is AT-3E2, a monoclonal antibody that detects only the phosphorylated form of AKTide-2T. The kit can be used to study the kinetics of purified or partially purified Akt as well as to screen Akt inhibitors or activators.

The **KinaseSTAR™ Akt/PKB Activity Assay Kit** utilizes an Akt-specific antibody to immunoprecipitate Akt from cell lysates. Akt-specific activity is then analyzed by determining the phosphorylation of GSK-3α by Western blotting using a phospho-GSK-3α (Ser21) specific antibody.



Time course of recombinant Akt1 and Akt2 enzyme reactions, as measured using the CycLex® Akt Kinase Inhibitor Screening kit (Code No. CY-1168).

Code No.	Products	Quantity
CY-1168	CycLex® AKT/PKB Kinase Assay/Inhibitor Screening Kit	96 wells
JM-K435-40	KinaseSTAR™ Akt Activity Assay Kit	40 assays

Related Products

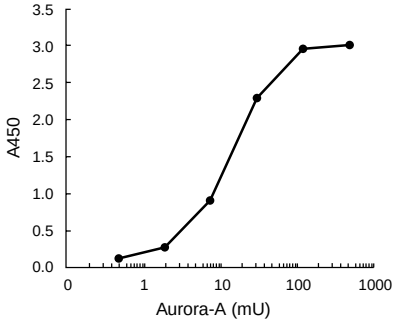
Code No.	Products	Quantity
CY-E1168-1	AKT1 Positive Control	5 units
CY-E1168-2	AKT2 Positive Control	5 units
CY-M1025	Anti-Phospho-AKTide-2T (Thr376) Monoclonal Antibody	100 µg
JM-3247-100	Anti-Akt/PKB Polyclonal Antibody	100 µg
JM-3257-100	Anti-Phospho-Akt (Ser473) Polyclonal Antibody	100 µg
JM-3516-100	Anti-Phospho-GSK3α/β (Ser21/Ser9) Polyclonal Antibody	100 µg
JM-1701-1	Akt Inhibitor	1 mg
JM-7003-100	GSK-3α/GST Fusion Protein, Human Recombinant	100 µg
JM-7036-1	Akt Activated Cell Lysate	1 mg
JM-7035-1	Akt Negative Control Cell Lysate	1 mg

CycLex® Aurora A Kinase Assay/Inhibitor Screening Kit
CycLex® Aurora Family Kinase Assay/Inhibitor Screening Kit

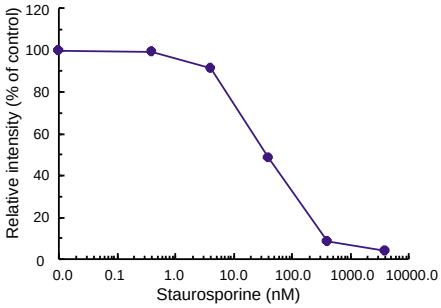
Aurora kinases regulate centrosome maturation, chromosome segregation, and cytokinesis. A-type Aurora kinases localize to both centrosomes and spindle microtubules and have been implicated in spindle assembly. The B-type Aurora kinases are present at centromeres in prophase and metaphase, before they relocalize to the central spindle and the midbody in anaphase and telophase. The C-type Aurora kinases are expressed primarily in testis and some tumor cell lines, where they have been localized to spindle poles. All three Aurora kinases family members have been reported to be over-expressed in many human cancers, and elevated expression has been correlated with chromosomal instability and in some instances, clinically aggressive disease[2].

MBL presents two kits for measuring Aurora kinase activity. The **CycLex® Aurora A Kinase** Assay/**Inhibitor Screening Kit** uses recombinant Lats2 as a specific Aurora A substrate. A detector antibody specifically recognizes only the phosphorylated form of the serine83 residue on Lats2. The kit is suitable for assaying the kinetics of purified or partially purified Aurora-A as well as for screening Aurora-A inhibitors.

The **CycLex® Aurora Family Kinase Assay/Inhibitor Screening Kit**, on the other hand, detects all 3 Aurora family kinases (Aurora A, B, and C) using "Aurora-substrate-1" as the substrate. Like the Aurora A kit, this colorimetric ELISA assay is ideal for screening for the effects of Aurora kinase inhibitors and activators on purified Aurora kinase proteins.



Dose dependency of recombinant Aurora-A enzyme reaction, as measured using the CycLex® Aurora A Kinase Inhibitor Screening kit (Code No. CY-1165).



Effect of the broad-spectrum kinase inhibitor staurosporine on Aurora-A activity

Code No.	Products	Quantity
CY-1165	CycLex® Aurora A kinase Assay/Inhibitor Screening Kit	96 wells
CY-1174	CycLex® Aurora Family Kinase Assay/Inhibitor Screening Kit	96 wells

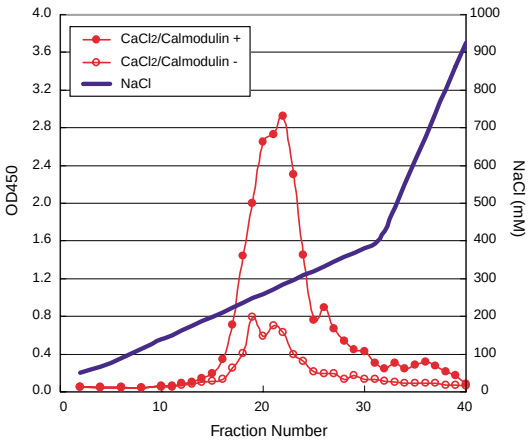
Related Products

Code No.	Products	Quantity
CY-E1165	Aurora A Positive Control	8 units
CY-E1174-1	Aurora B Positive Control	8 units
CY-E1174-2	Aurora C Positive Control	8 units
CY-M1020	Anti-PhosphoLats2 (Ser83) Monoclonal Antibody	100 µg

CycLex® CaM Kinase II Assay Kit

Ca^{2+}/calmodulin-dependent protein kinase (CaM kinase II) is a ubiquitously expressed, multifunctional protein kinase involved in neurotransmitter synthesis and release, neuronal plasticity and gene expression. CaM-kinase II is highly concentrated at synapses that use glutamate as the neurotransmitter. CaM-kinase II phosphorylates the glutamate receptor and enhances the ion current, which may contribute to mechanisms of synaptic plasticity for learning and memory[3]. CaM kinase II requires calcium-bound calmodulin for activation and for its ability to phosphorylate and alter the function of a variety of substrates.

The **CycLex® CaM kinase II Assay Kit** is designed to measure the activities of CaM kinase II in cells lines or tissue homogenates and for screening for CaM Kinase inhibitors or activators. The assay is a simple 96-well ELISA that uses a phospho-specific monoclonal antibody to recognize the phospho-threonine residue in "Syntide-2", which can be efficiently phosphorylated by CaM kinase II.



RESOURCE Q column elution profile of CaM kinase II from rabbit brain extract, measured using the CycLex® CaM KII assay kit (Code No. CY-1173)

Code No.	Products	Quantity
CY-1173	CycLex® CaM-Kinase II Assay Kit	96 wells

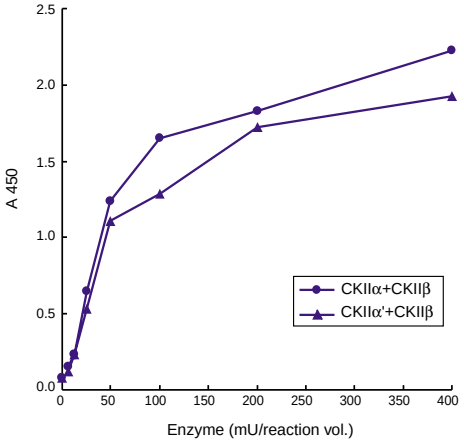
Related Products

Code No.	Products	Quantity
CY-E1173	CaM-kinase II Positive Control	3 units
CY-M1023	Anti-Phospho-Syntide-2 Monoclonal Antibody	100 µg

CycLex® Casein Kinase-2 (CK2) Assay/Inhibitor Screening Kit

Protein kinase CK2 is a ubiquitous and pleiotropic serine/threonine protein kinase that interacts with many different signaling pathways, especially those involved in specific phases of the cell cycle. The holoenzyme is composed of two catalytic (α and/or α') and two regulatory (β) subunits. Both the free α/α' catalytic subunits and the holoenzyme are constitutively active, a feature that is suspected to underlie CK2's oncogenic potential[4]. The enzyme is highly expressed in most cancers, and research suggests that CK2 dysregulation in tumors may influence their apoptotic activity[5]. Thus, CK2 is an attractive target for anti-neoplastic and antitumor drugs.

The **CycLex® CK2 Assay/Inhibitor Screening Kit** is designed to measure the activity of purified Casein Kinase-2 (CK2) for the rapid and sensitive evaluation of CK2 inhibitors or activators. The phospho-specific monoclonal antibody used in this assay kit specifically recognizes the phospho-serine46 residue in p53, which is phosphorylated by CK2 *in vitro*.



Dose dependency of the recombinant CK2 enzyme reaction, measured using the CycLex® CK2 assay kit (Code No. CY-1170) with positive controls CK2 α/β and CK2 α'/β.

Code No.	Products	Quantity
CY-1170	CycLex® Casein kinase-2 (CK2) Assay/Inhibitor Screening Kit	96 wells

Related Products

Code No.	Products	Quantity
CY-E1170-1	CK2 (α/β) Positive Control	4 units
CY-E1170-2	CK2 (α'/β) Positive Control	4 units

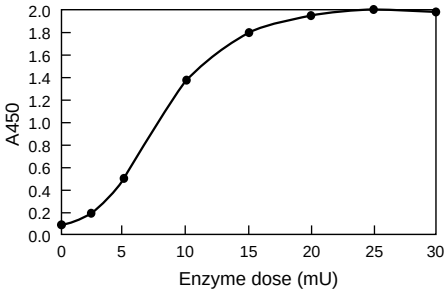
For research use only

CycLex® Cdc2-Cyclin B Kinase Assay Kit
MESACUP® Cdc2 Kinase Assay Kit

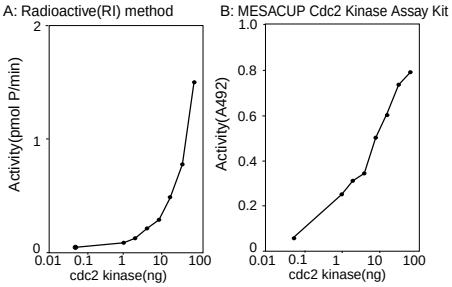
All transitions of the cell cycle are controlled through regulation of the cyclin-dependent kinases (Cdks). Cdc2 kinase, also known as Cdk1, associates with cyclin B to initiate the onset of mitosis. Cdc2 kinase and its homologues play an essential role in the regulation of the cell cycle and gene transcription.

The **CycLex® Cdc2-Cyclin B Kinase Assay Kit** is designed to accurately measure the presence and relative amount of Cdc2-Cyclin B kinase activity in cell extracts, tissue homogenates, or column fractions, and for the nonisotopic kinetic analysis of Cdc2-Cyclin B Kinase activity. The kit is also ideal for the identification of pharmacological modulators of Cdc2 kinase activity in an easy, colorimetric 96-well ELISA format. The kit includes a phospho-specific monoclonal that specifically recognizes the phospho-Thr376 residue in human Cdc7, which is phosphorylated by Cdc2-Cyclin B kinase but not by Cdk2-Cyclin A, Cdk2-Cyclin E, Cdk4-Cyclin D or Cdk6-Cyclin D.

MBL has developed the **MESACUP® Cdc2 Kinase Assay Kit** to provide a simple, reliable and non-radioactive method for measuring Cdc2 kinase activity. The kit is based on an enzyme linked immunosorbent assay (ELISA) that utilizes a specific, biotinylated peptide as a substrate for the Cdc2 kinase and a monoclonal antibody recognizing the phosphorylated form of the peptide substrate. This method is as sensitive as the radioactive one and is less affected by concentrations of ATP present in the reaction mixture. The assay can be performed on crude cell extracts, column fractions or purified enzymes.



Dose dependency of the recombinant Cdc2-Cyclin B enzyme reaction, measured using the CycLex® Cdc2-Cyclin B assay kit (Code No. CY-1164)



Dilution curve of cdc2 kinase

Code No.	Products	Quantity
CY-1164	CycLex® Cdc2-Cyclin B Kinase Assay Kit	96 wells
5235	MESACUP® Cdc2/Cdk1 Kinase Assay Kit	96 wells

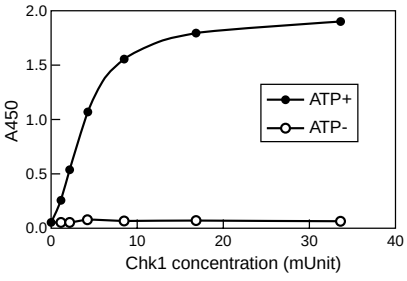
Related Products

Code No.	Products	Quantity
CY-E1164	Cdc-2 Cyclin B Positive Control	5 units
5236	HCK-gel	1 mL

CycLex® Checkpoint Kinase Assay/Inhibitor Screening Kit

Cdc25C phosphatase plays a crucial role in the regulation of the G2/M progression through the cell cycle. In response to DNA damage, various intracellular kinases including Chk1, Chk2, and C-TAK1 (Cdc25C-associated protein kinase), appear to phosphorylate Cdc25C on Ser216.

The **CycLex® Checkpoint Kinase Assay/Inhibitor Screening Kit** uses a phospho-Cdc25C(Ser216) monoclonal antibody to provide a specific and sensitive method to measure the activities of checkpoint kinases. This kit may be used to study the kinetics of purified or partially purified individual checkpoint kinases as well as for preinvestigational drug screening for checkpoint kinase inhibitors or activators.



Dose dependency of recombinant Chk1 enzyme reaction, measured using the CycLex® Checkpoint Kinase Assay Kit (Code No. CY-1162).

Code No.	Products	Quantity
CY-1162	CycLex® Checkpoint Kinase Assay/Inhibitor Screening Kit-1	96 wells

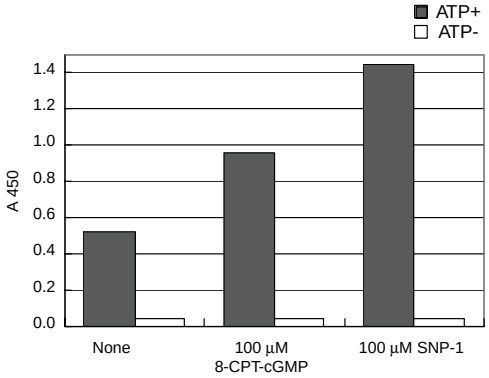
Related Products

Code No.	Products	Quantity
CY-E1162-1	Chk1 Positive Control	2 units
CY-E1162-2	Chk2 Positive Control	2 units
CY-E1162-3	C-TAK1 Positive Control	2 units

CycLex® Cyclic GMP dependent protein kinase (cGK/PKG) Assay Kit

Activation of cyclic GMP-dependent protein kinase (cGK/PKG) is an important event in the regulation of blood pressure and platelet function. Upstream signals include the generation of nitric oxide (NO) by NO synthases and the subsequent rise in cGMP levels mediated by NO-dependent guanyl cyclases (GCs). The identification of new cGK activators by high throughput screening (HTS) may lead to the development of a novel class of therapeutics for the treatment of cardiovascular diseases[6].

The **CycLex® Cyclic GMP dependent protein kinase (cGK/PKG) Assay Kit** is a single-site immunoassay for cGK activity. Plates are pre-coated with a substrate corresponding to recombinant G-kinase substrate, which contains threonine residues that can be phosphorylated by cGK family members, including cGKI and cGKII. The kit may be used to determine the presence of cGK activity in cell lysates, tissue homogenates, purification column fractions, or to follow the kinetics of a purified or partially purified cGK protein, as well as for screening for cGK inhibitors.



Activation of full length PKGIa expressed in 293T cell by 8-CPT-cGMP and SNP-1 *in vivo*, measured using the CycLex® cGK assay kit (Code No. CY-1161).

Code No.	Products	Quantity
CY-1161	CycLex® Cyclic GMP dependent protein kinase (cGK) Assay Kit	96 wells

Related Products

Code No.	Products	Quantity
CY-E1161-1	Cyclic GMP dependent protein kinase (cGK) Positive Control (Catalytic Domain)	4000 units
CY-E1161-2	Cyclic GMP dependent protein kinase (cGK) Positive Control (full length)	4000 units
JM-K372-100	cGMP Direct Immunoassay Kit	100 assays

KinaseSTAR™ JNK Activity Assay Kit
KinaseSTAR™ JNK Activity Screening Kit

JNK (c-Jun N-terminal kinase), also called stress activated protein kinase (SAPK), is a member of the serine/threonine MAP kinase family. JNK is activated in response to a variety of stimuli, including inflammatory cytokines, growth factors and cellular stresses such as UV-light. JNK plays a key role in several basic cellular processes such as inflammation and apoptosis.

The **KinaseSTAR™ JNK Activity Assay Kit** utilizes a JNK-specific antibody to immunoprecipitate JNK from cell lysates. JNK-specific activity is then analyzed by detecting the phosphorylation of c-Jun by Western blotting with a phospho-c-Jun specific antibody.

The **KinaseSTAR™ JNK Activity Screening Kit** is designed to rapidly and easily screen large numbers of samples for JNK activity. The kit uses an N-terminal c-Jun (1-79) fusion protein bound to glutathione sepharose beads to selectively precipitate JNK from cell lysates. After washing to remove non-specifically bound proteins, the kinase reaction is then carried out in the presence of cold ATP. c-Jun phosphorylation is measured by Western blot analysis using a phospho-c-Jun specific antibody.

Code No.	Products	Quantity
JM-K431-40	KinaseSTAR™ JNK Activity Assay Kit	40 tests
JM-K430-40	KinaseSTAR™ JNK Activity Screening Kit	40 tests

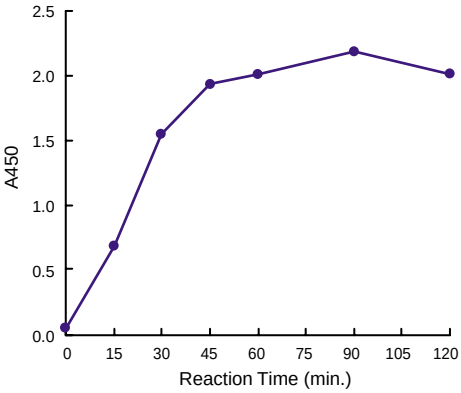
Related Products

Code No.	Products	Quantity
JM-7001-100	c-Jun/GST Fusion Protein (1-79), Human Recombinant	100 µg
JM-3502-100	Anti-Phospho-c-Jun (Ser73) Polyclonal Antibody	100 µg
JM-3701-100	Anti-JNK Polyclonal Antibody	100 µg
JM-3589-100	Anti-Phospho-JNK/SAPK (Thr183/Tyr185) Polyclonal Antibody	100 µg
JM-7011-50	JNKI1 (JNK Peptide Inhibitor I)	50 µL
JM-7021-50	JNKI1 Negative Control Peptide	50 µL
JM-7032-1	JNK Activated Jurkat Cell Lysate	1 mg
JM-7031-1	JNK Negative Jurkat Cell Lysate	1 mg

CycLex® MAPKAP- kinase2 Assay/Inhibitor Screening Kit

MAP kinase-activated protein kinase 2 (MAPKAP-kinase 2) is a substrate for p38 MAPK, which is involved in the biosynthesis of inflammatory cytokines, apoptosis, and platelet aggregation. Treatment of cells with endotoxin, interleukin-1, tumor necrosis factor, or various stress stimuli activate p38 MAPK and MAPKAP-kinase 2. Recently it was reported that the major substrate for MAPKAP-kinase 2 in human neutrophils is LSP1 (Leukocyte Specific Protein 1), a 339-amino acid cytoskeletal protein expressed in neutrophils, lymphocytes, and macrophages[7].

The **CycLex® MAPKAP-kinase2 Assay/Inhibitor Screening Kit** provides a non-isotopic, sensitive, and specific method to detect MAPKAP-kinase 2 activity for HTS screening applications. The phospho-serine monoclonal antibody used in this assay binds the phospho-Ser204 residue in LSP1 (Leukocyte Specific Protein 1), which is phosphorylated by MAPKAP-kinase 2 *in vitro*.



Time course of recombinant MAPKAP-kinase 2 enzyme reaction, measured using the CycLex® MAPKAP-K2 assay kit (Code No. CY-1166).

Code No.	Products	Quantity
CY-1166	CycLex® MAPKAP-kinase 2 Assay/Inhibitor Screening Kit	96 wells

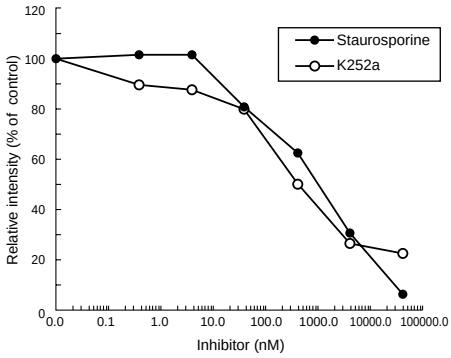
Related Products

Code No.	Products	Quantity
CY-E1166	MAPKAP-kinase 2 Positive Control	4 units
CY-M1019	Anti-Phospho-LSP1 (Ser204) Monoclonal Antibody	100 µg

CycLex® Polo-like kinase-1 (PLK-1) Assay/Inhibitor Screening Kit

Polo-like kinases (PLK) are important contributors to several cell-cycle events. PLKs function in centrosome assembly and separation during the formation of the bipolar spindle. In mammalian cells, antibody microinjection suggests a role for PLK-1 in centrosome maturation and in the separation of sister chromatids during mitosis. Elevated expression of PLK-1 occurs in many different types of cancer, and PLK-1 has been proposed as a marker for several tumors[8].

The colorimetric **CycLex® Polo-like kinase-1 (PLK-1) Inhibitor Screening Kit** uses an HRP-coupled polyclonal anti-phosphothreonine to detect phosphorylation of a proprietary, specific PLK-1 substrate. The assay provides a non-isotopic, sensitive, and specific method to screen for activators or inhibitors of PLK-1 activity.



Effect of broad-spectrum kinase inhibitors staurosporine and K252a on PLK-1 activity, as measured using the CycLex® PLK-1 Inhibitor Screening kit (Code No. CY-1163)

Code No.	Products	Quantity
CY-1163	CycLex® Polo-like kinase 1 Assay/Inhibitor Screening Kit	96 wells

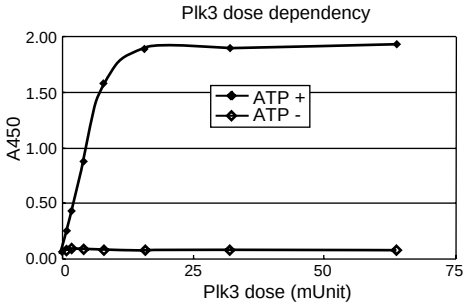
Related Products

Code No.	Products	Quantity
CY-E1163	Plk1 Positive Control	2 units

CycLex® Polo-like kinase-3 (PLK-3) Assay/Inhibitor Screening Kit

Polo-like kinases (PLK) are important contributors to several cell-cycle events. PLK-3 contributes to regulation of M phase of the cell cycle. In contrast to PLK-1, overexpression of PLK-3 in mammalian cells suppresses proliferation, inhibits colony formation, and induces apoptosis and chromatin condensation. PLK-3 has therefore been suggested as a candidate tumor suppressor, and its expression is down-regulated or absent in several human carcinomas[9]. PLK-3 functionally links DNA damage to cell cycle arrest and apoptosis via interaction with p53.

The **CycLex® Polo-like kinase-3 (PLK-3)** Assay/**Inhibitor Screening Kit** uses a monoclonal anti-phosphoserine to detect phosphorylation of a proprietary, recombinant protein that is a specific PLK-3 substrate. The nonradioactive ELISA-format assay permits easy and sensitive detection of the effects of pharmacological agents on PLK-3 activity.



Dose dependency of recombinant PLK-3 enzyme reaction, as measured using the CycLex ® PLK-3 Inhibitor Screening Kit (Code No. CY-1176)

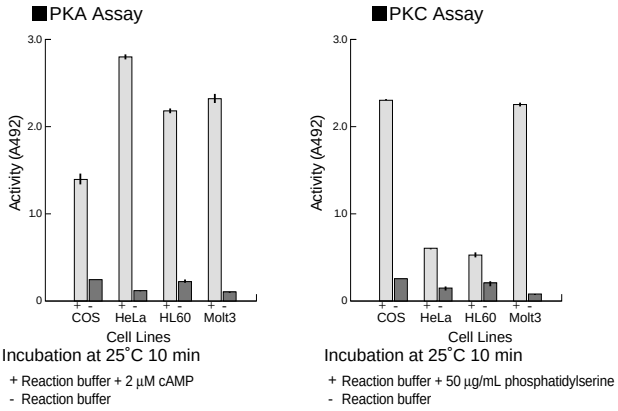
Code No.	Products	Quantity
CY-1176	CycLex® Polo-like kinase-3 (PLK-3) Assay/Inhibitor Screening Kit	96 wells

Related Products

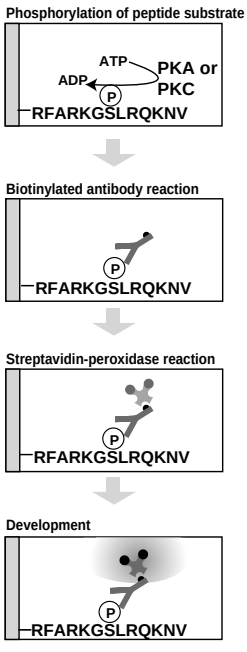
Code No.	Products	Quantity
CY-E1176	PLK-3 Positive Control	1.6 units

MESACUP® PKA/PKC Protein Kinase Assay Kit

MBL has developed the **MESACUP® Protein Kinase Assay Kit** to provide a simple, reliable and non-radioactive method for measuring the activities of either cAMP-dependent protein kinase (PKA) or protein kinase C (PKC). The kit is based on an enzyme linked immunosorbent assay (ELISA) that uses a synthetic pseudosubstrate peptide and a monoclonal antibody recognizing the phosphorylated form of the peptide. By using different buffers and including either cAMP (for assaying PKA) or calcium and phosphatidylserine (for assaying PKC), the same kit can be used to specifically detect activity by either kinase. The assay can be performed on crude cell extracts, column fractions or purified enzymes and is perfect for detecting the effects of pharmacological agents on PKA/PKC.



Assay Procedure



Code No.	Products	Quantity
5230	MESACUP® Protein Kinase Assay Kit	96 wells

Related Products

Code No.	Products	Quantity
JM-K371-100	cAMP Activity Assay Kit	100 tests

For more information and to order, go to www.mblintl.com

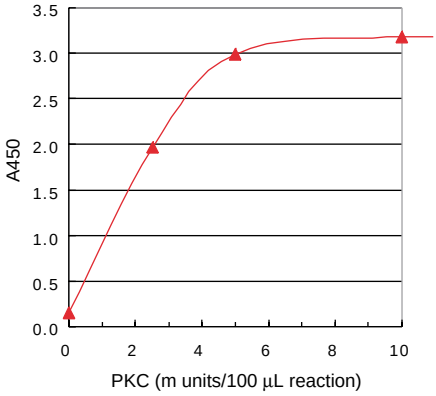
CycLex® Protein Kinase C (PKC) Superfamily Assay Kit

PKC isoenzymes are involved in multiple biochemical processes relevant to cell growth, differentiation, and transformation. PKC plays critical roles in transducing signals from a plethora of extracellular receptors, including those for hormones, neurotransmitters, growth factors, and antigens. At present, the PKC family of serine/threonine-specific protein kinases includes eleven known members that exhibit differences in tissue distribution, intracellular localization, and cofactor requirements. The PKC isoenzymes are grouped into three subfamilies[10]. Members of the Ca^{2+}-dependent subfamily (conventional PKCs), include PKCα, PKC βI and βII, and PKC γ. Members of the second subfamily (novel PKCs) can bind acidic phospholipids but are Ca^{2+}-independent and include PKC δ, ε, η, θ and μ. A third PKC subfamily (atypical) includes PKC ζ and ι/λ, which cannot bind phospholipids or phorbol esters.

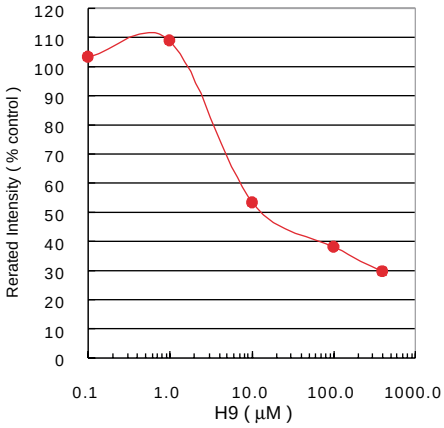
The **CycLex® Protein Kinase C Superfamily Assay Kit** is ideal for detecting the activity of purified Protein Kinase C (PKC) in high throughput screening applications. The phospho-specific monoclonal antibody used in this assay binds to the phospho-Thr38 residue in CPI-17, which is efficiently phosphorylated by PKC. The kit can be used to determine the PKC activity in column fractions, cell lysates, and tissue homogenates.

Conventional PKC	
PKC α	+
PKC βI	+
PKC βII	+
PKC γ	+
Norvel PKC	
PKC δ	+
PKC ε	+
PKC η	+
PKC θ	-
PKC μ	+
Atypical PKC	
PKC ζ	N/A
PKC ι/λ	N/A

Detectable activities of protein kinase C isozymes using the CycLex® Protein kinase C Assay Kit (Code No. CY-1175)



Dose dependency of Protein kinase C enzyme reaction, as measured using the CycLex ® Protein Kinase C Superfamily Assay Kit (Code No. CY-1175)



Effect of specific protein kinase C inhibitor H9 on activity of rat brain Protein kinase C, as measured using the CycLex ® Protein Kinase C Superfamily Assay Kit (Code No. CY-1175)

Code No.	Products	Quantity
CY-1175	CycLex® Protein Kinase C Assay Kit	96 wells

Related Products

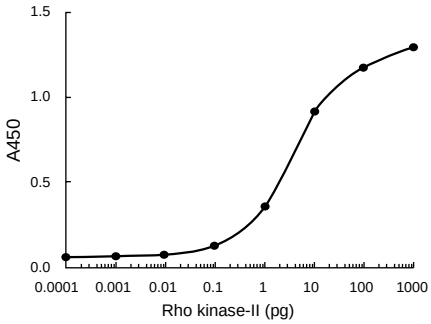
Code No.	Products	Quantity
JM-3450-100	Anti-PKC Polyclonal Antibody	0.1 mg
JM-3451-100	Anti-Phospho-PKC (Ser660) Polyclonal Antibody	0.1 mg
CY-M1024	Anti-Phospho-CPI-17 (Thr38) Monoclonal Antibody	100 μg

For research use only

CycLex® Rho-kinase Assay Kit

Rho Kinase (ROCK) regulates the formation of actin stress fibers and focal adhesion. ROCK also is involved in smooth muscle contraction via phosphorylation of myosin light chain and the myosin binding subunit of myosin phosphatase (MBS). ROCK is cleaved by caspase-3 during apoptosis, and it modulates aqueous humor outflow, making Rho kinase a target for the development of drugs to control intraocular pressure in glaucoma patients[11].

The **CycLex® Rho-kinase Assay Kit** uses anti-phospho-MBS(Thr696) monoclonal antibody to specifically detect Rho kinase activity. The kit may also be used for the detection of myotonic dystrophy protein kinase (DMPK) activity. The kit is ideal for screening for activators and inhibitors of ROCK activity.



Dose dependency of Rho kinase-II catalytic domain enzyme reaction, measured using the CycLex® Rho Kinase Assay Kit (Code No. CY-1160).

Code No.	Products	Quantity
CY-1160	CycLex® Rho-kinase Assay Kit	96 wells

Related Products

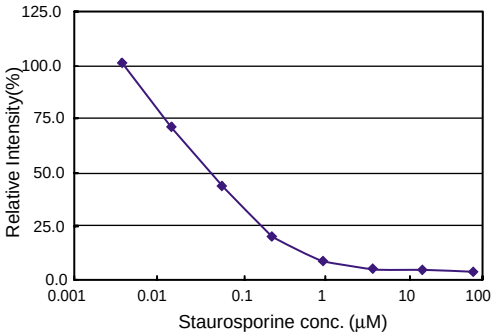
Code No.	Products	Quantity
CY-E1160-1	Rho-kinase Positive Control	2 units
CY-E1160-2	DMPK Positive Control	1 unit
CY-M1011	Anti-Phospho-MBS/MYPT(Thr696) Monoclonal Antibody	100 µg

Tyrosine Kinases

CycLex® FGFR2 Kinase Assay/Inhibitor Screening Kit

The fibroblast growth factor receptor (FGFR) family consists of four known members, FGFR1-4. The FGFR1 and FGFR2 genes are expressed in both normal and breast cancer tissues, and overexpression of FGFR1 and FGFR2 has been reported in 5–10% of primary breast cancer specimens[12]. The FGFR2 gene is localized to the same chromosomal region as the mutation responsible for Crouzon syndrome, and FGFR2 has been identified as a candidate marker for the clinical disorder[13]. Mutations in the FGFR2 gene are found in patients with Crouzon syndrome, Apert syndrome, Pfeiffer syndrome, and Jackson-Weiss syndrome.

The **CycLex® FGFR2 Kinase Assay/Inhibitor Screening Kit** is designed for the rapid and sensitive evaluation of inhibitors or activators of FGFR2 in an easy, nonradioactive ELISA-format assay. The phosphotyrosine-specific monoclonal antibody in this assay kit recognizes the phosphotyrosine residue in recombinant "Tyrosine kinase-substrate-1", which is efficiently phosphorylated by the recombinant catalytic domain of FGFR2 *in vitro*.



Effect of broad-spectrum kinase inhibitor staurosporine on activity of recombinant FGFR2 catalytic domain enzyme reaction, measured using the CycLex® FGFR2 Kinase Assay/ Inhibitor Screening Kit (Code No. CY-1082).

Code No.	Products	Quantity
CY-1082	CycLex® FGFR2 Kinase Assay/Inhibitor Screening Kit	96 wells

Related Products

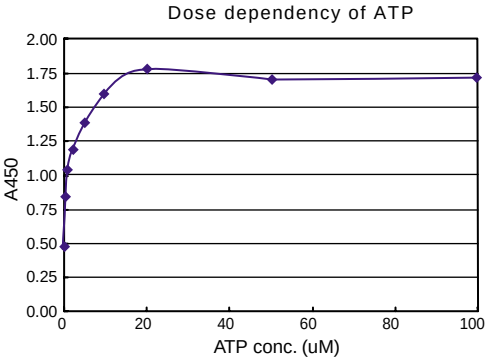
Code No.	Products	Quantity
CY-E1082	FGFR2 Kinase Recombinant Positive Control	100 units
CY-2080	CycLex® Tyrosine Kinase Assay Kit Module-1	96 assays

For more information and to order, go to www.mblintl.com

CycLex® Lck Kinase Assay/Inhibitor Screening Kit

Lck is a 56-kDa tyrosine kinase that is predominantly expressed in T lymphocytes, where its overexpression renders T cells hypersensitive to antigen stimulation. Mice deficient in Lck exhibit a severe defect in T cell maturation. A member of the Src kinase family, Lck is activated by the binding of CD4 to class II MHC molecules on antigen-presenting cells. A portion of cellular Lck associates with CD4 to propagate key biochemical signals in CD4 co-receptor function[14].

The **CycLex® Lck Kinase Assay/Inhibitor Screening Kit** is a single-site immunoassay for measuring the kinase activity of the recombinant catalytic domain of Lck. The "Tyrosine kinase-binding module-1" is used to bind Lck to a microtiter plate and subsequently activate Lck activity. The phosphotyrosine detector antibody specifically recognizes the phosphotyrosine residue on the catalytic domain of Lck itself, permitting the kit to efficiently measure the intensity of the autophosphorylation of Lck.



Dose dependency of ATP on recombinant Lck catalytic domain, measured using the CycLex® Lck Kinase Assay/ Inhibitor Screening Kit (Code No. CY-1084).

Code No.	Products	Quantity
CY-1084	CycLex® Lck Kinase Assay/Inhibitor Screening Kit	96 wells

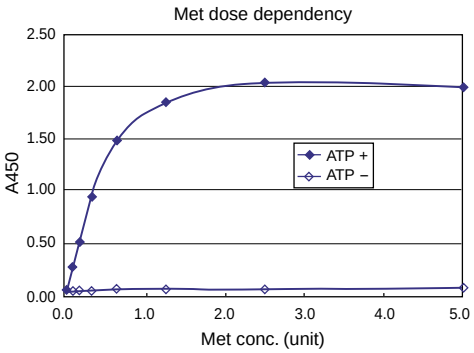
Related Products

Code No.	Products	Quantity
CY-E1084	p56/Lck Kinase Recombinant Positive Control	100 units
CY-2080	CycLex® Tyrosine Kinase Assay Kit Module-1	96 assays

CycLex® Met Kinase Assay/Inhibitor Screening Kit

Met receptor tyrosine kinase is a disulfide-linked, heterodimeric receptor expressed predominantly in epithelial cells. The ligand of the Met receptor is Hepatocyte Growth Factor (HGF/scatter factor). Signaling pathways activated by the HGF-Met interaction are involved in cell adhesion and motility. Additionally, Met mediates malignant cell transformation. Increased Met expression has been found in a significant percentage of human cancers and is amplified during the transition between primary tumors and metastasis. Dysregulation of Met activity in cells is a key event underlying tumor metastasis, and Met overexpression and hyperactivation correlate with the metastatic ability of tumor cells[15].

The **CycLex® Met Kinase Assay/Inhibitor Screening Kit** measures the activities of recombinant catalytic domain of Met for the rapid and sensitive evaluation of inhibitors or activators. An anti-phosphotyrosine monoclonal antibody specifically recognizes the phosphotyrosine residue in the recombinant catalytic domain of Met, which is captured and activated by recombinant "Tyrosine kinase-binding module-1" that has been immobilized on a microtiter plate.



Dose dependency of recombinant Met catalytic domain enzyme reaction, in the presence or absence of ATP, measured using the CycLex® Met Kinase Assay/Inhibitor Screening Kit (Code No. CY-1080).

Code No.	Products	Quantity
CY-1080	CycLex® Met Kinase Assay/Inhibitor Screening Kit	96 wells

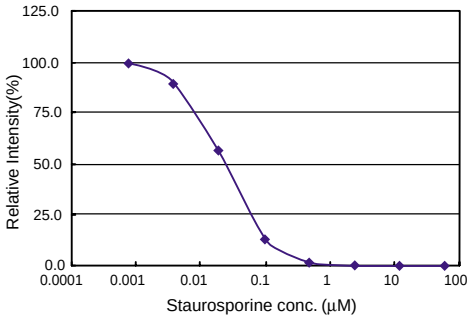
Related Products

Code No.	Products	Quantity
CY-E1080	Met Kinase Recombinant Positive Control	100 units
CY-2080	CycLex® Tyrosine Kinase Assay Kit Module-1	96 assays

CycLex® Pyk2 Kinase Assay/Inhibitor Screening Kit

Pyk2 (Proline-rich Tyrosine Kinase 2), a member of the focal adhesion kinase family, is a stress-sensitive mediator of the JNK signaling pathway[16]. Activation of Pyk2 kinase leads to the modulation of ion channel function and initiation of the MAP kinase/p38 cascade. Pyk2 is activated in response to various stimuli, such as TNF-α, changes in osmolarity, elevation in intracellular Ca^{2+} concentration, lysophosphatidic acid, and the neuropeptide bradykinin. Pyk2 is expressed mainly in the central nervous system and in hematopoietic cells. Pyk2 represents an important signaling intermediate between neuropeptides-activated receptors or neurotransmitters that increase calcium flux and the downstream signals that regulate neuronal activity[17].

The **CycLex® Pyk2 Kinase Assay/Inhibitor Screening Kit** includes "Tyrosine kinase-substrate-1", a recombinant substrate bound to the plate, which is efficiently phosphorylated by the recombinant catalytic domain of Pyk2. A phosphotyrosine monoclonal antibody detects phosphorylation of the substrate in a sensitive, colorimetric immunoassay. The kit is ideal for HTS screening of Pyk2 activators and inhibitors.



Effect of the broad-spectrum kinase inhibitor Staurosporine on the activity of recombinant Pyk2 catalytic domain enzyme reaction, measured using the CycLex® Pyk2 Kinase Assay/Inhibitor Screening Kit (Code No. CY-1081).

Code No.	Products	Quantity
CY-1081	CycLex® Pyk2 Kinase Assay/Inhibitor Screening Kit	96 wells

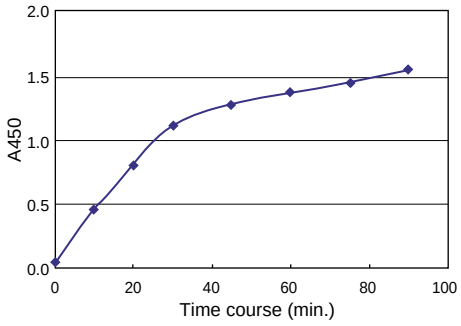
Related Products

Code No.	Products	Quantity
CY-E1081	Pyk2 Kinase Recombinant Positive Control (Catalytic Domain)	100 units
CY-2080	CycLex® Tyrosine Kinase Assay Kit Module-1	96 assays

CycLex® Src Kinase Assay/Inhibitor Screening Kit

The Src family of non-receptor protein tyrosine kinases plays critical roles in a variety of signal transduction pathways, regulating such diverse processes as cell division, motility, adhesion, angiogenesis, and survival. Src family kinases are capable of inducing malignant transformation of a variety of cell types and are frequently overexpressed in many cancers, especially colorectal and breast cancers. Further, the extent of increased Src activity correlates with malignant potential and patient survival[18]. Src is important for multiple aspects of tumor progression, including proliferation, disruption of cell/cell contacts, migration, invasiveness, resistance to apoptosis, and angiogenesis.

The CycLex® Src Kinase Assay/Inhibitor Screening Kit is a single-site, non-quantitative immunoassay for kinase activity of the catalytic domain of Src. Plates are pre-coated with a "Tyrosine kinase-binding module-1", which can easily bind the recombinant Src and subsequently activate Src kinase activity. An antibody specifically detects the phosphotyrosine residue on the recombinant catalytic domain of Src itself, which means that this kit measures the intensity of autophosphorylation of the Src catalytic domain. The assay may be used in HTS to detect the effects of pharmacological agents on the recombinant catalytic domain of Src.



Time course of recombinant Src catalytic domain enzyme reaction, measured using the CycLex® Src Kinase Assay/Inhibitor Screening Kit (Code No. CY-1083).

Code No.	Products	Quantity
CY-1083	CycLex® Src Kinase Assay/Inhibitor Screening Kit	96 wells

Related Products

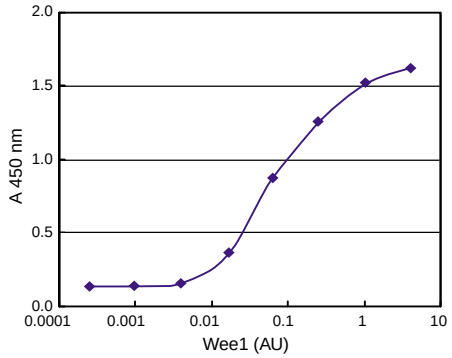
Code No.	Products	Quantity
CY-E1083	c-Src Kinase Recombinant Positive Control	100 units
CY-2080	CycLex® Tyrosine Kinase Assay Kit Module-1	96 assays

For research use only

CycLex® Wee1 Kinase Assay/Inhibitor Screening Kit

Wee1 kinase negatively regulates entry into mitosis by catalyzing the inhibitory tyrosine phosphorylation of Cdc2/cyclin B kinase[19]. Wee1 activity increases during S and G2 phases, but is sharply decreased during M phase. Wee1, along with Chk1, also regulates the G2 DNA damage checkpoint in p53-deficient tumor cells, mostly likely by inhibiting Cdc2 activity.

The phospho-tyrosine specific monoclonal antibody used in the **CycLex® Wee-1 Kinase Assay/Inhibitor Screening Kit** recognizes the phospho-Tyr15 residue in Cdc2, which is phosphorylated by Wee-1 in vitro. This assay provides a non-isotopic, sensitive and specific method to measure the activities of Wee1 kinase in a 96-well ELISA format. The kit is ideal for screening for activators and inhibitors of Wee-1 activity.



Dose dependency of recombinant Wee1 enzyme reaction, measured using the CycLex® Wee1 Kinase Assay/Inhibitor Screening Kit (Code No. CY-1172).

Code No.	Products	Quantity
CY-1172	CycLex® Wee1 Kinase Assay/Inhibitor Screening Kit	96 wells

Related Products

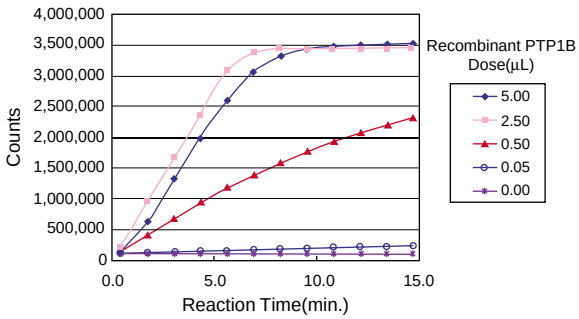
Code No.	Products	Quantity
CY-E1172	Wee1 Positive Control	8 units

Fluorometric Phosphatase Assay Kits

CycLex® Protein Tyrosine Phosphatase 1B (PTP1B) Fluorometric Assay Kit

Protein-tyrosine phosphatase (PTP1B) is a ubiquitous, non-transmembrane tyrosine phosphatase that negatively regulates insulin signaling by dephosphorylating the phosphotyrosine residues of insulin receptor kinase. In addition to modulation of insulin sensitivity, PTP1B plays a role in fuel metabolism via regulation of the leptin receptor pathway. PTP1B is a potential therapeutic target for the treatment of type II diabetes and obesity[20].

The **CycLex® PTP1B Fluorometric Assay Kit** is a fluorometric, non-radioactive assay designed to measure the activity of PTP1B. This 96-well assay is useful for the sensitive screening and evaluation of inhibitors and modulators of PTP1B activity in HTS applications. The kit includes all necessary components, including recombinant human PTP1B (residues 1-322), for use in preinvestigational drug discovery assays.



Time Course Curve of Recombinant PTP1B, measured using the CycLex® PTP1B Fluorometric Assay Kit (Code No. CY-1350).

Code No.	Products	Quantity
CY-1350	CycLex® Protein Tyrosine Phosphatase 1B (PTP1B) Fluorometric Assay Kit	100 assays

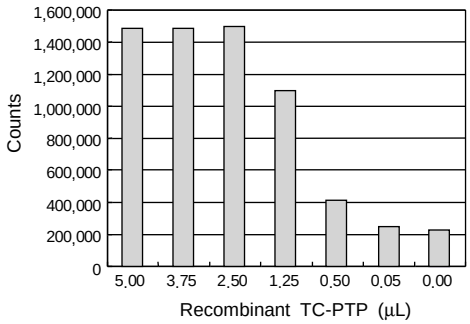
Related Products

Code No.	Products	Quantity
CY-E1350	Protein Tyrosine Phosphatase 1B (PTP1B) Positive Control	2 units

CycLex® T Cell Protein Tyrosine Phosphatase (TC-PTP) Fluorometric Assay Kit

T-cell protein tyrosine phosphatase (TC-PTP) is an intracellular phosphatase implicated in the regulation of growth factor signaling. Both the EGF receptor and the adaptor protein p52Shc have been identified as TC-PTP substrates[21]. Additionally, TC-PTP has been linked to the dephosphorylation of the insulin receptor and acts as a negative regulator of cytokine signaling via dephosphorylation of the Jak family of tyrosine kinases[22].

The CycLex® TC-PTP Fluorometric Assay Kit is a convenient, highly sensitive, homogenous assay suitable for high throughput screening applications. First, Fluoro-Phospho-Substrate, a unique phosphorylated PTP substrate, is incubated with human TC-PTP enzyme. Dephosphorylation of the substrate sensitizes it so that, in the second step, treatment with the development solution produces a fluorophore that is easily analyzed using a fluorometric plate reader or a fluorometer.



Dose Dependency of Recombinant TC-PTP using the Two-Step Method, measured using the CycLex® TC-PTP Fluorometric Assay Kit (Code No. CY-1351).

Code No.	Products	Quantity
CY-1351	CycLex® T Cell Protein Tyrosine Phosphatase (TC-PTP) Fluorometric Assay Kit	100 assays

Related Products

Code No.	Products	Quantity
CY-E1351	T Cell Protein Tyrosine Phosphatase (TC-PTP) Positive Control	2 units

References

1) Cheng, J.Q., *et al.* 1996. *Proc. Natl. Acad. Sci. USA* **93:** 3636-3641.
2) Zhou, H., *et al.* 1998. *Nat. Genet.* **20:** 189-193.
3) Soderling, T.R. 2000. *Curr. Opin. Neurobiol.* **10:** 375-380.
4) Landesman-Bollag, E., *et al.* 2001. *Oncogene* **20:** 3247-3257.
5) Li, P., *et al.* 2002. *Mol. Cell* **10:** 247-258.
6) Yamahara, K., *et al.* 2003. *Proc. Natl. Acad. Sci. USA* **100:** 3404-3409.
7) Huang, C.K., *et al.* 1997. *J. Biol. Chem.* **272:** 17-19.
8) Liu, X. and Erikson, R.L. 2003. *Proc. Natl. Acad. Sci. USA* **100:** 5789-5794.
9) Li, B., *et al.* 1996. *J. Biol. Chem.* **271:** 19402-19408.
10) Ono, Y., *et al.* 1989. *Proc. Natl. Acad. Sci. USA* **86:** 3099-3103.
11) Rao, P.V., *et al.* 2001. *Vis. Sci.* **42:** 1029-1037.
12) Adnane, J., *et al.* 1991. *Oncogene* **6:** 659-663.
13) Preston, R.A., *et al.* 1994. *Nat. Genet.* **7:** 149-153.
14) Collins, T.L., *et al.* 1992. *J. Immunol.* **148:** 2159-2162.
15) Comoglio, P.M. and Trusolino, L. 2002. *J. Clin. Invest.* **109:** 857-862.
16) Tokiwa, G., *et al.* 1996. *Science* **273:** 792-794.
17) Lev, S., *et al.* 1995. *Nature* **376:** 737-745.
18) Summy, J.M. and Gallick, G.E. 2003. *Cancer Metastasis Rev.* **22:** 337-358.
19) Lozeman, F.J. *et al.* 1990. *Biochemistry* **29:** 8436-8447.
20) Elchebly, M., *et al.* 1999. *Science* **283:** 1544-1548.
21) Tiganis, T., *et al.* 1998. *Mol. Cell Biol.* **18:** 1622-1634.
22) Galic, S., *et al.* 2003. *Mol. Cell Biol.* **23:** 2096-2108.

For research use only

Phospho-Specific Antibodies

Code No.	Products	Clone	Isotype	Size	Applications	Species
JM-3270-100	Anti-Phospho-AFX (Ser193)	Poly	rab Ig	100 µg	WB	H
JM-3257-100	Anti-Phospho-Akt (Ser473)	Poly	rab Ig	100 µg	WB,IPP	H,M,R
CY-M1025	Anti-Phospho-AKTide-2T (Thr376)	AT-3E2	mo IgG1	100 µg	ELISA	
JM-3359-100	Anti-Phospho-ATF-2 (Thr69/Thr71)	Poly	rab Ig	100 µg	WB,IPP, IH	H,M,R
BV-3269-3	Anti-Phospho-Bad (Ser112)	Poly	rab Ig	100 µg	WB,IPP	H,M,R
JM-3381-100	Anti-Phospho-β-Catenin (Ser45)	Poly	rab Ig	100 µg	WB	H,M,R
JM-3384-100	Anti-Phospho-CaMKII (Thr286)	Poly	rab Ig	100 µg	WB	H,M,R
CY-M1021	Anti-Phospho-Cdc7 (Thr376)	TK-3H7	mo IgG2b	100 µg	ELISA,IF	H
CY-M1018	Anti-Phospho-Cdc25C (Ser216)	TK-1F1	mo IgG1	100 µg	WB,ELISA	H
CY-M1024	Anti-Phospho-CPI-17 (Thr38)	AK-1F11	mo IgG1	100 µg	WB,ELISA	H,M,R
M025-3 M025-3S	Anti-Phospho- DNA Topoisomerase IIα (Thr1342)	3D4	mo IgG1	100 µg 10 µg	WB,IC	H
JM-3388-100	Anti-Phospho-Elk1 (Ser383)	Poly	rab Ig	100 µg	WB	H,M,R
JM-3441-100	Anti-Phospho-Erk1/Erk2 (Ser660)	Poly	rab Ig	100 µg	WB,IPP,IH	H,M,R
JM-3400-100	Anti-Phospho-FAK (Tyr397)	Poly	rab Ig	100 µg	WB,IF	H,M,R
D098-3 D098-3S	Anti-Phosphorylated GFAP (Thr7)	TMG7	rat IgG2a	100 µg 10 µg	WB,IC	H
MY-01-3	Anti-Phospho GFAP (Ser8)	YC10	mo IgG1	50 µg	WB,IC	H,Po,Bo
D121-3	Anti-Phosphorylated GFAP (Ser13)	KT13	mo IgG1	100 µg	WB,IC	H
JM-3516-100	Anti-Phospho-GSK3α/β (Ser21/Ser9)	Poly	rab Ig	100 µg	WB,IH	H,M,R
JM-3495-100	Anti-Phospho-GSK-3β (Ser9)	Poly	rab Ig	100 µg	WB,IH	H,M,R
CY-M1017	Anti-Phospho-G-substrate (Thr68/119)	10H11	mo IgG2a	100 µg	WB,ELISA	H,M,R
CY-P1015	Anti-Phospho-Histone H2A.X (Ser139)	Poly	mo IgG1	100 µg	WB,IF	H,M,R
PM006 PM006S	Anti-Phospho Histone H3 (Ser28)	Poly	rab IgG	50 µg 10 µg	WB,IC	H
JM-3478-100	Anti-Phospho-SEK1/MKK4/JKK1	Poly	rab Ig	100 µg	WB	H,M,R
JM-3589-100	Anti-Phospho-JNK/SAPK (Thr183/Tyr185)	Poly	rab Ig	100 µg	WB,IH,IF	H,M,R
JM-3502-100	Anti-Phospho-c-Jun (Ser73)	Poly	rab Ig	100 µg	WB,IH	H,M,R
CY-M1020	Anti-Phospho-Lats2 (Ser83)	ST-3B1	mo IgG1	100 µg	WB,ELISA	H
JM-3499-100	Anti-Phospho-Lck (Tyr505)	Poly	rab Ig	100 µg	WB,IPP,IH	H
CY-M1019	Anti-Phospho-LSP1 (Ser204)	AT-1E6	mo IgG1	100 µg	WB,ELISA	H,M,R
JM-3434-100	Anti-Phospho-MAPKAPK-2 (Thr334)	Poly	rab Ig	100 µg	WB	H
CY-M1011	Anti-Phospho-MBS/ MYPT1 (Thr 696)	AF20	mo IgG1	100 µg	WB,ELISA	H,M,R,Ch
JM-3519-100	Anti-Phospho-Mek1/2 (Thr292)	Poly	rab Ig	100 µL	WB	H,M,R
JM-3431-100	Anti-Phospho-MLK3 (Thr277/Ser281)	Poly	rab Ig	100 µg	WB	H,M
JM-3278-100	Anti-Phospho-MSK1 (Thr581)	Poly	rab Ig	100 µg	WB	H,M
JM-3501-100	Anti-Phospho-c-Myc (Thr58/Ser62)	Poly	rab Ig	100 µg	WB,IPP,IH	H,M,R
JM-3438-100	Anti-Phospho-p38 MAPK(Thr180/Tyr182)	Poly	rab Ig	100 µg	WB,IPP,IH	H,M,R
JM-3515-100	Anti-Phospho-p53 (Ser15)	Poly	rab Ig	100 µg	WB,IPP,IH	H,M,R
K0059-3	Anti-Phospho-p53 (Ser315)	FPS315	mo IgG1	100 µg	IPP-WB	H
K0060-3 K0060-3S	Anti-Phospho-p53 (Ser392)	FPS392	mo IgG1	100 µg 10 µg	WB,IH	H
JM-3451-100	Anti-Phospho-PKC (Ser660)	Poly	rab Ig	100 µg	WB	H,M,R
JM-3504-100	Anti-Phospho-Raf (Ser259)	Poly	rab Ig	100 µg	WB,IH	H,M,R
CY-M1014	Anti-Phospho-Rb (Thr356)	4E3	mo IgG1	100 µg	WB,IPP,ELISA	H
CY-M1012	Anti-Phospho-Rb (Ser612)	4E4	mo IgG2a	100 µg	WB,IPP,ELISA	H
CY-M1013	Anti-Phospho-Rb (Ser612)	3C11	mo IgG2a	100 µg	WB,IPP,ELISA	H
M045-3 M045-3S	Anti-Phospho-Rb (Ser780)	2C4	mo IgG1	100 µg 10 µg	WB	H,M(-)

WB: Western blotting, IPP: Immunoprecipitation, IC: Immunocytochemistry, IH: Immunohistochemistry, ELISA: Enzyme-linked Immunosorbent Assay, IF: Immunofluorescence
Bo: Bovine, Ch: Chicken, H: Human, Hm: Hamster, M or mo: Mouse, P: Porcine, R: Rat, Rab: Rabbit

Phospho-Specific Antibodies

Code No.	Products	Clone	Isotype	Size	Applications	Species
555 555S	Anti-Phospho-Rb (Ser780)	Poly	rab IgG	100 µg 10 µg	WB	H,M
CY-M1015	Anti-Phospho-Rb (Ser807)	5H12	mo IgG1	100 µg	WB,IPP,ELISA	H
JM-3505-100	Anti-Phospho-S6 Kinase (Thr389/Thr412)	Poly	rab Ig	100 µg	WB	H,M,R
CPK-Z-2B9	Anti-Phosphoserine (RFARKGS(PO_4)LRQKNV)	2B9	mo IgG	100 µg	ELISA	H,M,R
JM-3467-100	Anti-Phospho-Stat1 (Tyr701)	Poly	rab Ig	100 µg	WB	H,M
JM-3469-100	Anti-Phospho-Stat2 (Tyr689)	Poly	rab Ig	100 µg	WB	H,M
D128-3	Anti-phospho-STAT3 (Tyr705/708)	PS3/1	mo IgG1	100 µg	WB,IC	H,M,Ze
JM-3474-100	Anti-Phospho-Stat3 (Ser727)	Poly	rab Ig	100 µg	WB,IPP,IH	H,M
JM-3475-100	Anti-Phospho-Stat5 (Tyr694)	Poly	rab Ig	100 µg	WB	H,M
JM-3476-100	Anti-Phospho-Stat6 (Tyr641)	Poly	rab Ig	100 µg	WB	H,M
CY-M1023	Anti-Phospho-Syntide-2	MS-6E6	mo IgG2b	100 µg	ELISA	M
JM-3550-100	Anti-Phospho-Tau (Ser404)	Poly	Goat Ig	100 µg	WB,IPP,IH	H,M,R
JM-3503-100	Anti-Phospho-TrkA (Tyr490)	Poly	rab Ig	100 µg	WB,IPP,IC	H,M,R
MH-11-3	Anti-Phosphotyrosine	6D12	mo IgG1κ	200 µg	WB,IC	all
MH-11-4	Anti-Phosphotyrosine-FITC	6D12	mo IgG1κ	100 µg	IC	all
D096-3 D096-3S	Anti-Phospho-Vimentin (Ser6)	MO6	mo IgG1	100 µg 10 µg	WB,IC	H
D099-3 D099-3S	Anti-Phospho-Vimentin (Ser33)	YT33	mo IgG1	100 µg 10 µg	WB,IC	H
D094-3 D094-3S	Anti-Phospho-Vimentin (Ser38)	TM38	rat IgG2a	100 µg 10 µg	WB,IC	H
D122-3 D122-3S	Anti-Phospho-Vimentin (Ser50)	TM50	rat IgG2a	100 µg 10 µg	WB,IC	H,M,R
D076-3 D076-3S	Anti-Phospho-Vimentin (Ser55)	4A4	mo IgG2b	100 µg 10 µg	WB,IC,ELISA	H,M,R
D093-3 D093-3S	Anti-Phospho-Vimentin (Ser71)	TM71	rat IgG2a	100 µg 10 µg	WB,IC	H,M,R
D095-3 D095-3S	Anti-Phospho-Vimentin (Ser82)	MO82	mo IgG2b	100 µg 10 µg	WB,IC	H,M,R

WB: Western blotting, IPP: Immunoprecipitation, IC: Immunocytochemistry, IH: Immunohistochemistry, ELISA: Enzyme-linked Immunosorbent Assay, IF: Immunofluorescence
Bo: Bovine, Ch: Chicken, H: Human, Hm: Hamster, M or mo: Mouse, P: Porcine, R: Rat, Rab: Rabbit

Visit our website at www.mblintl.com

for more information on these and other products.

MBL Group

MBL International Corporation

MBL International Corporation
15 B Constitution Way
Woburn, MA 018001, USA
TEL : (781) 939-6964
(800) 200-5459
FAX : (781) 939-6963
URL: http://www.mblintl.com e-mail: info@mblintl.com

MBL

MEDICAL & BIOLOGICAL LABORATORIES CO., LTD.
5-10 Marunouchi 3 chome, Naka-ku,
Nagoya 460-0002, JAPAN
TEL : 81-52-971-2081 FAX : 81-52-971-2337
URL: http://www.mbl.co.jp