



Kinase Assay Kits

MBL[®]
International Corporation

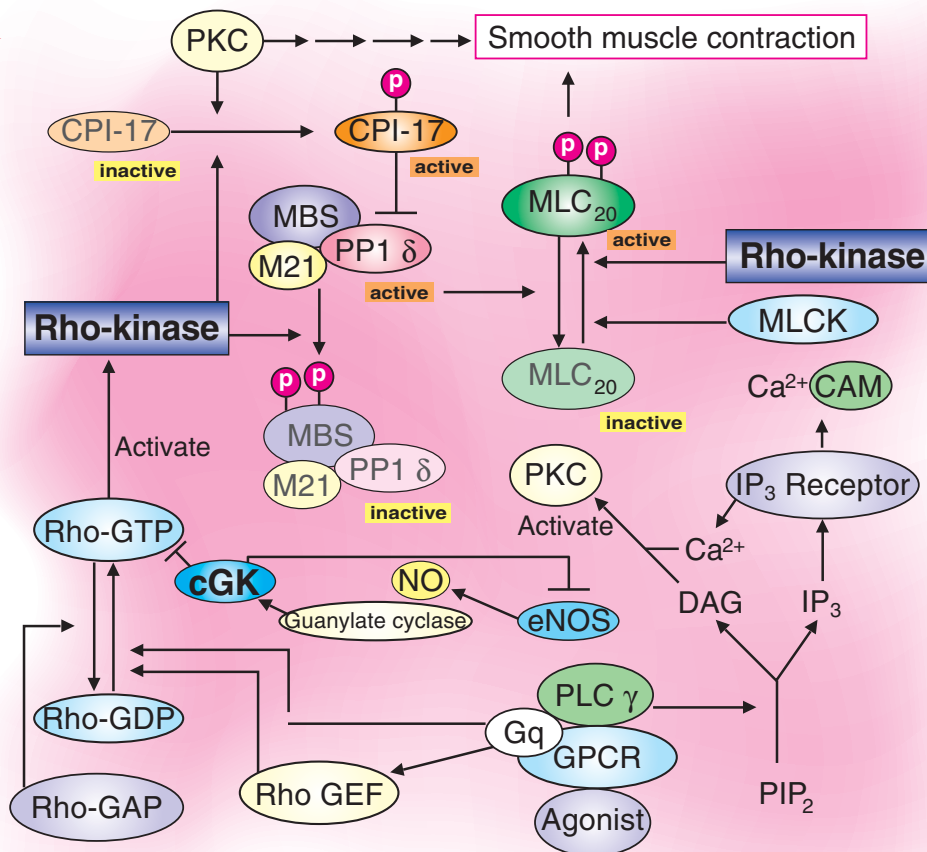
Products and Solutions to Advance Scientific Discoveries[™]

For research use only

Kinase Detection and Inhibitor Screening Assay Kits

Signal transduction of smooth muscle contraction

New Products Updated!



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
Mps1/TTK
p38
PDK1
Polo-like Kinase-1
Polo-like Kinase-3
PKA & PKC
Raf
Rho Kinase

Tyrosine Kinase Kits

DYRK2
FGFR2
Lck/p56
Met
Pyk2
Src
Wee1

Phosphatase Assay Kits

PTP1B Phosphatase
T Cell Tyrosine Phosphatase (TC-PTP)
LMW-PTP/ACP1

Phospho-Specific Antibodies

Complete list of Phospho-Antibodies

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

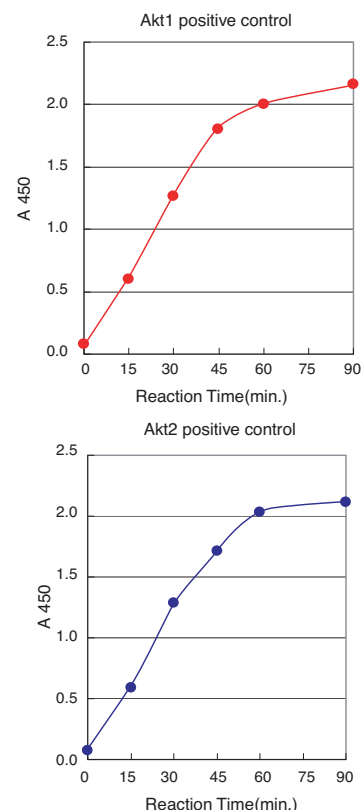
MBL International Corporation

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 carcinomas¹⁾.

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-3 α by Western blotting using a phospho-GSK-3 α (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 μ g
JM-3247-100	Anti-Akt/PKB Polyclonal Antibody	100 μ g
JM-3257-100	Anti-Phospho-Akt (Ser473) Polyclonal Antibody	100 μ g
JM-3516-100	Anti-Phospho-GSK3 α / β (Ser21/Ser9) Polyclonal Antibody	100 μ g
JM-1701-1	Akt Inhibitor	1 mg
JM-7003-100	GSK-3 α /GST Fusion Protein, Human Recombinant	100 μ g
JM-7036-1	Akt Activated Cell Lysate	1 mg
JM-7035-1	Akt Negative Control Cell Lysate	1 mg

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

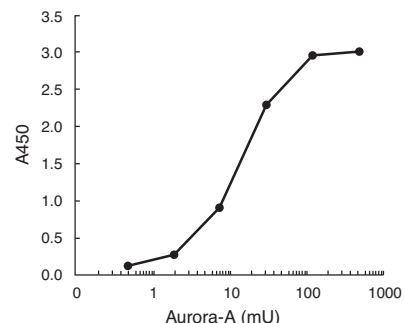
CycLex[®] Aurora A Kinase Assay/Inhibitor Screening Kit

CycLex[®] Aurora Family Kinase Assay/Inhibitor Screening Kit

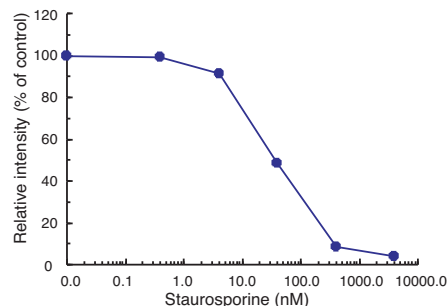
Aurora kinases regulate centrosome maturation, chromosome segregation, and cytokinesis. A-type Aurora kinases localize to both centrosomes and spindle microtubules and have been implicated in spindle assembly. The B-type Aurora kinases are present at centromeres in prophase and metaphase, before they 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 with clinically aggressive disease²⁾.

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

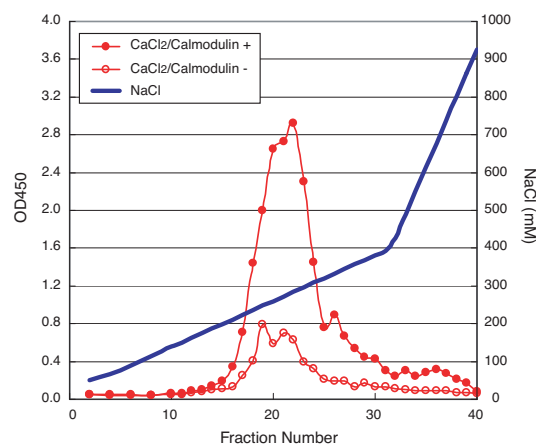
Related Products

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

Ca²⁺/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 memory³⁾. 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 activity 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

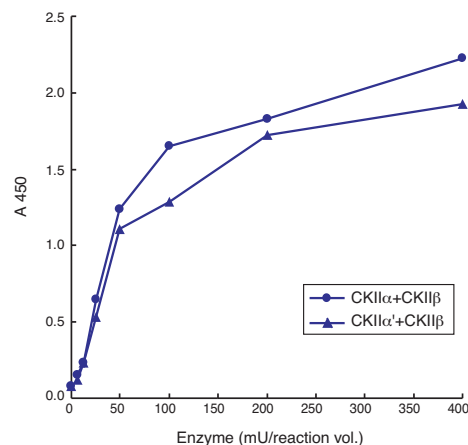
Related Products

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 potential⁴⁾. The enzyme is highly expressed in most cancers, and research suggests that CK2 dysregulation in tumors may influence their apoptotic activity⁵⁾. 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 more information and to order, go to www.mblintl.com

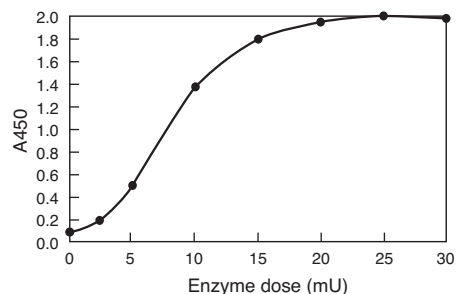
For research use only

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

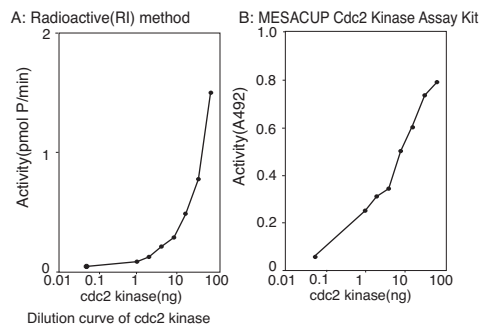
All transitions of the cell cycle are controlled through regulation of the cyclin-dependent kinases (Cdks). Cdc2 kinase, also known as Cdk1, associates with cyclin B to initiate the onset of mitosis. Cdc2 kinase and its homologues play an essential role in the regulation of the cell cycle and gene transcription.

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 antibody 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 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)



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

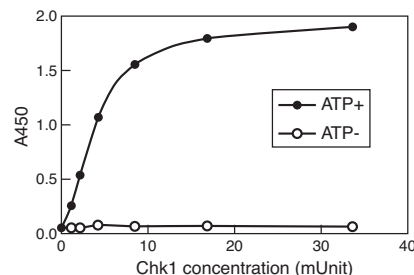
Related Products

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

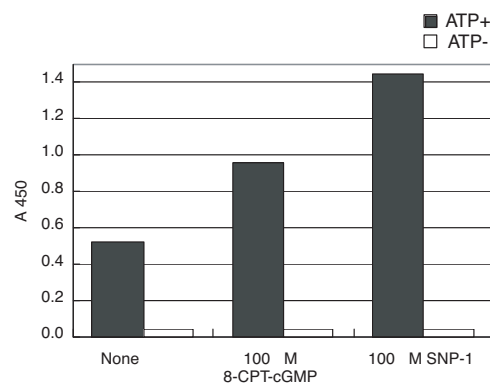
Code No.	Products	Quantity
CY-E1162-1	Chk1 Positive Control	2 units
CY-E1162-2	Chk2 Positive Control	2 units
CY-E1162-3	C-TAK1 Positive Control	2 units

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

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 diseases⁶⁾.

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

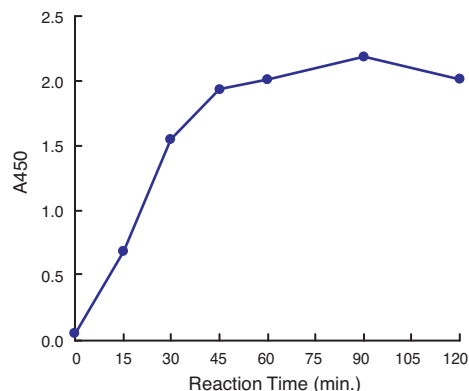
Code No.	Products	Quantity
JM-7001-100	c-Jun/GST Fusion Protein (1-79), Human Recombinant	100 µg
JM-3502-100	Anti-Phospho-c-Jun (Ser73) Polyclonal Antibody	100 µg
JM-3701-100	Anti-JNK Polyclonal Antibody	100 µg
JM-3589-100	Anti-Phospho-JNK/SAPK (Thr183/Tyr185) Polyclonal Antibody	100 µg
JM-7011-50	JNKI1 (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

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

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 macrophages⁷.

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

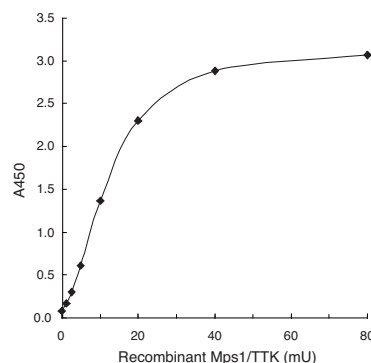
Related Products

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

CycLex[®] Mps1/TTK Kinase Assay/Inhibitor Screening Kit

Mps1 plays a role in cell cycle control; expression of human Mps1 is markedly reduced or absent in resting cells and tissues.

The **CycLex[®] Mps1/TTK Kinase Assay/Inhibitor Screening Kit** is designed to measure the activity of purified human Mps1/TTK for the rapid and sensitive evaluation of inhibitors or activators. The phospho-serine specific monoclonal antibody in this assay kit has been demonstrated to recognize the phospho-serine residue in recombinant human Mps1-substrate, which is phosphorylated by human Mps1/TTK.



Dose dependency of recombinant human Mps1 enzyme reaction measured using the CycLex[®] Mps1/TTK Kinase Assay kit (Code No. CY-1179)

Code No.	Products	Quantity
CY-1179	CycLex [®] Mps1/TTK Assay/Inhibitor Screening Kit	96 wells

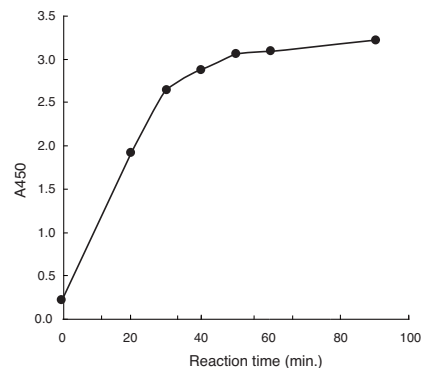
Related Products

Code No.	Products	Quantity
CY-E1179	Mps1/TTK Positive Control	200 assays

CycLex[®] p38 Assay/Inhibitor Screening Kit

The p38 α MAPK pathway is critical for inflammatory cytokine production and signaling.

The **CycLex[®] p38 Assay/Inhibitor Screening Kit** is designed to measure the activities of purified p38 (p38) for the rapid and sensitive evaluation of inhibitors using recombinant p38. The phospho-threonine specific polyclonal antibody used in this assay kit recognizes the phospho-threonine 71 residue in ATF2, which is efficiently phosphorylated by p38.



Time course of recombinant p38 enzyme reaction (4 m units in assay) as measured using the CycLex[®] p38 Assay kit (Code No. CY-1177)

Code No.	Products	Quantity
CY-1177	CycLex [®] p38 Assay/Inhibitor Screening Kit	96 wells

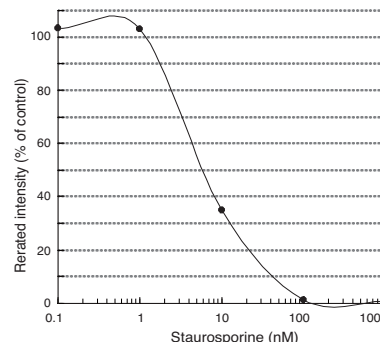
Related Products

Code No.	Products	Quantity
CY-E1177	p38 Positive Control	200 assays

CycLex[®] PDK1 Assay/Inhibitor Screening Kit

The PDK1/Akt signaling pathway plays a key role in cancer cell growth, survival, and tumor angiogenesis.

The **CycLex[®] PDK1 Assay/Inhibitor Screening Kit** is designed to measure the activities of purified PDK1 for the rapid and sensitive evaluation of inhibitors using recombinant PDK1. The phospho-threonine specific polyclonal antibody used in this assay kit has been demonstrated to recognize the phospho-threonine 308 in AKT1, which is efficiently phosphorylated by PDK1.



Effect of broad-spectrum kinase inhibitor staurosporine on PDK1 activity measured using the CycLex[®] PDK1 Inhibitor Screening kit (Code No. CY-1180)

Code No.	Products	Quantity
CY-1180	CycLex [®] PDK1 Assay/Inhibitor Screening Kit	96 wells

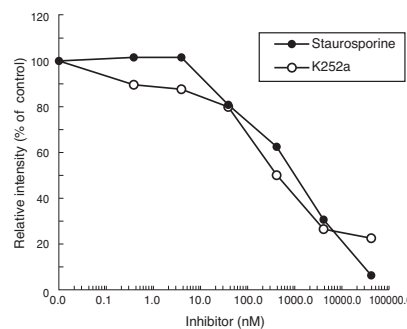
Related Products

Code No.	Products	Quantity
CY-E1180	PDK1 Positive Control	200 assays

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[®].

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

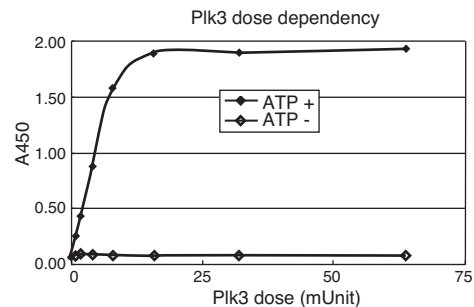
Code No.	Products	Quantity
CY-E1163	Plk1 Positive Control	2 units

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

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 carcinomas⁹. 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)

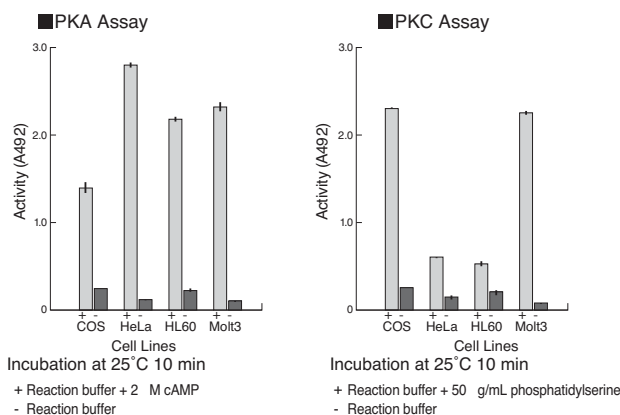
Code No.	Products	Quantity
CY-1176	CycLex [®] Polo-like kinase-3 (PLK-3) Assay/Inhibitor Screening Kit	96 wells

Related Products

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

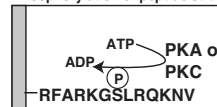
MESACUP[®] PKA/PKC Protein Kinase Assay Kit

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 excels in detecting the effects of pharmacological agents on PKA/PKC.



Assay Procedure

Phosphorylation of peptide substrate



Biotinylated antibody reaction



Streptavidin-peroxidase reaction



Development



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

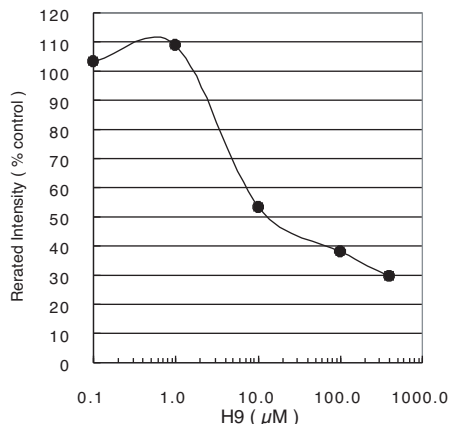
Related Products

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

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 subfamilies¹⁰. Members of the Ca²⁺-dependent subfamily (conventional PKCs), include PKC α , PKC β I and β II, and PKC γ . Members of the second subfamily (novel PKCs) can bind acidic phospholipids but are Ca²⁺-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.



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	0.1 mg

Conventional PKC	
PKC α	+
PKC β I	+
PKC β II	+
PKC γ	+
Novel 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)

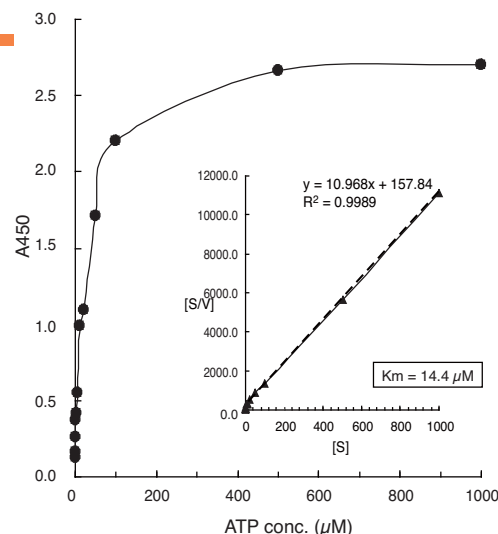
CycLex[®] Raf kinase Assay/Inhibitor Screening Kit

The B-RAF gene has recently been reported to have somatic mutations in 66% of malignant melanomas, as well as being implicated in many other human malignancies. The **CycLex[®] Raf kinase Assay/Inhibitor Screening Kit** is designed to measure the activities of purified Raf-1, A-Raf or B-Raf for the rapid and sensitive evaluation of inhibitors using recombinant Raf kinases. The phospho-threonine specific polyclonal antibody used in this assay kit has been demonstrated to recognize the phospho-threonine residue in a specific Raf-substrate that is efficiently phosphorylated by Raf kinases.

Code No.	Products	Quantity
CY-1171	CycLex [®] Raf kinase Assay/Inhibitor Screening Kit	96 wells

Related Products

Code No.	Products	Quantity
CY-E1171-1	B-Raf Positive Control	200 assays



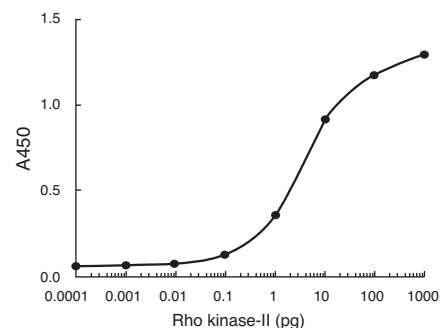
Km for ATP (recombinant B-Raf), measured using the CycLex[®] Raf Kinase Assay Kit (Code No. CY-1171).

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

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 patients¹¹⁾.

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

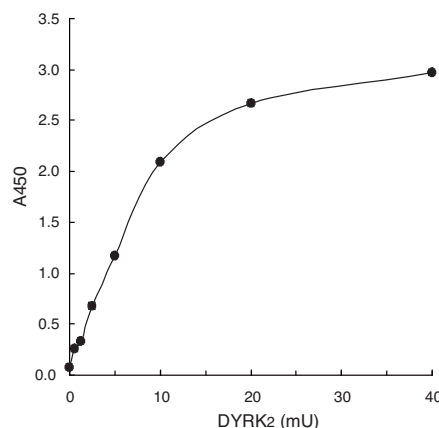
Related Products

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[®] DYRK2 Kinase Assay/Inhibitor Screening Kit

DYRK2 regulates p53 to induce apoptosis in response to DNA damage. The **CycLex[®] DYRK2 Kinase Assay/Inhibitor Screening Kit** is designed to measure the activities of purified DYRK2 for the rapid and sensitive evaluation of inhibitors or activators. The phospho-serine specific monoclonal antibody used in this assay kit has been demonstrated to recognize the phospho-serine 46 residue in p53, which is phosphorylated by DYRK2 in vitro.



Dose dependency of recombinant DYRK2 enzyme reaction, measured using the CycLex[®] DYRK2 Kinase Assay/Inhibitor Screening Kit (Code No. CY-1181).

Code No.	Products	Quantity
CY-1181	CycLex [®] DYRK2 Kinase Assay/Inhibitor Screening Kit	96 wells

Related Products

Code No.	Products	Quantity
CY-E1181	DYRK2 Positive Control	200 assays

