

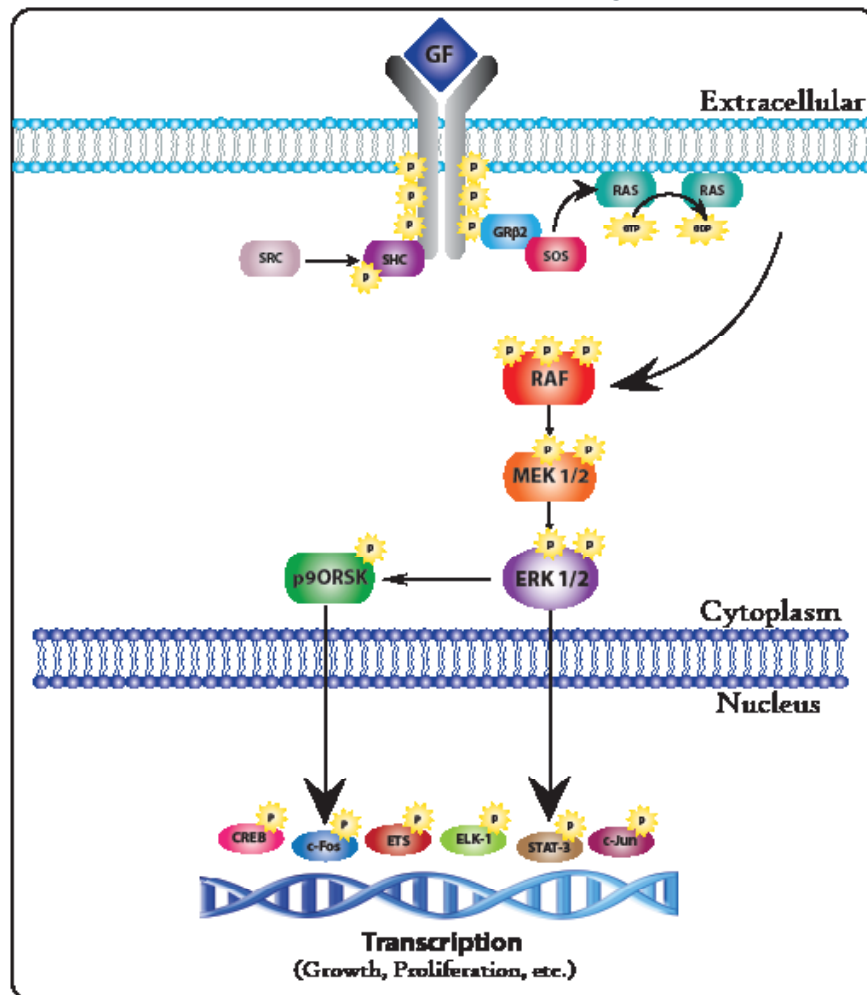
MAPK Pathway

Mitogen-activated protein kinases (MAPK) are proteins that are serine/ threonine specific kinases which are activated by a wide range of stimuli including proinflammatory cytokines, growth factors, mitogens, osmotic stress, heat shock etc. These proteins function in a signaling cascade are activated upon ligand binding to a cell surface receptor activating several MAP/ER kinases, which in turn phosphorylate their respective substrates. These events thereby regulate various cellular activities, such as gene expression, mitosis, differentiation, proliferation, and cell survival/apoptosis.

Upon the extracellular mitogen binding to the ligand, Ras a GTPase exchanges GDP for GTP. This in turn initializes a cascade activating MAP3K (Raf) which in turn activates MAP2K which activates MAPK. This MAPK can activate a number of transcription factors which control key processes in the cell.

For example epidermal growth factor (EGF) binds the EGFR which activates the tyrosine kinase activity of the EGFR (receptor). Grb2 and SH2 domain containing proteins recognize phosphorylated residues along with a guanine nucleotide exchange factor SOS, and binds to the EGFR. GDP is then swapped for GTP which binds Ras to make it active. Ras activates Raf which can phosphorylate and activate MEK1 and MEK2 which in turn activate MAPK. MAPK regulates a number of transcription factors including c-myc, CREB, C-Fos etc. All these regulate expression of a number of genes involved in apoptosis, differentiation, cancer etc. Defects in the regulation of this pathway can lead to uncontrolled growth in cells, leading to cancer. Over the last decade, important advances have been made in developing novel agents that modulate key proteins in this pathway culminating in the approval by the FDA of Sorafenib (Nexavar®) for the treatment of advanced renal carcinoma. Therapeutic advances in this area should continue for many years to come.

MAPK Pathway



155 S. Milipitas Blvd, Milipitas, CA 95035

T: 408-493-1800 F: 408-493-1801

Toll Free: 800-891-9699 (US Only)

Antibodies

Product Name	Cat. No.	Size
ASK1/MAPKKK5 Antibody	3128	100 µg
cdc/Rac Blocking Peptide	3080BP	50 µg
cdc42/Rac Antibody	3080	30 µg, 100 µg
c-Jun antibody	3009	30 µg, 100 µg
c-Jun Antibody	3702	100 µg
Erk1/2 MAPK Antibody	3085	100 µg
Erk2 Antibody	3442	100 µg
Erk5 Antibody	3397	100 µg
IL-1 alpha Antibody	5125	30 µg, 100 µg
IL-1 beta Antibody	5128	30 µg, 100 µg
IL-1 beta Antibody	5129	30 µg, 100 µg
IRAK-4 Antibody	3580	100 µg
JIK Antibody	3784	100 µl
JIP-1 Antibody	3664	30 µg, 100 µg
JNK Antibody	3701	30 µg, 100 µg
MAPKAPK-2 Antibody	3100	30 µg, 100 µg
MAPKAPK-2 Blocking Peptide	3100BP	50 µg
Mek1 Antibody	3196	100 µg
Mek1/2 Antibody	3518	100 µl
MKK3 Antibody	3285	100 µg
MLK3 Antibody	3430	100 µg
NIK Antibody	3193R	30 µg, 100 µg
p38 MAP Kinase Antibody	3114	30 µg, 100 µg
p38 MAP Kinase Blocking Peptide	3114BP	50 µg
p42/44 MAPK Antibody	3542	100 µg
p70 S6 Kinase Antibody	3485	100 µg
PAK1 Antibody	3248	100 µg
PAK2 Antibody	3443	30 µg, 100 µg
PAK2 Blocking Peptide	3443BP	50 µg
PAK3 Antibody	3686	30 µg, 100 µg
PAK3 Blocking Peptide	3686BP	50 µg
PAK4 Antibody	3444	30 µg, 100 µg
PAK4 Blocking Peptide	3444BP	50 µg
PAK5/PAK7 Antibody	3928	30 µg, 100 µg
PAK5/PAK7 Blocking Peptide	3928-BP50	50 µg
PAK6 Antibody	3927	30 µg, 100 µg
PAK6 Blocking Peptide	3927BP	50 µg
PDGF-BB Antibody	5488	30 µg, 200 µg
PDGF-BB Antibody	5489	30 µg, 100 µg
Phospho-c-Jun (Ser73) Antibody	3502	100 µg
Phospho-Elk-1 Antibody	3388	100 µg

Antibodies

Product Name	Cat. No.	Size
Phospho-Erk1/2 Antibody	3441	100 µg
Phospho-JKK1/SEK1/MKK4 Antibody	3478	100 µg
Phospho-JNK/SAPK Antibody	3589	100 µg
Phospho-MAPKAPK-2 Antibody	3434	100 µg
Phospho-Mek1/2 Antibody	3519	100 µl
Phospho-MSK1 Antibody	3278	100 µg
Phospho-p38 MAPK Antibody	3438	100 µg
Phospho-p70 S6 Kinase Antibody	3505	100 µg
Phospho-Raf Antibody	3504	100 µg
Raf1 Antibody	3116	30 µg, 100 µg
RIP Antibody	3279	30 µg, 100 µg
RSK2 Antibody	3546	100 µg
SPHKAP Antibody	6656	30 µg, 100 µg
TAB1 Antibody	3682	100 µg
TANK Polyclonal Antibody	3348	30 µg, 100 µg
TAOK1 Antibody	3776	100 µl
TAOK1 Antibody	3776R	30 µg, 100 µg
TNF-alpha Antibody	3053R	30 µg, 100 µg
TNF-beta Antibody	5345	100 µg
TRAF6 Antibody	3566R	30 µg, 100 µg

Enzymes

Product Name	Cat. No.	Size
ASK1, Active	7710	5 µg
CD40Ligand/TRAP, human recombinant	4014	10 µg, 50 µg, 1 mg
CD40Ligand/TRAP, murine recombinant	4015	25 µg, 100 µg, 500 µg, 1 mg
c-Jun (1-79)-GST Fusion Protein	7001	100 µg
ERK1, Active	7741	5 µg
IGF-I, human recombinant	4119	100 µg, 1 mg, 5 mg, 10 mg, 20 mg, 50 mg, 1 g
IL-1 alpha, human recombinant	4125	10 µg, 50 µg, 1 mg
IL-1 alpha, murine recombinant	4126	10 µg, 50 µg, 1 mg
IL-1 alpha, rat recombinant	4127	10 µg, 1 mg
IL-1 beta, human recombinant	4128	10 µg, 50 µg, 1 mg
IL-1 beta, rat recombinant	4130	10 µg, 50 µg, 1 mg
MAPKAPK2, Active	7737	5 µg
MAPKAPK3, Active	7755	5 µg
NGF-beta, human recombinant	4303	20 µg, 1 mg
NGF-beta, human recombinant	4303R	20 µg, 100 µg, 1 mg
NGF-beta, murine recombinant	4304	5 µg, 20 µg, 100 µg, 1 mg
p38alpha, Active	7756	5 µg
p38beta, Active	7763	5 µg, 100 µg

Enzymes

Product Name	Cat. No.	Size
P38delta, Active	7754	5 µg
PAK4, Active	7707	5 µg
PAK7, Active	7727	5 µg
PDGF-AA, human recombinant	4482	10 µg, 50 µg, 1 mg
PDGF-AA, murine recombinant	4483	10 µg, 1 mg
PDGF-AB, human recombinant	4485	10 µg, 50 µg, 1 mg
PDGF-BB, human recombinant	4488	10 µg, 50 µg, 1 mg
PDGF-BB, murine recombinant	4489	10 µg, 50 µg, 1 mg
PDGFR beta, Active	7770	5 µg
RAF1, Active	7726	5 µg, 100 µg
RSK1, Active	7721	5 µg
RSK2, Active	7768	5 µg
RSK3, Active	7774	5 µg
TNF-alpha, human recombinant	1050	10 µg, 50 µg, 1 mg
TNF-alpha, murine recombinant	1051	10 µg, 50 µg, 1 mg
TNF-alpha, rat recombinant	1052	10 µg, 50 µg, 1 mg
TNF-beta, human recombinant	4345	20 µg, 1 mg

Chemical Activators

Product Name	Cat. No.	Size	CAS Number
Anisomycin	1549-10	10 mg	22862-76-6

MAP Kinase/MEK Inhibitors

Product Name	Cat. No.	Size	CAS Number
7,3',4'-Trihydroxyisoflavone	1886	25 mg, 100 mg	485-63-2
BIX02189	2670	1 mg, 5 mg	1094614-85-3
Doramapimod	1954	5 mg, 25 mg	285983-48-4
GSK-1120212	1960	1 mg, 5 mg	871700-17-3
GSK-2118436 mesylate	2800	5 mg, 25 mg	1195768-06-9
PathwayReady™ MAP Kinase Signaling Inhibitor Panel	K862	7 inhibitors	Multiple Inhibitors
PD 98059	1666	5 mg	167869-21-8
EZSolution™ PD 98059	1783	5 mg	167869-21-8
PD-0325901	1643	2 mg, 5 mg, 25 mg	391210-10-9
EZSolution™ PD-0325901, Sterile-Filtered	1990	1 ml	391210-10-9
PD184352	1585	1 mg, 5 mg, 25 mg	212631-79-3
EZSolution™ PD184352	1871	1 mg	212631-79-3
SB 202190	2493	5 mg, 25 mg	152121-30-7
SB 203580	1712	1 mg, 5 mg	152121-47-6
EZSolution™ SB 203580	1786	1 mg	152121-47-6
Skepinone-L	B1110	1 mg, 5 mg	1221485-83-1

MAP Kinase/MEK Inhibitors

Product Name	Cat. No.	Size	CAS Number
SKF-86002	2894	5 mg, 25 mg	72873-74-6
Sorafenib	1594	25 mg, 100 mg	475207-59-1
TAK-733	2460	5 mg, 25 mg	1035555-63-5
U0126	1668	5 mg	109511-58-2
VX-702	1598	1 mg, 5 mg	745833-23-2
ZM 336372	1789	1 mg, 5 mg	208260-29-1