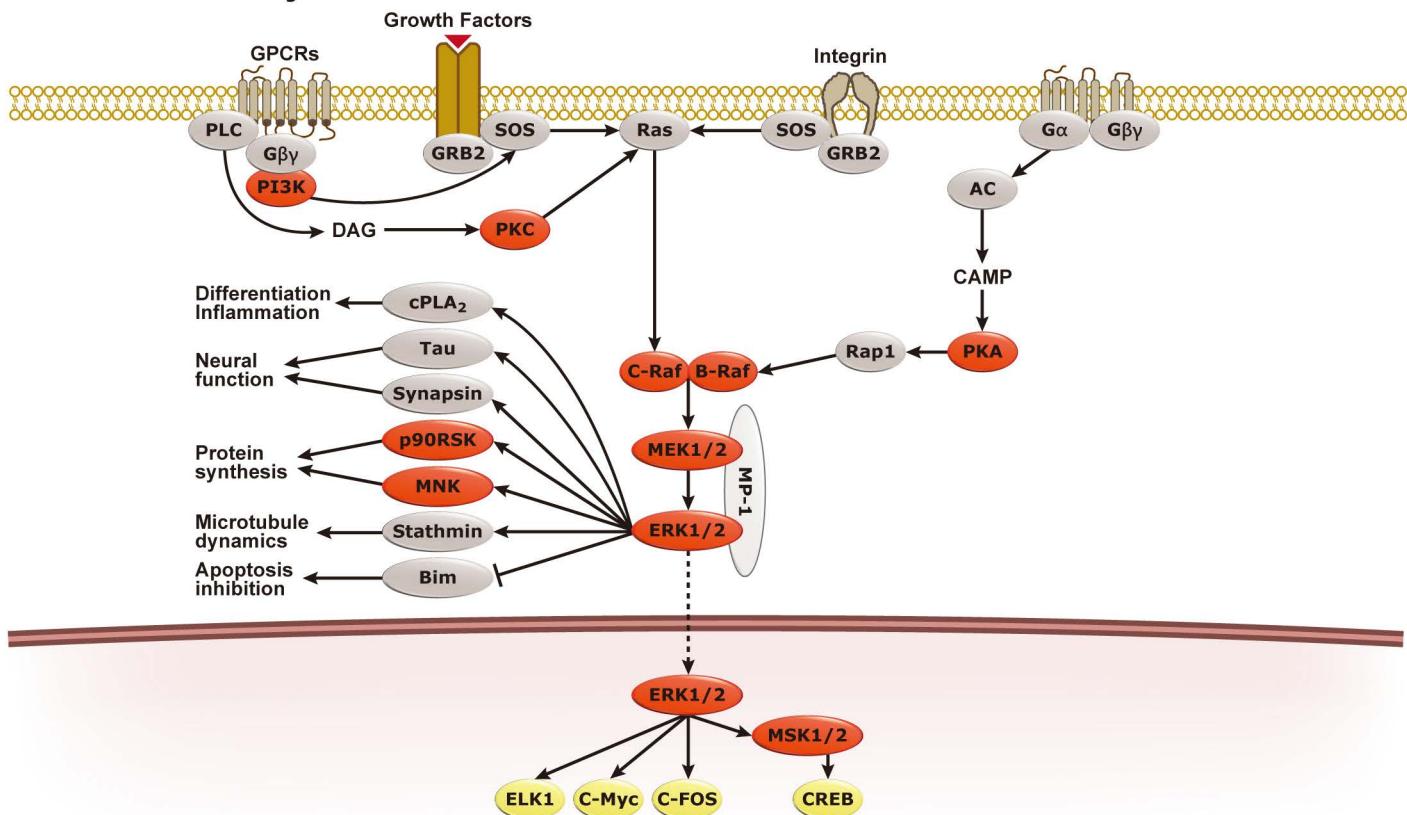


MAPK Pathway

ERK Pathway



ERK Pathway

■ Kinase ■ Transcription Factor -----> Translocation

The extracellular signal-regulated kinase (ERK) pathway represents one of four mammalian mitogen-activated protein kinase (MAPK) systems responsible for reacting to various extracellular stimuli. While at least two of the other pathways respond primarily to various extracellular stress signals, ERK activation is predominately triggered by growth factors. These extracellular signals are transduced largely by tyrosine kinase receptor complexes that subsequently stimulate Ras to activate Raf, leading to MEK1/2 and then ERK1/2 activity. The ERK pathway is crucial for normal cellular proliferation, differentiation, and survival, with abnormal stimulation linked to human carcinogenesis.

ERK1/2 (p44/p42 MAPK)

	Cat. No.	Product name	Host & Clonality	Reactivity	Application
ERK1	GTX102769	ERK1 antibody	Rb pAb	Hu, Ms	IHC-P, WB
	GTX27947	ERK1 antibody	Rb pAb	Hu, Ms, Rat	IHC, IP, WB
	GTX82557	ERK1 antibody [E19]	Ms mAb	Hu	IP, WB
	GTX82558	ERK1 antibody [E32]	Ms mAb	Hu, Ms	IP, WB

ERK1/2 (p44/p42 MAPK)

Phospho Citation

	Cat. No.	Product name	Host & Clonality	Reactivity	Application
ERK2	GTX113094	ERK2 antibody	Rb pAb	Hu, Ms, Rat	IHC-P, WB
	GTX15282	ERK2 antibody	Rb pAb	Hu, Ms, Rat	IHC-P, IP, WB
	GTX83148	ERK2 antibody [4C11]	Ms mAb	Hu, Ms, Mk	ELISA, ICC/IF, IHC
ERK1/2	GTX59618	ERK1/2 antibody	Rb pAb	Hu, Ms, Ch, Rat, Sh	ICC/IF, IP, WB
	GTX83006	ERK1/2 antibody [3F8]	Ms mAb	Hu, Ms	ELISA, FACS, WB
	GTX50274	ERK1/2 (phospho Thr202) antibody	Rb pAb	Hu, Ms, Rat	ICC/IF, IHC, WB
	GTX50275	ERK1/2 (phospho Tyr204) antibody	Rb pAb	Hu, Ms, Rat	ICC/IF, IHC, WB
	GTX24819	ERK1/2 (phospho Thr185/Thr202/ Tyr204/Tyr187) antibody	Rb pAb	Hu	WB

Substrates of ERK1/2

Phospho

	Cat. No.	Product name	Host & Clonality	Reactivity	Application
Bim	GTX50308	Bim (phospho Ser69) antibody	Rb pAb	Hu, Ms, Rat	ICC/IF, IHC-P
c-Myc	GTX10568	c-Myc (phospho Thr58/Ser62) antibody	Rb pAb	Hu, Ms	IHC-Fr, IP, WB
ELK1	GTX50092	ELK1 (phospho Ser383) antibody	Rb pAb	Hu, Ms, Rat	IHC, WB
	GTX50688	ELK1 (phospho Ser389) antibody	Rb pAb	Hu	IHC, WB
MNK1	GTX62808	MNK1 (phospho Thr385) antibody [EPR2370]	Rb mAb	Hu	ICC/IF, IHC-P, WB
MSK1	GTX61741	MSK1 (phospho Ser360) antibody [EP1888Y]	Rb mAb	Hu, Ms, Rat	ICC/IF, IP, WB
	GTX22562	MSK1 (phospho Thr581) antibody	Rb pAb	Hu, Ms	WB
STAT1	GTX50217	STAT1 (phospho Ser727) antibody	Rb pAb	Hu, Ms, Rat	ICC/IF, IHC, WB
Stathmin 1	GTX50260	Stathmin 1 (phospho Ser25) antibody	Rb pAb	Hu, Ms, Rat	IHC, WB
	GTX50261	Stathmin 1 (phospho Ser38) antibody	Rb pAb	Hu, Ms, Rat	IHC, WB
Synapsin	GTX82591	Synapsin (phospho Ser62,67) antibody	Rb pAb	Rat	WB
	GTX82590	Synapsin (phospho Ser549) antibody	Rb pAb	Rat	IHC, WB

MEK1/2

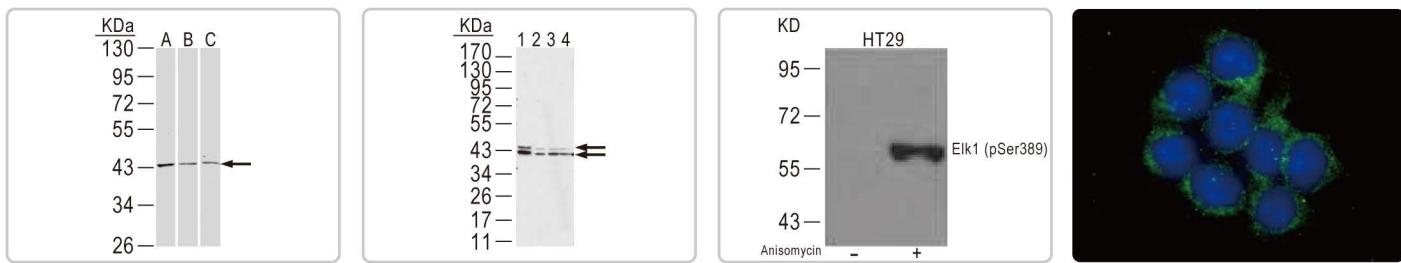
Phospho Citation

	Cat. No.	Product name	Host & Clonality	Reactivity	Application
MEK1	GTX102391	MEK1 antibody	Rb pAb	Hu, Ms	ICC/IF, WB
	GTX50509	MEK1 antibody	Rb pAb	Hu, Ms, Rat	IHC, WB
	GTX84168	MEK1 antibody [1C1]	Ms mAb	Hu	ICC/IF, IHC, WB
	GTX79015	MEK1 (phospho Ser217) antibody	Rb pAb	Hu, Ms, Rat	IHC
	GTX50216	MEK1 (phospho Ser221) antibody	Rb pAb	Hu, Ms, Rat	ICC/IF, IHC, WB
	GTX50313	MEK1 (phospho Thr291) antibody	Rb pAb	Hu, Ms, Rat	WB
	GTX82657	MEK1 (phospho Thr292) antibody	Rb pAb	Hu	WB
	GTX25613	MEK1 (phospho Ser298) antibody	Rb pAb	Hu, Ms, Rat	WB
MEK2	GTX25615	MEK1 (phospho Thr386) antibody	Rb pAb	Hu, Ms, Rat	WB
	GTX111338	MEK2 antibody	Rb pAb	Hu, Ms, Rat	ICC/IF, IHC-P, WB
	GTX50369	MEK2 antibody	Rb pAb	Hu, Ms, Rat	IHC, WB
	GTX83358	MEK2 antibody [7F5]	Ms mAb	Hu, Ms, Rat	ELISA, FACS, ICC/IF
MEK1/2	GTX50096	MEK2 (phospho Thr394) antibody	Rb pAb	Hu, Ms, Rat	ICC/IF, IHC, WB
	GTX50532	MEK1/2 antibody	Rb pAb	Hu, Ms, Rat	ICC/IF, IHC, WB
	GTX59582	MEK1/2 (phospho Ser217/Ser221) antibody	Rb pAb	Hu, Ms, Rat	ICC/IF, WB

Raf & Mos

Phospho

	Cat. No.	Product name	Host & Clonality	Reactivity	Application
c-Raf / Raf1	GTX111588	Raf1 antibody	Rb pAb	Hu	ICC/IF, IHC-P, WB
	GTX50367	Raf1 antibody	Rb pAb	Hu, Ms, Rat	IHC, WB
	GTX20656	Raf1 antibody [410]	Ms mAb	Hu	ELISA, WB
	GTX30714	Raf1 (phospho Ser43) antibody	Rb pAb	Hu	Dot, ELISA
	GTX78955	Raf1 (phospho Ser259) antibody	Rb pAb	Hu, Ms, Rat	IHC, WB
	GTX82602	Raf1 (phospho Ser301) antibody	Rb pAb	Rat	WB
	GTX50246	Raf1 (phospho Ser338) antibody	Rb pAb	Hu, Ms	WB
	GTX24767	Raf1 (phospho Ser621) antibody	Rb pAb	Hu, Ms, Rat	WB
B-Raf	GTX100913	B-Raf antibody	Rb pAb	Hu	WB
	GTX83134	B-Raf antibody [1H12]	Ms mAb	Hu, Ms	ELISA, ICC/IF, IHC
	GTX61882	B-Raf (phospho Thr401) antibody [EPR2208Y]	Rb mAb	Hu, Ms, Rat	ICC/IF, IP, WB
	GTX85596	B-Raf (phospho Thr598/Ser601) antibody	Rb pAb	Hu	ICC/IF, IHC-P
Mos	GTX87858	Mos antibody	Rb pAb	Hu	ELISA, WB



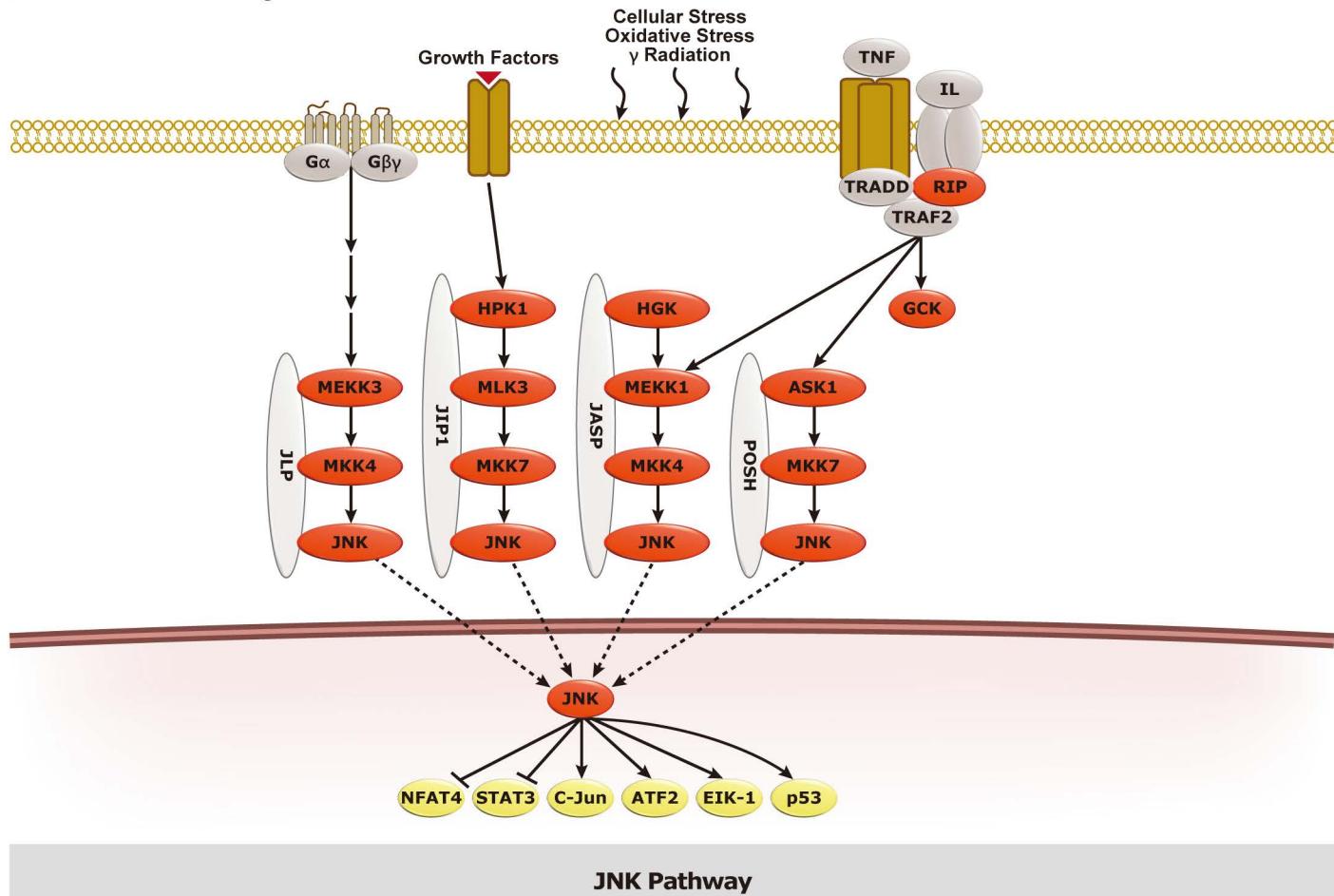
ERK1 antibody (GTX102769):
WB analysis of (A) A431, (B) HepG2, and (C) Molt-4 cell lysates.

ERK1/2 antibody [3F8] (GTX83006):
WB analysis of (1) Jurkat, (2) HeLa, (3) A431, and (4) NIH3T3 cell lysates.

Elk1 (phospho Ser389) antibody (GTX50688):
WB analysis of HT29 cells untreated or treated with Anisomycin.

MEK2 antibody (GTX111338):
ICC/IF analysis of methanol-fixed HCT116 cells.

JNK Pathway



JNK Pathway

■ Kinase ■ Transcription Factor -----> Translocation

The c-Jun-N-terminal kinase (JNK) pathway is one of four major mitogen-activated protein kinase (MAPK) pathways in mammals. Receptor-initiated signals generated by cell exposure to stress, cytokines, pathogens, toxins, or drugs activate the JNK pathway through MAP4Ks and the three-level (MAP3K / MAP2K / MAPK) kinase backbone that culminates in activation of the MAPK JNKs. Activated JNKs target at least 50 substrates including transcription factors and mitochondrial proteins. Regulation of these substrates by the JNKs directly impacts pivotal cellular processes involving cell fate, inflammation, metabolism, and carcinogenesis.

JNks

● Phospho ○ Citation

	Cat. No.	Product name	Host & Clonality	Reactivity	Application
JNK1	GTX101165	JNK1 antibody	Rb pAb	Hu, Ms	ICC/IF, WB
	GTX27949	JNK1 antibody	Rb pAb	Hu, Ms, Rat	IHC, IP, WB
	GTX84143	JNK1 antibody [1C2]	Ms mAb	Hu, Ms	ICC/IF, WB
	GTX18680	JNK1 (phospho Thr183/Tyr185) antibody	Rb pAb	Hu, Ms, Rat	WB
JNK2	GTX105523	JNK2 antibody	Rb pAb	Hu	ICC/IF, IHC-P, WB
	GTX107477	JNK2 antibody	Rb pAb	Hu	ICC/IF, IHC-P, WB
	GTX19337	JNK2 antibody [341P16]	Ms mAb	Hu, Ms, Rat	ELISA, WB

JNKs

	Cat. No.	Product name	Host & Clonality	Reactivity	Application
JNK3	GTX103148	JNK3 antibody	Rb pAb	Hu	IHC-P, WB
	GTX83031	JNK3 antibody [10E4A4]	Ms mAb	Hu, Ms	ELISA, ICC/IF
JNK1/2	P GTX50868	JNK1/2 (phospho Thr183/Tyr185) antibody	Rb pAb	Hu, Ms, Rat	ICC/IF, WB
	C P GTX79029	JNK1/2 (phospho Thr183/Tyr185) antibody	Rb pAb	Hu, Ms, Rat	ICC/IF, WB

Substrates of JNKs

	Cat. No.	Product name	Host & Clonality	Reactivity	Application
ATF2	P GTX24736	ATF2 (phospho Thr71) antibody	Rb pAb	Hu, Ms, Rat, XI	WB
c-Jun	P GTX61170	c-Jun (phospho Ser63) antibody [Y172]	Rb mAb	Hu, Ms, Rat	ICC/IF, IHC-P, IP, WB
	P GTX50091	c-Jun (phospho Ser73) antibody	Rb pAb	Hu, Ms, Rat	IHC, WB
ELK1	P GTX50092	ELK1 (phospho Ser383) antibody	Rb pAb	Hu, Ms, Rat	IHC, WB
	P GTX82701	ELK1 (phospho Ser383) antibody	Rb pAb	Rat	WB
STAT3	P GTX50120	STAT3 (phospho Ser727) antibody	Rb pAb	Hu, Ms, Rat	ICC/IF, IHC, WB
	P GTX39086	STAT3 (phospho Ser727) antibody [23G5]	Ms mAb	Hu	WB, ELISA, IHC

MKK4/7

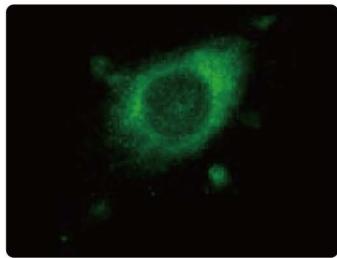
	Cat. No.	Product name	Host & Clonality	Reactivity	Application
MKK4 / SEK1	GTX50475	MKK4 antibody	Rb pAb	Hu, Ms, Rat	ICC/IF, IHC-P
	GTX83078	MKK4 antibody [2D10D8,4G11B2,2D10C4,2D10C3]	Ms mAb	Hu	ELISA, IHC
	P GTX50227	MKK4 (phospho Ser80) antibody	Rb pAb	Hu, Ms, Rat	ICC/IF, IHC, WB
	P GTX50226	MKK4 (phospho Thr261) antibody	Rb pAb	Hu, Ms, Rat	ICC/IF, IHC-P
MKK7	P GTX24760	MKK4 (phospho Ser257/Thr261) antibody	Rb pAb	Hu, Ms, XI	WB
	P GTX37360	MKK7 antibody	Rb pAb	Hu, Ms, Rat	ELISA, IHC-P, WB
	P GTX24762	MKK7 (phospho Ser271/Thr275) antibody	Rb pAb	Hu, Ms	WB

MEKK1/2/3 & MLKs

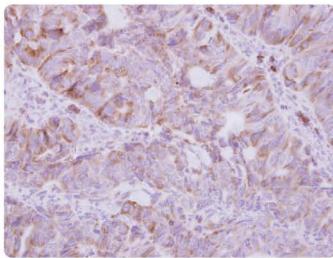
	Cat. No.	Product name	Host & Clonality	Reactivity	Application
MKK4 / SEK1	GTX46204	MEKK1 antibody	Rb pAb	Hu, Ms, Rat	WB
	GTX38513	MEKK1 antibody	Ms mAb	Hu	ICC/IF, IHC-P, WB
MKK4 / SEK1	GTX61292	MEKK2 antibody [EP626Y]	Rb mAb	Hu, Ms, Rat	FACS, ICC/IF, IHC-P, IP, WB
	GTX61301	MEKK3 antibody [EP599Y]	Rb mAb	Hu, Ms, Rat	FACS, ICC/IF, IHC-P, IP, WB
MKK4 / SEK1	GTX78129	MLK1 antibody	Rb pAb	Hu	IHC-P
	GTX86985	MLK2 antibody	Rb pAb	Hu, Ms	ELISA, IHC
	GTX61594	MLK3 antibody [EP1460Y]	Rb pAb	Hu, Ms	FACS, ICC/IF, WB

HGK & HPK1

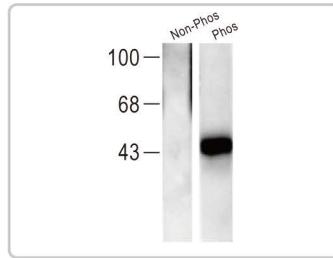
	Cat. No.	Product name	Host & Clonality	Reactivity	Application
HGK	GTX116008	HGK antibody	Rb pAb	Hu	ICC/IF, IHC-P, WB
	GTX83190	HGK antibody [4H9E7]	Ms mAb	Hu	ELISA, WB-Ag
HPK1	GTX104708	HPK antibody	Rb pAb	Hu	IHC-P, WB
	GTX22646	HPK1 antibody	Gt pAb	Hu, Ms, Cow, Dog, Rat	ELISA, WB



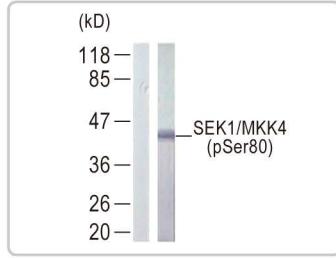
JNK2 antibody (GTX107477):
ICC/IF analysis of PFA-fixed HeLa cells.



JNK3 antibody (GTX103148):
IHC-P analysis of colon cancer.

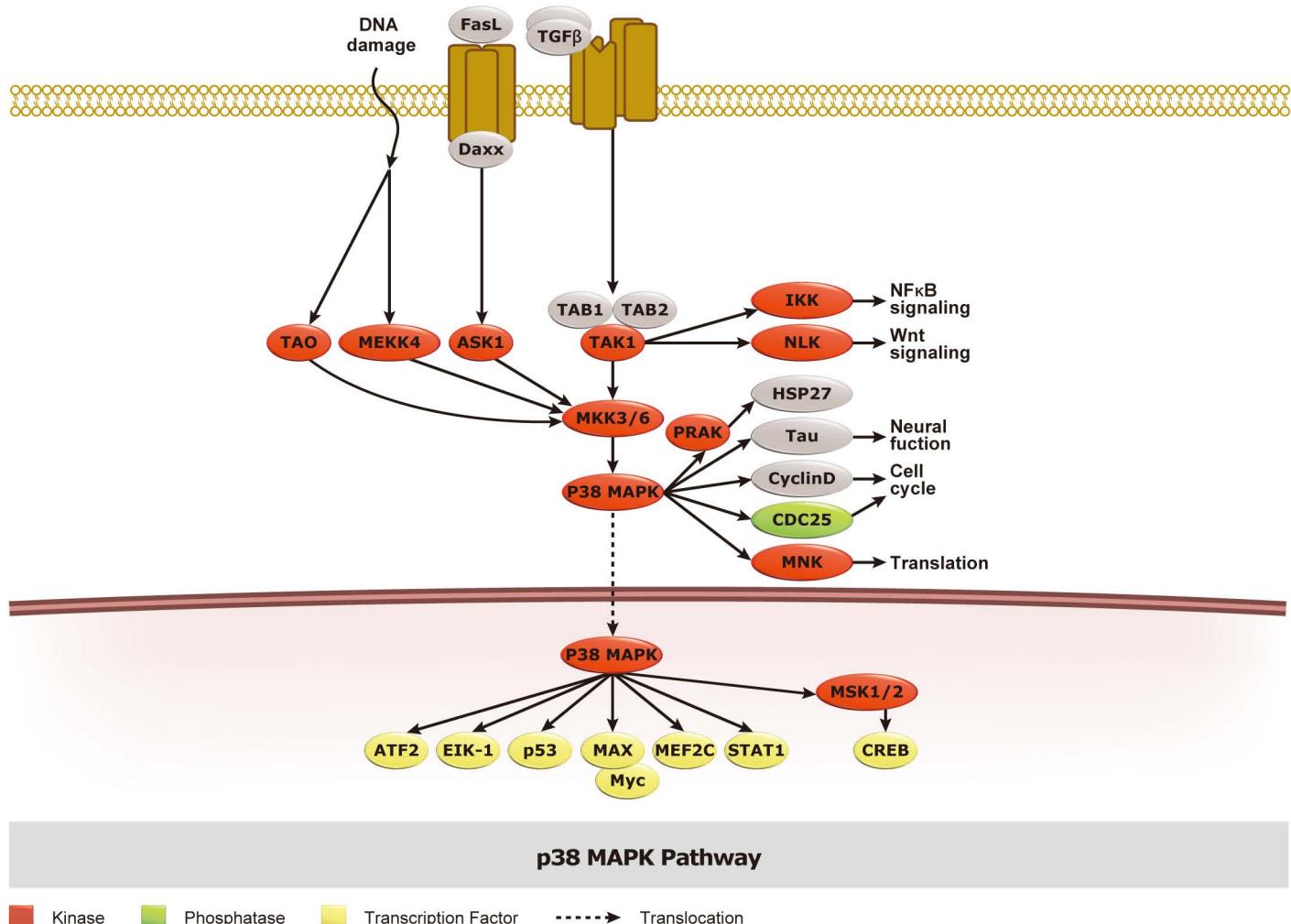


ELK1 (phospho Ser383) antibody (GTX82701):
WB analysis of non-phospho- and phospho- recombinant ELK1 proteins.



MKK4 (phospho Ser80) antibody (GTX50227):
WB analysis of HepG2 cells untreated or treated with EGF.

p38 MAPK Pathway



p38 MAPK Pathway

The p38 MAPK pathway is one of four MAPK systems in mammals that mediate cellular responses to external stimuli including stress and cytokines, among many others. The p38 MAPKs (α , β , γ , and δ), which are situated at the end of the canonical three-tier kinase cascade that is characteristic of these MAPK pathways, are intimately involved in fundamental cellular processes such as proliferation, differentiation, apoptosis, and metabolism. They also appear to be central players in many clinically important conditions, including autoimmunity, neurodegenerative disease, and cardiac ischemia.

p38 MAPKs

Phospho Citation

	Cat. No.	Product name	Host & Clonality	Reactivity	Application
p38α	GTX103009	p38 antibody	Rb pAb	Hu, Ms	ICC/IF, WB
	GTX27952	p38 antibody	Rb pAb	Hu, Ms, Rat	IHC, IP, WB
	GTX19443	p38 antibody [C1.7]	Ms mAb	Hu	FACS, Mct
	GTX50280	p38 MAPK (phospho Thr180) antibody	Rb pAb	Hu, Ms, Rat	IHC, WB
	GTX50281	p38 MAPK (phospho Tyr182) antibody	Rb pAb	Hu, Ms, Rat	IHC, WB
	GTX59567	p38 MAPK (phospho Thr180/Tyr182) antibody	Rb pAb	Hu, Ms, Rat	IHC, IP, WB
p38β	GTX48614	p38 MAPK (phospho Thr180/Tyr182) antibody	Rb pAb	Hu	WB
	GTX13864	p38β antibody	Rb pAb	Hu, Ms	WB
p38γ / ERK6	GTX84149	p38β antibody [1C2]	Ms mAb	Hu	ICC/IF, WB
	GTX84148	p38γ antibody [10E1]	Ms mAb	Hu	FACS, IHC, WB

Quality Antibodies • Quality Results

Substrates of p38 MAPKs

Phospho

	Cat. No.	Product name	Host & Clonality	Reactivity	Application
ATF2	GTX59562	ATF2 (phospho Thr69/Thr71) antibody	Rb pAb	Hu, Ms, Rat	IHC, IP
MSK1	GTX61741	MSK1 (phospho Ser360) antibody [EP1888Y]	Rb mAb	Hu, Ms, Rat	ICC/IF, IP, WB
	GTX22562	MSK1 (phospho Thr581) antibody	Rb pAb	Hu, Ms	WB
p53	GTX50161	p53 (phospho Ser33) antibody	Rb pAb	Hu	ICC/IF, WB
STAT1	GTX50217	STAT1 (phospho Ser727) antibody	Rb pAb	Hu, Ms, Rat	ICC/IF, IHC, WB

MKK3/6

Phospho

	Cat. No.	Product name	Host & Clonality	Reactivity	Application
MKK3	GTX107529	MKK3 antibody	Rb pAb	Hu, Ms	ICC/IF, IHC-P, WB
	GTX25428	MKK3 antibody	Rb pAb	Hu	IP, WB
	GTX50464	MKK3 antibody	Rb pAb	Hu, Ms, Rat	ICC/IF, IHC, WB
	GTX50203	MKK3 (phospho Ser189) antibody	Rb pAb	Hu, Rat	ICC/IF, IHC, WB
MKK6	GTX105893	MKK6 antibody	Rb pAb	Hu	WB
	GTX50493	MKK6 antibody	Rb pAb	Hu	ICC/IF, IHC, WB
	GTX50204	MKK6 (phospho Ser207) antibody	Rb pAb	Hu, Rat	ICC/IF, IHC, WB

ASK1/2

Phospho Citation

	Cat. No.	Product name	Host & Clonality	Reactivity	Application
ASK1	GTX107921	ASK1 antibody	Rb pAb	Hu, Ms	IHC-P, WB
	GTX50478	ASK1 antibody	Rb pAb	Hu, Ms, Rat	ICC/IF, IHC, WB
	GTX50228	ASK1 (phospho Ser83) antibody	Rb pAb	Hu	IHC, WB
	GTX50229	ASK1 (phospho Ser966) antibody	Rb pAb	Hu, Ms	IHC, WB
ASK2	GTX88318	ASK2 antibody	Gt pAb	Hu, Ms, Cow, Dog, Rat	ELISA, WB

TAK1 & MEKK4

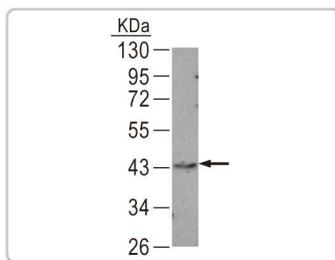
Phospho

	Cat. No.	Product name	Host & Clonality	Reactivity	Application
TAK1	GTX63162	TAK1 antibody [EPR5984]	Rb mAb	Hu, Ms, Rat	ICC/IF, IHC-P, WB
	GTX89337	TAK1 antibody	Gt pAb	Hu, Ms, Rat	ELISA, WB
GTX62938	TAK1 (phospho Ser439) antibody [EPR2863]	Rb mAb	Hu, Ms, Rat	ICC/IF, IP, WB	
MEKK4	GTX61320	MEKK4 antibody [EP551Y]	Rb mAb	Hu	FACS, ICC/IF, IHC-P, WB

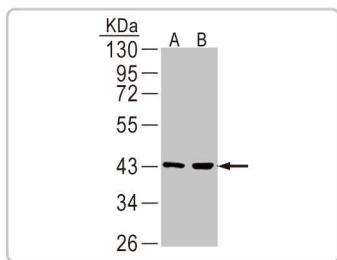
TAO1/2/3

Phospho

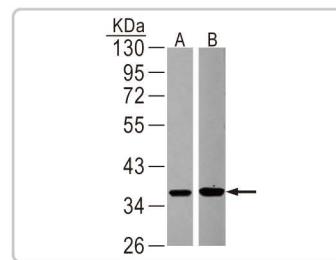
	Cat. No.	Product name	Host & Clonality	Reactivity	Application
TAO1	GTX59887	TAO1 antibody	Rb pAb	Hu, Ms, Rat	IP, WB
	GTX78125	TAO1 antibody	Rb pAb	Hu	IHC-P
TAO2	GTX111170	TAO2 antibody	Rb pAb	Ms	WB
TAO3 / JIK	GTX59824	TAO3 antibody	Rb pAb	Hu, Ms	IP, WB
	GTX89693	TAO3 antibody	Gt pAb	Hu, Ms, Cow, Dog, Rat	ELISA, IHC, WB
TAOs	GTX63717	TAO1/2/3 (phospho Ser181/Ser177) antibody [EPR4883]	Rb mAb	Hu, Ms, Rat	IHC, WB



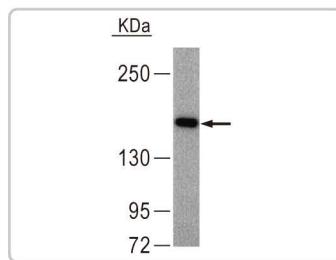
p38α antibody (GTX103009):
WB analysis of Jurkat cell lysate.



MKK3 antibody (GTX107529):
WB analysis of (A) A431 and (B) Raji cell lysates.



MKK6 antibody (GTX105893):
WB analysis of (A) A431 and (B) Raji cell lysates.



ASK1 antibody (GTX107921):
WB analysis of HeLa S3 cell lysate.

ERK5 Pathway & Other MAPK Family Members

ERK5 & MEK5

Phospho

	Cat. No.	Product name	Host & Clonality	Reactivity	Application
ERK5	GTX81404	ERK5 antibody	Rb pAb	Hu	ELISA, IHC, WB
MEK5	GTX111129	MEK5 antibody	Rb pAb	Hu	IHC-P, WB
	GTX50752	MEK5 antibody	Rb pAb	Hu, Ms, Rat	WB
P	GTX50845	MEK5 (phospho Ser311/ Thr315) antibody	Rb pAb	Hu, Ms, Rat	WB

MAPKs

	Cat. No.	Product name	Host & Clonality	Reactivity	Application
MAPK4 / p63 MAPK	GTX104128	MAPK4 antibody	Rb pAb	Hu	ICC/IF, IHC-P, WB
MAPK6 /	GTX61623	MAPK6 antibody [EP1720Y]	Rb mAb	Hu, Ms, Rat	FACS, IHC-P, WB
ERK3	GTX84147	ERK3 antibody [1A9]	Ms mAb	Hu	IHC, WB
MAPK15	GTX107519	MAPK15 antibody	Rb pAb	Hu	ICC/IF, IHC-P, WB

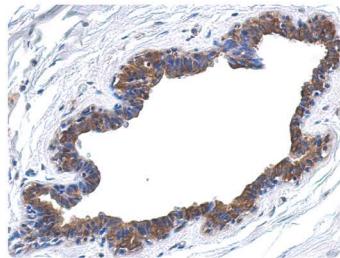
MAP3Ks

	Cat. No.	Product name	Host & Clonality	Reactivity	Application
MAP3K8 /	GTX102711	MAP3K8 antibody	Rb pAb	Hu	ICC/IF, IHC-P, WB
COT / Tpl2	GTX102720	MAP3K8 antibody	Rb pAb	Hu	ICC/IF, IHC-P, WB
MAP3K12 / DLK	GTX124127	MAP3K12 antibody	Rb pAb	Hu, Ms	IHC-P, WB
MAP3K14 / NIK	GTX102471	NIK antibody	Rb pAb	Hu	WB
MAP3K15	GTX46229	MAP3K15 antibody	Rb pAb	Hu	WB

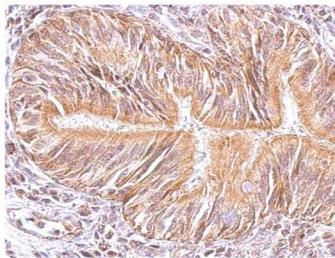
MAP4Ks

Citation

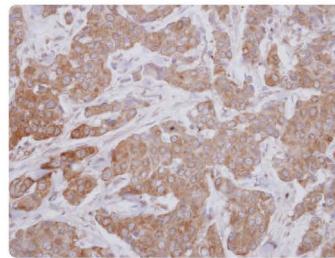
	Cat. No.	Product name	Host & Clonality	Reactivity	Application
MAP4K5 / KHS	GTX109297	KHS antibody	Rb pAb	Hu	ICC/IF, IHC-P, WB
MAP4K6 / MINK	GTX108816	MAP4K6 antibody	Rb pAb	Hu	ICC/IF, IHC-P, WB
	GTX105449	MAP4K6 antibody	Rb pAb	Hu	WB
C	GTX70987	MINK antibody	Rb pAb	Hu	IHC-P



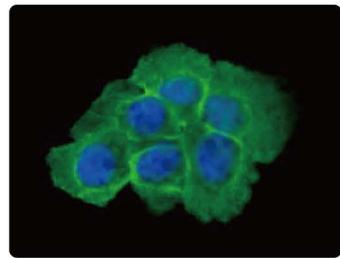
MAP4 antibody (GTX104128):
IHC-P analysis of breast cancer.



MAPK15 antibody (GTX107519):
IHC-P analysis of lung tissue.



MAP3K12 antibody (GTX124127):
IHC-P analysis of breast cancer.



KHS antibody (GTX109297):
ICC/IF analysis of PFA-fixed A431 cells.

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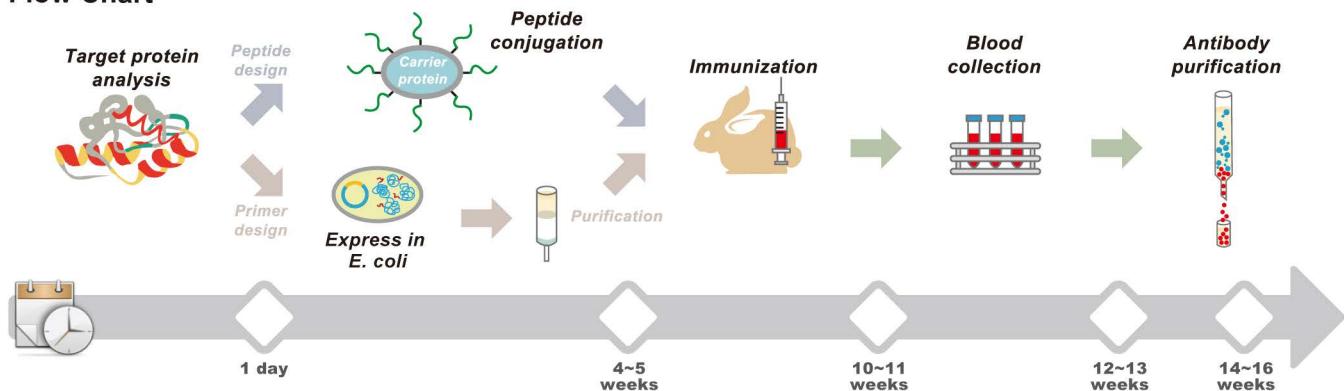


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Flow Chart



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