Technical Data Sheet

MAP Kinase Activation Sampler Kit

Product Information

Material Number: **612544**

Size: 10 µg

Storage Buffer: Aqueous buffered solution containing BSA, glycerol, and ≤0.09% sodium azide.

Description

The family of serine/threonine kinases known as mitogen-activated protein kinases (MAP kinases) are activated after cell stimulation by a variety of hormones and growth factors, as well as during cell responses to stress. Three important kinases in this family include ERK1/2, JNK/SAPK1, and p38. These kinases all contain dual phosphorylation sites that mediate their activation. ERK1 and ERK2 (44/42 kDa) are Ser/Thr kinases activated in cells following stimulation with growth factors such as insulin, the platelet-derived growth factor, or the epidermal growth factor. In rat, these proteins are phosphorylated at Thr-202/Tyr-204 and Thr-183/Tyr-185, respectively. ERK1 and 2 have been implicated in growth factor signaling, as well as other signal transduction pathways. Growth factor stimulation leads to activation of Ras and Raf, leading to phosphorylation of MEK1 (MAPK/ERK kinase) which, in turn, activates ERK via dual phosphorylation. Thus, ERK1 and 2 are critical kinases in multiple signal transduction pathways that regulate cell growth and differentiation. External stimuli, like endotoxins, UV irradiation, heat, and hyperosmolarity, induce an array of cellular responses that culminate with gene expression, ultimately dictating an adaptation to the new environment. Stress signals activate both p38 and JNK/SAPK1 kinases. Activation of JNK/SAPK requires the phosphorylation of Thr-183/Tyr-185 by MKK4 and MKK7. Active JNK/SAPK phosphorylates other kinases and multiple transcription factors that induce expression of genes, such as proinflammatory cytokines. p38 MAP kinases include p38α, β, γ, and δ. Activation of p38 MAPK is mediated through phosphorylation of Thr-180/ Tyr-182 by MKK3, MKK4, and MKK6. This leads to the activation of multiple transcription factors (NF-κB, ATF-2, Elk-1, and CHOP) that induce expression of many different genes. Thus, these MAP kinases have important roles in many different signal transduction pathways where they regulate both cytoplasmic and nuclear proteins.

Antibody	Cat#	Isotype	MW	WB	IP	IF	IH	Human	Dog	Rat	Mouse	Chick	Control	Dilution
ERK1	610030	IgG1	44/42	+	den	+	+	+	+	+	+	+	Rat Cerebrum	1:4000
ERK1/2 (pT202/pY204)	612358	IgG1	44/42	+		+		+		+	+		A431+EGF	1:1000
pan-JNK/SAPK1	610627	IgG1	49	+	-	+	+	+	+	+	+	+	PC12	1:250
JNK (pT183/pY185)	612540	IgG1	43/56	+				+		+	+		HeLa+Anisomycin	1:250
p38a/SAPK2a	612168	IgG1	42	+		+		+	+	+	+		Jurkat	1:5000
p38 MAPK	612280	IgG1	42	+		+		+		+	+		HeLa+Anisomycin	1:2500

IP: nat = native condition, den = denaturing conditions
Dilutions are recommended based on western blotting on the indicated positive control.
This kit includes 10 µg of each antibody listed at a concentration of 250 µg/ml. No substitutions allowed.

Preparation and Storage

Store undiluted at -20°C.
The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.

Application Notes

Application

Western blot	Routinely Tested

Recommended Assay Procedure:
Western blot: Please refer to http://www.bdbiosciences.com/pharmingen/protocols/Western_Blotting.shtml

Suggested Companion Products

Catalog Number	Name	Size	Clone
554002	HRP Goat Anti-Mouse Ig	1.0 ml	(none)

BD Biosciences
bdbiosciences.com

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877.232.8995	888.259.0187	32.53.720.550	0120.8555.90	65.6861.0633	55.11.5185.9995

For country-specific contact information, visit **bdbiosciences.com/how_to_order/**

Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.
3. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.
4. Source of all serum proteins is from USDA inspected abattoirs located in the United States.