CREATIVE BIOMART®
Assay Kit

SRE Reporter Kit (MAPK/ERK Signaling Pathway)

Product Information

Cat.No. Kit-1869

Product Overview

The MAPK/ERK signaling pathway is a major participant in the regulation of cell growth and differentiation. It can be activated by various extracellular stimuli including mitogens, growth factors, and cytokines. Upon stimulation, MEK1/2 phosphorylate and activate ERK1/2. The activated ERK translocates to the nucleus where it phosphorylates and activates transcription factors. The TCFs (Ternary Complex Factors), including Elk1, are among the best-characterized transcription factor substrates of ERK. When phosphorylated by ERK, Elk1 forms a complex with Serum Response Factor (SRF) and binds to Serum Response Element (SRE), resulting in the expression of numerous mitogen-inducible genes.

Size

500 reactions

Description

The SRE Reporter Kit is designed for monitoring the activity of the ERK signaling pathway and the transcriptional activity of SRF in cultured cells. The kit contains a transfection-ready SRE luciferase reporter vector, which is an ERK pathway-responsive reporter. This reporter contains the firefly luciferase gene under the control of multimerized SRE responsive elements located upstream of a minimal promoter. The SRE reporter is premixed with a constitutively-expressing Renilla (sea pansy) luciferase vector that serves as an internal control for transfection efficiency. The kit also includes a non-inducible firefly luciferase vector premixed with constitutively-expressing Renilla luciferase vector as a negative control. The non-inducible luciferase vector contains the firefly luciferase gene under the control of a minimal promoter, without any additional response elements. The negative control is critical for determining pathway-specific effects and the background luciferase activity.

Applications

Monitor MAPK/ERK signaling pathway activity and SRF-mediated activity.Screen for activators or inhibitors of the MAPK/ERK signaling pathway.Study effects of RNAi or gene overexpression on the activity of the MAPK/ERK pathway.

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Storage

Stable at least 12 months from date of receipt, when stored as directed (-20°C)

Kit Components

Reporter (Component A): SRE luciferase reporter vector + constitutively expressing Renilla luciferase vector; 500 µl (55 ng DNA/ µl); -20°C Negative Control Reporter (Component B): Non-inducible luciferase vector + constitutively expressing Renilla luciferase vector; 500 µl (55 ng DNA/ µl); -20°CNote: These vectors are designed for transient transfection. They are NOT SUITABLE for transformation and amplification in bacteria.

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