CREATIVE BIOMART®
Assay Kit

ARE Reporter Kit (Nrf2 Antioxidant Pathway)

Product Information

Cat.No. Kit-1680

Product Overview

The Nrf2 antioxidant response pathway plays an important role in the cellular antioxidant defense. Nrf2, a basic leucine zipper transcription factor, induces the expression of antioxidant and phase II enzymes by binding to the ARE (antioxidant response element) region of the gene promoter. Under basal conditions, Nrf2 is retained in the cytosol by binding to the cytoskeletal protein Keap1. Upon exposure to oxidative stress and other ARE activators, Nrf2 is released from Keap1 and translocates to nucleus, where it can bind to the ARE, leading to the expression of antioxidant and phase II enzymes that protect the cell from oxidative damage.

Size

500 reactions

Description

The ARE Reporter kit is designed for monitoring the activity of the Nrf2 antioxidant pathway in cultured cells. The kit contains a transfection-ready ARE luciferase reporter vector, which is an Nrf2 pathway-responsive reporter. This reporter contains a firefly luciferase gene under the control of multimerized ARE responsive elements located upstream of a minimal promoter. The ARE 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 negative control. The non-inducible luciferase vector contains a firefly luciferase gene under the control of a minimal promoter, without any additional response elements. This negative control is critical to determining pathway-specific effects and background luciferase activity.

Applications

Monitor Nrf2 antioxidant response pathway activity. Screen for activators or inhibitors of the Nrf2 antioxidant response pathway. Study effects of RNAi or gene overexpression on the activity of the Nrf2 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): ARE luciferase reporter vector + constitutively expressing Renilla luciferase vector; 500 µl (60 ng DNA/ µl); -20°C Negative Control Reporter (Component B): Non-inducible luciferase vector + constitutively expressing Renilla luciferase vector; 500 µl (60 ng DNA/ µl); -20°C

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