CREATIVE BIOMART®
Assay Kit

FOXO Reporter Kit (PI3K/AKT Pathway)

Product Information

Cat.No. Kit-1732

Product Overview

The PI3K/AKT signaling pathway is essential for cell growth and survival. Disruption of this pathway or its regulation has been linked to a variety of cancers and coronary diseases. Mammalian FOXO protein (FOXO1, FOXO3, FOXO4), a subgroup of Forkhead transcription factors, is among the best characterized targets of the PI3K/AKT signaling pathway. These transcription factors function as a trigger for apoptosis by upregulating genes necessary for cell death. Insulin or growth factors induce activation of PI3K, which in turn activates AKT. AKT directly phosphorylates FOXOs, resulting in the export of FOXOs from the nucleus to the cytoplasm, thereby inhibiting FOXO-dependent transcription.

Size

500 reactions

Description

The FOXO Reporter kit is designed to monitor activity of the PI3K/AKT signaling pathway and the transcriptional activity of FOXO proteins in cultured cells. The kit contains the transfection-ready FOXO3 expression vector and the FOXO luciferase reporter vector, which is a PI3K/Akt pathway-responsive reporter. This reporter contains a firefly luciferase gene under the control of multimers of the FOXO responsive element located upstream of a minimal promoter. The FOXO reporter is premixed with a constitutively-expressing Renilla (sea pansy) luciferase vector, which serves as an internal control for the 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 also contains the firefly luciferase gene under the control of a minimal promoter, but without any additional response elements. The negative control is critical to determining pathway-specific effects and background luciferase activity.

Applications

Monitor PI3K/AKT signaling pathway activity and FOXO transcriptional activity.

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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): FOXO luciferase reporter vector + constitutivelyexpressing Renilla luciferase vector; 500 µl (60 ng DNA/ µl); -20°C Negative Control Reporter (Component B): Non-inducible luciferase vector + constitutivelyexpressing Renilla luciferase vector; 500 µl (60 ng DNA/ µl); -20°C FOXO3 (Component C): Expression vector for FOXO3; 250 µl (100 ng DNA/µl); -20°C Negative Control Expression vector (Component D): Empty expression vector without FOXO3; 250 µl (100 ng DNA/µl); -20°CThese vectors are ready for transient transfection. They are NOT SUITABLE for transformation and amplification in bacteria.

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