CREATIVE BIOMART®
Assay Kit

Protein Synthesis Monitoring Assay Kit (Flow Cytometry)

Product Information

Cat

Kit-1112

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Description

Cells generate a complete set of proteins during division. Protein synthesis is a tightly regulated process and many critical controls in gene expression occur at the level of translation to ensure that production of specific cellular proteins is quickly turned on/off under specific conditions (heat shock, starvation, etc.). Protein synthesis is essential in cell growth, proliferation, signaling, differentiation or death; therefore, the identity and amount of the synthesized proteins are critical parameters in determining the physiological state of the cell. Methods enabling detection and characterization of nascent proteins, or changes in spatial and temporal protein expression/degradation patterns during disease, drug treatments or environmental changes are important tools in assessment of cytotoxicity. Protein Synthesis Monitoring Assay Kit utilizes a novel and robust chemical method based on an alkyne containing and cell permeable analog of puromycin, O-Propargyl-puromycin (OP-puro). Once inside the cell, OP-puro stops translation by forming covalent conjugates with nascent polypeptide chains. Truncated polypeptides are rapidly turned over by the proteasome and can be detected based on a click reaction with the fluorescent azide. Unlike methionine analogs, OP-puro does not require methionine-free conditions and can be used to label nascent proteins directly in the cell culture. Our kit provides sufficient materials for 50 assays to detect nascent proteins synthesized under various physiological conditions, and Cycloheximide, an inhibitor of protein synthesis that serves as an experimental controll.

Applications

This assay provides a convenient and accurate procedure to measure de novo DNA synthesized in biological samples.

Storage

-20°C

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Shipping	
Gel Pack	
Size	
50 assays	
Kit Components	
Wash Buffer (10X); Fixative Solution; Permeabilization Buffer (10X); Protein Label (400X); Copper Reagent (500X); Fluorescent Azide (100X); Reducing Agent (20X); Total DNA Stain (1000X); Cycloheximide (100X)	
Target Species	
Mammalian	
Detection method	Fluorescence Microscopy (Ex/Em 488/(530/590) nm)
Features & Benefits	
Simple, fast, does not require lengthy incubation times	

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