CREATIVE BIOMART®
Assay Kit

Cellular UV DNA-Damage Detection Kit

Product Information

Cat.No. Kit-0294

Product Overview

Cellular UV DNA-Damage Detection Kit is a non-isotopic immunoassay used for the semi-quantitative measurement of CPDs (cyclobutane pyrimidine dimers) in genomic DNA formed by UV-irradiation to cells.

Description

DNA damage in cells exposed to ultraviolet (UV) radiation plays significant roles in cell-cycle arrest, activation of DNA repair, cell killing, mutation, and neoplastic transformation. The major types of DNA damage induced by UVB (280-315 nm, component of sunlight) and by UVC (200-280 nm) are cyclobutane pyrimidine dimers (CPDs) and (6-4) photoproducts (6-4PPs), which are formed between adjacent pyrimidine nucleotides on the same strand of DNA. Approximately 70-80% of UV-induced DNA damage is CPDs and the remaining is 6-4PPs and Dewar isomer of 6-4PPs. These types of DNA lesions are repaired by nucleotide excision repair (NER) system in normal human cells. Mori et al (10) have established monoclonal antibodies specific for CPDs or 6-4PPs. These antibodies enable one to quantitate photoproducts in DNA purified from cultured cells or from the skin epidermis using an enzyme-linked immunosorbent assay (ELISA) and to visualize and measure photoproducts in DNA in cultured cells or the skin using indirect immunofluorescence (IIF). This technology would contribute to understanding of molecular mechanisms of cellular responses to UV and DNA damage in the photobiology and the pigment cell biology.

Applications

Detection and semi-quantification of cyclobutane pyrimidine dimers in cells.Monitoring the effects of UV on formation of cyclobutane pyrimidine dimers in cells.Monitoring the effects of UV protection reagent on formation of cyclobutane pyrimidine dimers in cells.Study on the repair mechanisms of UV-induced DNA damage by the nucleotide excision repair in cells.

Usage

For research use only (RUO)

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Storage

Upon receipt store all components at 4°CDon''t expose reagents to excessive light

Kit Components

Fixing/Denaturing Solution: Fixing/Denaturing Solution. Ready to use. The solution is a strong alkaline. Wear disposable gloves and eye protection when handling 50 mLBlocking Solution: Ready to use. 50 mL10X Wash Buffer: 10 X Wash Buffer containing 2% Tween -20 100 mL20X Primary Antibody Solution: anti-cyclobutane pyrimidine dimers antibody 600 µLPrimary Antibody Dilution Buffer: Ready to use 12 mL20X Secondary Antibody Solution: HRP (horseradish peroxidase) conjugated Secondary Antibody 600 µLSecondary Antibody Dilution Buffer: Ready to use 12 mLSubstrate Reagent: chromogenic substrate, tetra-methylbenzidine (TMB). Ready to use 20 mLStop Solution: 1 N H_2SO_4. Ready to use. Sulfuric Acid is a strong acid. Wear disposable gloves and eye protection when handling 20 mL

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