

LumiDye™ SMCC Activated APC (SMCC-APC)

M1491730

Storage: 2-8°C. Protect from light. Do not freeze.

Size: 1 mg/5×1 mg.

Introduction

LumiDye™ SMCC Activated APC (SMCC-APC) is formed by modifying allophycocyanin (APC) with Succinimidyl-4-(N-maleimidomethyl) cyclohexane-1-carboxylate (SMCC). It contains a maleimide group that reacts with thiol groups of target molecules, such as proteins. This product is commonly used in fluorescence microscopy, fluorescence immunoassays, dual or multicolor fluorescence analysis, cancer cell surface antigen detection, flow cytometry fluorescence assays, antibody fluorescence labeling, as well as diagnostics and biotechnology applications such as live cell imaging.

APC is a phycobiliprotein isolated from spirulina (a type of blue-green algae). It has a molecular weight of approximately 104kDa and exhibits a very high quantum yield and absorbance, resulting in strong and stable fluorescence. It is easily cross-linked with other molecules and has minimal non-specific adsorption. Its sensitivity is more than 100 times higher than conventional organic fluorophores, making it widely used as a fluorescent label in biological assays. The maximum excitation wavelength (Ex) of APC is 650nm, and the maximum emission wavelength (Em) is 660nm.

This product is a purified conjugate of APC and SMCC. After purification to remove excess SMCC, it is dissolved in PBS-EDTA with 3% trehalose and ultimately supplied as a lyophilized powder. The long-term storage of this product does not affect its thiol reactivity, ensuring the optimal properties for conjugation with other thiol-containing molecules such as proteins.

Instruction for use

This product is chemically activated for easy conjugation to biomacromolecules such as antibodies. These molecules contain cysteine residues. Disulfide bonds formed between cystein residues can be treated with a reducing agent to release free thiol groups. Thiol groups can also be added to primary amine groups of biomacromolecule, such as a protein, through chemical reactions.

The optimal concentration for this product is 5 mg/mL. Add 200 µL of ultrapure water, gently swirl the bottle to ensure complete dissolution of the dye, then proceed with labeling. Note: The SMCC-APC solution must be prepared fresh before each use.

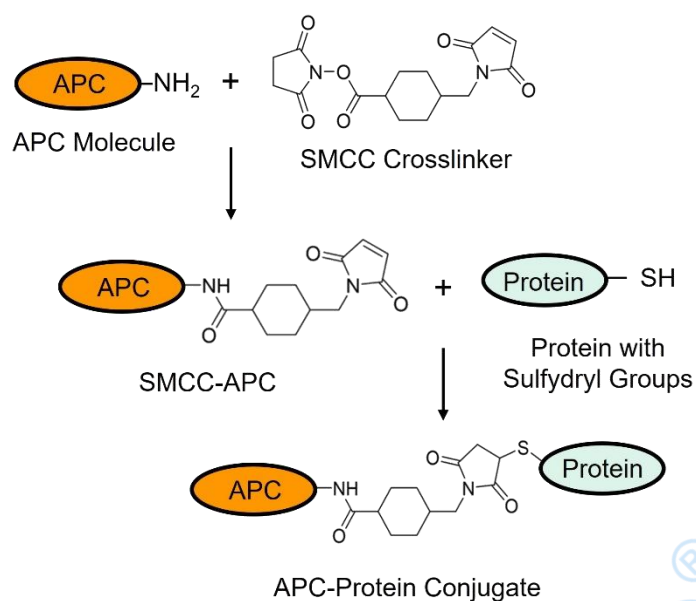


Figure 1. Schematic diagram of the conjugation of LumiDye™ SMCC Activated APC (SMCC-APC) (M1491730) to proteins.

Storage

Store at 4°C in the dark for up to 12 months. Do not store at -20°C or lower temperatures.

Matters needing attention

1. Avoid using buffers containing primary amines and thiols during the reaction to minimize unnecessary competitive reactions.
2. Fluorescent dyes are prone to quenching. Please store and use them in the dark to slow down fluorescence quenching.
3. Products conjugated with the SMCC-APC should be stored at 4°C in the dark. Do not freeze.
4. During operation, always wear a lab coat, disposable gloves, and protective equipment.
5. All products are for research use only.