

LumiDye™ SMCC Activated Streptavidin (SMCC-SA)

M1491735

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

Shipping: Shipped with ice packs. Please store under the specified storage conditions immediately upon receipt.

Size: 0.1 mg/1 mg.

Introduction

LumiDye™ SMCC Activated Streptavidin (SMCC-SA) is formed by Streptavidin 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. The conjugate can be used immediately in applications such as Western blot, ELISA, and Immunohistochemistry (IHC) without further purification.

Streptavidin is a non-glycosylated protein. It exhibits exceptionally high affinity for biotin and remains stable across a wide range of pH levels and temperatures. Due to its high affinity for biotin, it is used to bridge biotinylated molecules. Each streptavidin molecule can bind four biotin molecules. Streptavidin is a biotin-binding protein derived from *Streptomyces avidinii*. Its non-specific binding is significantly lower than that of avidin, and it possesses more favorable chemical properties, such as having almost no net charge at neutral pH and being carbohydrate-free. Therefore, it is widely used as a substitute for avidin.

This product is a purified conjugate of SA 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 cysteine 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.

Two options are available: 0.1 mg and 1.0 mg. The optimal concentration is 5 mg/mL (Reconstitute in ultrapure water). For IgG labeling, the recommended mass ratio is IgG:SA = 1:1, which corresponds to a molar labeling ratio of IgG:SA = 1:3. Other proteins may be labeled using different molar ratios as needed. Note: The SMCC-SA solution must be prepared fresh before each use.

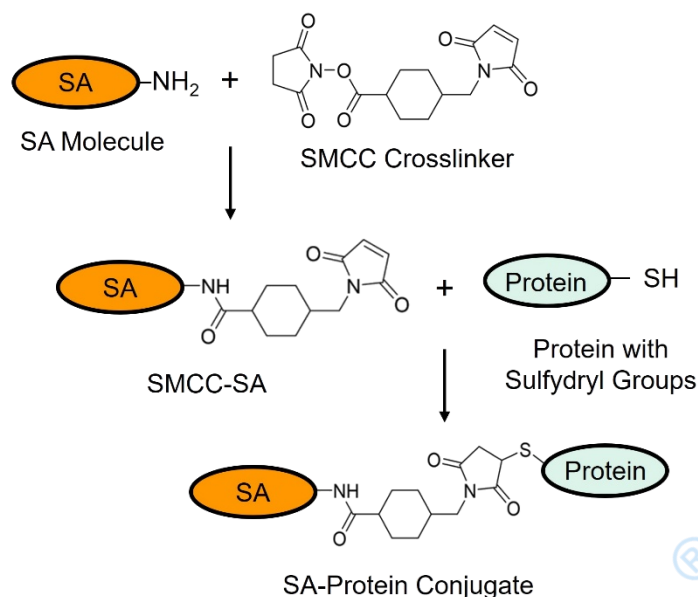


Figure 1. Schematic diagram of the conjugation of LumiDye™ SMCC Activated Streptavidin (SMCC-SA) (M1491735) to proteins.

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. Products conjugated with the SMCC-SA should be stored at 4°C in the dark. Do not freeze.
3. Before formal experimentation, allow all reagents to reach room temperature, as lower temperatures may impair conjugation efficiency. Before opening the bottle cap, centrifuge it briefly to settle the powder at the bottom of the tube, preventing loss during opening.
4. During operation, always wear a lab coat, disposable gloves, and protective equipment.
5. All products are for research use only.