

# SATA

## Product Description

Converts amine to protected sulfhydryls

Can also be used as a crosslinking agent by thiolating biomolecule then exchanging sulfhydryl with another molecule ([Duncan 1983](#))

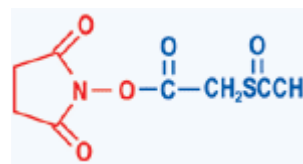
Catalog nb: [UP84235](#)

Name: **SATA**

N-succinimidyl S-acetylthioacetate hydrochloride

Formula:  $C_8H_9NSO_5$ , M.W.= **231.2**, CAS [76931-93-6]

Store at  $-20^{\circ}C$  (M)



## Directions for Use

### Protocole 2: 'introducing SH in proteins

1-Prepare extemporaneously a 15mg/ml solution in dry DMSO

2-Prepare 10mg of protein in PBS 1mM EDTA pH7.5

3-Add 10µl of SATA to 1ml of protein and incubate for 1H at room temperature

4-Desalt the protein by dialysis, ultrafiltration or with desalting columns (UP84874)

5-The protein can be stored frozen for long term.

6-When deprotection is needed, incubate for 2 hours at room temperature the protein with 10% v/v of 50 mM sodium phosphate, 25 mM EDTA, 0.5 M hydroxylamine • HCl, pH 7.5. SH content can be assayed with DTNB reagent ([#UP01566](#)). Desalting by suitable means may be required for further use.

## Technical Information

- Thiols are important in protein biochemistry. They are present on several proteins, peptides, but when absent, buried or in insufficient number, they are introduced easily with SATA or iminothiolane ([#UP42425](#))
- NHS group reacts in mild conditions specifically with primary amines, forming a stable covalent linkage, to add protected sulfhydryls. Avoid to use amine containing buffers (Tris, Glycine)! The yield of introduced SH increased with SATA to protein ratio, i.e. 21 SH per BSA at 25 : 1 incubation ratio, up to 33 SH per BSA with 250 : 1 ratio. A calibration should be performed for each protein.
- The by-product of the reaction, N-hydroxysuccinimide, is released and can be monitored by UV.
- When a free sulfhydryl is needed, an easy deprotection step is performed with hydroxylamine ([#05965](#)), generating a thioacetylated peptide
- Free sulfhydryl containing peptide can then be conjugated to form a hapten-carrier conjugate

### Related products:

carrier proteins KLH UP88502, BSA, OVA, MaxiBind... [NT](#)

NHS-acetate UP69380, Iminothiolane UP42425

### Literature:

Duncan, R.J.S., Weston, P.D. and Wigglesworth, R. (1983). A new reagent which may be used to introduce sulfhydryl groups into proteins, and its use in the preparation of conjugates for immunoassay. *Anal. Biochem.* 132, 68-73.

King, T.P. and Kochoumian, L. (1979). A comparison of different enzyme-antibody conjugates for enzyme-linked immunosorbent assay. *J. Immunol. Methods.* 28:201-210.

Kumar, A. and Malhotra, S. (1992). A simple method for introducing -SH group at 5' OH terminus of oligonucleotide. *Nucleosides & Nucleotides.* 11(5): 1003-1007.

Weston, P.D., Devries, J.A. and Wigglesworth, R. (1980). Conjugation of enzymes to immunoglobulins using dimaleimides. *Biochem. Biophys. Acta.* 612:40-49.

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## Other Information

For in vitro R&D use only

Please contact Uptima – Interchim for any other information

Rev.D12E

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[uptima@interchim.com](mailto:uptima@interchim.com)



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213 Avenue J.F. Kennedy - BP 1140  
03103 Montluçon Cedex - France  
Tél. 04 70 03 88 55 - Fax 04 70 03 82 60