

# SPB (NHS-Psoralen)

23013

0821w

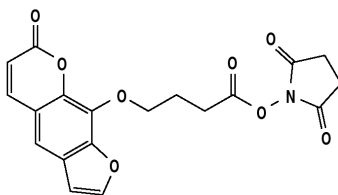
Number	Description
23013	<p><b>Succinimidyl-[4-(psoralen-8-yloxy)]butyrate (SPB), 50 mg</b></p> <p>Formula: C<sub>19</sub>H<sub>15</sub>NO<sub>8</sub></p> <p>Molecular Weight: 385.32</p> <p><b>Storage:</b> Upon arrival store desiccated at 4°C. Product is shipped at ambient temperature.</p> <p><i>This product is guaranteed for one year from the date of purchase when handled and stored properly.</i></p>

## Introduction

Succinimidyl-[4-(psoralen-8-yloxy)]butyrate (SPB) is an amine-reactive and photoreactive heterobifunctional cross-linking reagent. The photoreactive psoralen group provides much greater covalent insertion yields than phenyl azide-containing compounds, which makes this reagent a superior alternative to typical photoreactive NHS-ester cross-linkers. The psoralen tricyclic planar ring system intercalates into double stranded, and to a lesser extent single-stranded, DNA, RNA, PCR products, cDNA or oligonucleotides. It also can be used with agarose-gel purified oligonucleotides because the presence of agarose does not interfere with the coupling reaction. The nucleic acid labeling site of the psoralen group (the 5,6 double bond in thymine residues) does not interfere with subsequent hybridization reactions, creating a highly-sensitive direct labeling alternative to radioactive probes.

## Important Product Information

- SPB is moisture-sensitive. Store SPB at 4-8°C and desiccated. To avoid moisture condensation onto the product, vial must be equilibrated to room temperature before opening.
- Dissolve SPB in organic solvent (e.g., DMF or DMSO) before addition to an aqueous reaction medium.
- The NHS ester will cross-link to primary amines in target molecules at pH 7-9 to form stable amide bonds. Suggested reaction buffer is 0.1 M sodium phosphate, 0.15 M NaCl, pH 7.2 (Product No. 28372). Avoid amine-containing buffers such as Tris or glycine as they will compete with the NHS ester reaction.
- Photoreactive coupling occurs with high yield after brief exposure to long UV light (>350 nm, 10-30 minutes).



SPB  
M.W. 385.32

Molecular structure of Succinimidyl-[4-(psoralen-8-yloxy)]butyrate

## References

1. Laskin, J.D., *et al.* (1986). *Proc. Natl. Acad. Sci. USA* **83**, 8211.
2. Parsons, B.J. (1980). Psoralen Photochemistry. *Photochem. Photobiol.* **32**, 813-821.
3. Bisagni, E. (1992). Synthesis of psoralens and analogs. *J. Photochem. Photobiol.* **14**, 23-46.
4. Cimino, G.D., *et al.* (1985). *Ann. Rev. Biochem.* **54**, 1151.
5. Kanne, D., *et al.* (1982). *J. Amer. Chem. Soc.* **104**, 6754.
6. Inman, R.B., Schnos, M. (1987). *J. Mol. Biol.* **193**, 377.
7. Elsner, H. and Mouritsen, S. (1994). *Bioconjugate Chem.* **5**, 463-467.
8. Oser, A., Roth, W.K. and Valet, G. (1988). Sensitive non-radioactive dot-blot hybridization using DNA probes labeled with chelate group substituted psoralen and quantitative detection by europium ion fluorescence. *Nucleic Acids Res.* **16**, 1181-1196.
9. Henriksen, U., Buchardt, O. and Nielsen, P. (1991). Azidobenzoyl-, azidoacridinyl-, diazocyclopentadienyl-carbonyl-, and 8-propyloxypsoralen photobiotinylation reagents. Syntheses and photoreactions with DNA and protein. *Photochem. Photobiol. A: Chem.* **57**, 331-342.
10. Wassarman, D.A. (1993). Psoralen cross-linking of small RNAs in vitro. *Molecular Biol. Reports* **17**, 143-151.

©Pierce Chemical Company, 1/2002. Printed in the USA.