

## Aminated Biotins

### Aminated Biotin - building blocks and polar tracers

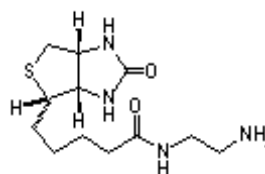
Building block for biotin derivatives synthesis or conjugations to biotinylate carboxyls.: amino group can be coupled to carboxy group of any biomolecule using carbodiimides (EDAC UP52005), to sulfonyl chlorides. Some aminated biotins ('cadaverines') are also used as polar tracer in cell biology studies.

| Aminated biotins  | cat.#                                | MW                | spacer       |
|---|--------------------------------------|-------------------|--------------|
| <b>Biotin-Ethyl-Amine</b><br>shorter spacer analog of Biotin cadaverine                         | IU6870, 100 mg                       | <b>286.4</b>      |              |
| <b>Biotin cadaverine</b> , free base<br>N-(5-aminopentyl)biotinamide                            | UP84961A, 50mg<br>UP84961B, 100mg    | <b>328.48</b> (L) | 6 Atoms      |
| <b>Biotin-Hexyl-Amine</b><br>extended spacer  | IU6880, 100 mg                       | <b>342.5</b>      |              |
| <b>Biotin-1c-cadaverine</b> , free base   | FI8951, 20mg                         | <b>441.64</b> (L) | 12Atoms      |
| <b>Biotin-PEO<sub>3</sub>-Amine</b><br>Amino-PEO tether imparts water                           | 77872A, 100mg                        | <b>374.51</b> (L) | 20.4A PEO    |
| <b>Biotin-PEO<sub>4</sub>-Amine</b><br>extended amino-PEO tether imparts water                  | 91577A, 100mg                        | <b>418.56</b> (L) | 22.9A PEO    |
| <b>Biotin-SS-E-Amine</b> (Aminoethyl-SS-(+)-Biotin)<br>Spacer is cleavable by DTT, DTE, or TCEP | BT3761, 50 mg                        | <b>382.97</b> (J) | Clivable/red |
| <b>Other biotin derivatives</b>   | see <a href="#">related products</a> |                   |              |

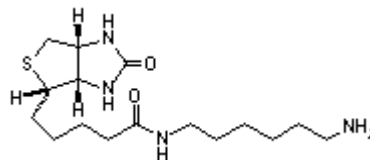
**Storage:** -20°C (J) , or +4°C (-20°C for long term (L,K))

### Products Description

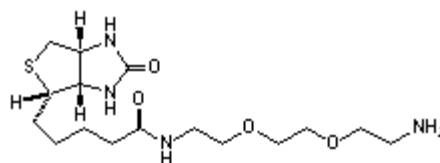
**Catalog number:** IU6870, 100 mg  
**Name:** **Biotin-Ethyl-Amine**  
**Formula :** **M.W.= 286.4** (L)  
 Short chain  
**Applications:** Building block to biotinylate carboxyls  
 Intracellular labeling studies (<sup>Kita 1991</sup>)



**Catalog number:** IU6880, 100 mg  
**Name:** **Biotin-Hexyl-Amine**  
**Formula :** **M.W.= 342.5** (L)  
**Applications:** Building block to biotinylate carboxyls  
 Labeling carbohydrate and glycoproteins (<sup>Hron 1989</sup>)

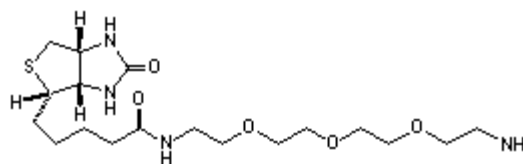


**Catalog number:** 77872A, 100mg  
**Name:** **Biotin-PEO<sub>2</sub>'-Amine**  
**Formula :** **M.W.= 374.51** (L)  
 Spacer is 20.4 Angstrom length.  
**Applications:** Building block to biotinylate carboxyls

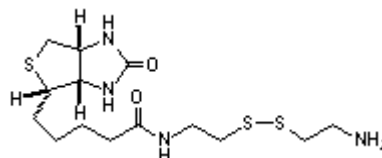


FT-84961A

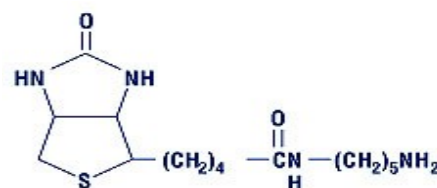
**Catalog number:** 91577A, 100 mg  
**Name:** **Biotin-PEO3'-Amine**  
**Formula :** **M.W.= 418.56** (L)  
 Spacer is 22.9 Angstrom length.  
**Applications:** Building block to biotinylate carboxyls



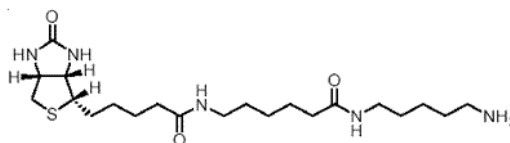
**Catalog number:** BT3761, 50 mg  
**Name:** **Biotin-SS-E-Amine**  
**Formula :**  $C_{14}H_{26}N_4S_2O_2 \cdot HCl$ , **M.W.= 382.97** (M)  
 Spacer is cleavable by DTT, DTE, or TCEP Han 19994  
**Applications:** Reversible Biotinylation  
 (see also UPS0738/NHS deriv., UP83035/HPDP)



**Catalog number:** UP84961A, 50 mg    UP84961B, 100 mg  
**Name:** **Biotin cadaverine**, free base  
 N-(5-aminopentyl)biotinamide)  
**Formula :**  $C_{15}H_{29}N_4O_2S$ , **M.W.= 328.5** (L)  
**Applications:** Building block Building block to biotinylate carboxyls  
 Colorimetric assay for factor XII carbonyls and cellular transglutaminases  
 Also available as TFA salt (#85594A)



**Catalog number:** FI8951, 20 mg  
**Name:** **Biotin-lc-cadaverine**, free base  
**Formula :** 5-(((N-(biotinoyl)amino)hexanoyl)amino) pentylamine, free base  
**M.W.= 441.64** (M)



**Applications:** Building block to biotinylate carboxyls r

Also available as TFA salt (#83882A)

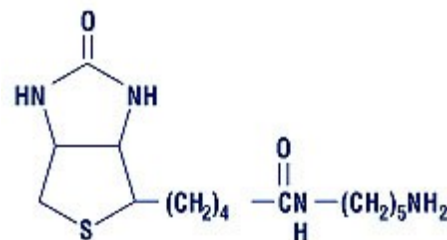
## Related documents and products

See [BioSciences Innovations catalogue](#) and [e-search tool](#).

- [#849611](#) Biotin Cadaverins (aminated biotins, used as polar tracers)
- [#10685A](#) D-Biotin ([UP10685](#)) and carboxylated derivatives (PEO spacer...)
- [#39375A](#) IminoBiotin ([UP39375](#)) and NHS-IminoBiotin ([UP35329](#))
- [#52117A](#) Amine reactive Biotins (i.e NHS-Biotin [UP52117](#))
- [#48198A](#) Sulfhydryl reactive Biotins (i.e. Maleimide-PEO-Biotin [87284A](#))
- [#52005A](#) EDC ([UP52005](#); crosslinker for amine to carboxyl conjugations)
- [#05361D](#) HABA ([UP05361](#); biotin quantitation)
- [#M1210A](#) Lucifer Yellow cadaverine BiotinX ([FP-M1210A](#))

## Scientific information

**Catalog number:** UP84961A, 50mg      UP84961B, 100mg  
**Name:** **5-(BiotinAmido)PentylAmine**  
**Formula :** C<sub>10</sub>H<sub>17</sub>N<sub>3</sub>O<sub>2</sub>S, **M.W.= 329.49**  
**Storage:** Store cold. Keep dry. (L)  
 Warm to room temperature before opening



- Applications:**
- Biotinylation of Carboxylic Acids containing biomolecules ([alHakim1988](#)), notably DNA and peptides.
  - transglutaminase-mediated modification of glutamine residues in cells and certain proteins ([Lai 1994](#), [Slaughter1992](#)).
  - Colorimetric assay of blood coagulation factor XIII in plasma ([Lee 1988](#))
- **(BiotinAmido)PentylAmine** is relatively water soluble (up 50nM in water) and contains a terminal primary amine, separated from biotin by a 18.9Angstroms long spacer.
  - Aminated biotins ('cadaverines') are used as **polar tracer** in cell biology studies. They are also useful **building block** for biotin derivatives synthesis or conjugations to biotinylate carboxyls: amino group can be coupled to carboxy group of any biomolecule using carbodiimides (EDAC [UP52005](#)), or to sulfonyl chlorides.
  - **Coupling to carboxyl** containing molecules require the use of EDAC ([#UP52005](#)). Protocols are given in the literature, or you may set up your own protocol using following guidelines: The protein may be prepare in PBS or MES 0.1M pH5-6, and incubated for 2H at room temperature at 80µM with 2.8nM of BiotinAmidoPentylAmine and 6.9mM of EDAC. Polymerization of the protein (and correlated precipitate) may occur, and reduced by decreasing EDAC ratio to protein or increasing biotin ratio. After desalting, the biotinylated protein may be analysed for biotin content (HABA assay [#UP05361](#)).

### Literature for UP84961

al-Hakim AH, Hull R (1988); Chemically synthesized non-radioactive biotinylated long-chain nucleic acid hybridization probes; *Biochem J* 251, 935-938 PN7428.

Lee, K.Y., Birekbichler, P.J. and Patterson, M.K., Jr. (1988). Colorimetric assay of blood coagulation factor XIII in plasma. *Clin. Chem.* **34**, 906-910.

Lai TS, Achyuthan KE, Santiago MA, Greenberg GS (1994); Carboxyl-terminal truncation of recombinant factor XIII A-chains. Characterization of minimum structural requirement for transglutaminase activity; *J Biol Chem* 269, 24596-24601 PN17717.

Slaughter TF, Achyuthan KE, Lai TS, Greenberg CS. (1992); A microtiter plate transglutaminase assay utilizing 5-(biotinamido)pentylamine as substrate; *Anal Biochem* 205, 166-171 PN14664.

For any information, please ask Uptima / Interchim  
 Hotline : +33(0)4 70 03 73 06; [Uptima@interchim.com](mailto:Uptima@interchim.com)

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For any question,  
 contact you local distributor  
[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