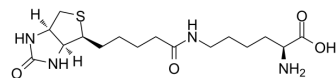


## Biocytin

<b>Cat. No.:</b>	HY-101884		
<b>CAS No.:</b>	576-19-2		
<b>Molecular Formula:</b>	C <sub>16</sub> H <sub>28</sub> N <sub>4</sub> O <sub>4</sub> S		
<b>Molecular Weight:</b>	372.48		
<b>Target:</b>	Endogenous Metabolite		
<b>Pathway:</b>	Metabolic Enzyme/Protease		
<b>Storage:</b>	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month



### SOLVENT & SOLUBILITY

<b>In Vitro</b>	H <sub>2</sub> O : 50 mg/mL (134.24 mM; Need ultrasonic)			
		Solvent Concentration	Mass	
			1 mg	5 mg
			10 mg	
<b>Preparing Stock Solutions</b>	<b>1 mM</b>	2.6847 mL	13.4235 mL	26.8471 mL
	<b>5 mM</b>	0.5369 mL	2.6847 mL	5.3694 mL
	<b>10 mM</b>	0.2685 mL	1.3424 mL	2.6847 mL
Please refer to the solubility information to select the appropriate solvent.				
<b>In Vivo</b>	1. Add each solvent one by one: PBS Solubility: 100 mg/mL (268.47 mM); Clear solution; Need ultrasonic and warming and heat to 60°C			

### BIOLOGICAL ACTIVITY

<b>Description</b>	Biocytin is a conjugate of D-biotin and L-lysine, where the carboxylate of D-biotin is coupled with the ε-amine of L-lysine via a secondary amide bond. Biocytin is a classical neuroanatomical tracer commonly used to map brain connectivity. Biocytin is used as a versatile marker in anterograde, retrograde and intracellular neuroanatomical investigations and in biotinidase assays <sup>[1][2]</sup> .
<b>IC<sub>50</sub> &amp; Target</b>	Human Endogenous Metabolite
<b>In Vitro</b>	Due to its high affinity for avidin, Biocytin can be visualized by using a host of avidin-conjugated markers at the light and electron microscopic level. Biocytin is used to visualize the morphology of dendritic and axonal arborizations <sup>[1]</sup> . The Biocytin wide-field bipolar cell in rabbit retina is a sparsely populated ON cone bipolar cell with a broad dendritic arbor that does not contact all cones in its dendritic field. Identification of bipolar cells by selective uptake of Biocytin, labeled the cones with peanut agglutinin, and then identification of cone types using antibodies against blue cone opsin and red-green

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cone opsin. The Biocytin-labeled cells selectively contact cones whose outer segments stained for blue cone opsin and avoided cones that do not. Biocytin wide-field bipolar cell is an ON blue cone bipolar cell in the rabbit retina and is homologous to the blue cone bipolar cells that have been previously described in primate, mouse, and ground squirrel retinas<sup>[3]</sup>.

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

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## CUSTOMER VALIDATION

- J Neurochem. 2022 Jul 1.

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## REFERENCES

- [1]. Roth G, et al. Morphology and axonal projection pattern of neurons in the telencephalon of the fire-bellied toad *Bombina orientalis*: an anterograde, retrograde, and intracellular biocytin labeling study. *J Comp Neurol*. 2004 Oct 4;478(1):35-61.
- [2]. Mishra A, et al. Improved neuronal tract tracing with stable biocytin-derived neuroimaging agents. *ACS Chem Neurosci*. 2010 Feb 17;1(2):129-38.
- [3]. MacNeil MA, et al. Biocytin wide-field bipolar cells in rabbit retina selectively contact blue cones. *J Comp Neurol*. 2008 Jan 1;506(1):6-15.
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**Caution: Product has not been fully validated for medical applications. For research use only.**

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