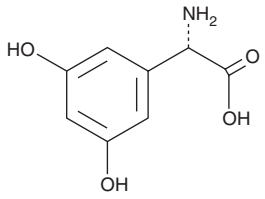
PRODUCT INFORMATION

(S)-3,5-DHPG

Item No. 14411

CAS Registry No.: 162870-29-3
Formal Name: (αS)-amino-3,5-dihydroxy-benzeneacetic acid
Synonym: (S)-3,5-Dihydroxyphenylglycine
MF: $C_8H_9NO_4$
FW: 183.2
Purity: ≥98%
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years
Special Conditions: Air and light sensitive



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

(S)-3,5-DHPG is supplied as a crystalline solid. A stock solution may be made by dissolving the (S)-3,5-DHPG in the solvent of choice, which should be purged with an inert gas. (S)-3,5-DHPG is soluble in the organic solvent DMSO at a concentration of approximately 20 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of (S)-3,5-DHPG can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of (S)-3,5-DHPG in PBS (pH 7.2) is approximately 20 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

(S)-3,5-DHPG, known more commonly as DHPG, is an agonist of the group I metabotropic glutamate receptors (mGluRs), binding both mGluR1a and mGluR5a (K_i = 0.9 and 3.9 µM, respectively) but not ionotropic glutamate receptors.[1] The (S)-enantiomer is about ten times more potent than the (R)-enantiomer.[2] (S)-3,5-DHPG is commonly used to evaluate the roles of group I mGluRs in neuronal signaling.[3,4]

References

1. Mutel, V., Ellis, G.J., Adam, G., *et al.* Characterization of [3H]quisqualate binding to recombinant rat metabotropic glutamate 1a and 5a receptors and to rat and human brain sections. *J. Neurochem.* **75(6)**, 2590-2601 (2000).
2. Baker, S.R., Goldsworthy, J., Harden, R.C., *et al.* Enzymatic resolution and pharmacological activity of the enantiomers of 3,5-dihydroxyphenylglycine, a metabotropic glutamate receptor agonist. *Bioorg. Med. Chem. Lett.* **5(3)**, 223-228 (1995).
3. Clements, M.A., Swapna, I., and Morikawa, H. Inositol 1,4,5-triphosphate drives glutamatergic and cholinergic inhibition selectively in spiny projection neurons in the striatum. *J. Neurosci.* **33(6)**, 2697-2708 (2013).
4. Grolla, A.A., Sim, J.A., Lim, D., *et al.* Amyloid-b and Alzheimer's disease type pathology differentially affects the calcium signalling toolkit in astrocytes from different brain regions. *Cell Death Dis.* (2013).

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