# PRODUCT INFORMATION

## DCPG

*Item No. 22072*

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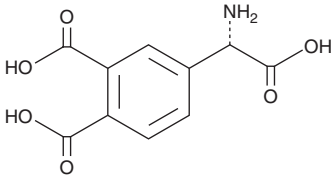
| **CAS Registry No.:** | 201730-11-2 |
| **Formal Name:** | 4-[(S)-aminocarboxymethyl]-1,2-benzenedicarboxylic acid |
| **Synonym:** | (S)-3,4-DCPG |
| **MF:** | $C_{10}H_9NO_6$ |
| **FW:** | 239.2 |
| **Purity:** | ≥95% |
| **Supplied as:** | A crystalline solid |
| **Storage:** | -20°C |
| **Stability:** | ≥4 years |




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

### Laboratory Procedures

DCPG is supplied as a crystalline solid. A stock solution may be made by dissolving the DCPG in the solvent of choice. DCPG is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of DCPG in these solvents is approximately 33, 20, and 25 mg/ml, respectively.

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 DCPG can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of DCPG in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

DCPG is a selective agonist of the class III metabotropic glutamate receptor 8 (mGluR8), with an $EC_{50}$ value of 31 nM for inhibiting forskolin-stimulated cAMP formation in AV12-664 cells expressing human mGluR8.[1] It is selective for mGluR8 over other mGluRs ($EC_{50}$s = >3.5 µM for mGluR1-7). *In vitro*, DCPG (1 µM) inhibits the responses of mouse retinal ganglion cells to the withdrawal of both bright and dim light stimuli by 68-69% relative to untreated cells.[2] *In vivo*, DCPG (10 nmol, i.c.v.) reverses catalepsy induced by prolonged exposure to haloperidol (Item No. 12014) in a rat model of Parkinson's disease.[3]

### References


1. Thomas, N.K., Wright, R.A., Howson, P.A., *et al.* (S)-3,4-DCPG, a potent and selective mGlu8a receptor agonist, activates metabotropic glutamate receptors on primary afferent terminals in the neonatal rat spinal cord. *Neuropharmacology* **40(3)**, 311-318 (2001).
2. Reed, B.T., Morgans, C.W., and Duvoisin, R.M. Differential modulation of retinal ganglion cell light responses by orthosteric and allosteric metabotropic glutamate receptor 8 compounds. *Neuropharmacology* **67**, 88-94 (2013).
3. Johnson, K.A., Jones, C.K., Tantawy, M.N., *et al.* The metabotropic glutamate receptor 8 agonist (S)-3,4-DCPG reverses motor deficits in prolonged but not acute models of Parkinson's disease. *Neuropharmacology* **66**, 187-195 (2013).





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