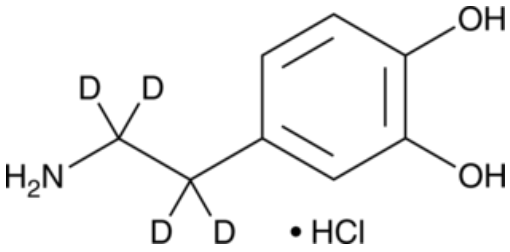
# Product Data Sheet

Product Name: Dopamine-d4 (hydrochloride)
Cat. No.: GC49497

## Chemical Properties

| | | | |
|---|---|---|---|
| Cas. No. | 203633-19-6 | | |
| SMILES | NC([2H])([2H])C([2H])([2H])C1=CC(O)=C(C=C1)O.Cl | | |
| Formula | C8H7D4NO2 • HCl | M.Wt | 193.7 |
| Solubility | DMF: 30 mg/ml,DMSO: 30 mg/ml,Ethanol: 1 mg/ml,PBS (pH 7.2): 5 mg/ml | Storage | -20°C |
| General tips | For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20°C for several months. | | |
| Shipping Condition | Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request. | | |

Structure




## Background

Dopamine-$d_4$ is intended for use as an internal standard for the quantification of dopamine by GC- or LC-MS. Dopamine is an endogenous catecholamine neurotransmitter synthesized from the amino acid L-tyrosine that acts as an agonist at dopamine receptors ($D_{1-5}$).[1] Dopamine is mainly synthesized in the substantia nigra and ventral tegmental area, and is a precursor in norepinephrine and epinephrine biosynthesis. Dopamine-containing neurons in the brain are involved in reward-motivated behavior, motor control, and hormone release. Dopamine is also synthesized in the adrenal glands where it exerts peripheral paracrine functions including control of vasodilation, sodium excretion, insulin production, gastrointestinal motility, and the activity of lymphocytes.[2,3] Loss or damage of dopaminergic neurons in the substancia nigra is associated with Parkinson's disease.[4]

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1.Missale, C., Nash, S.R., Robinson, S.W., et al.Dopamine receptors: From structure to functionPhysiol. Rev.78(1)190-225(1998) 2.Hayaishi, O.Molecular genetic studies on sleep-wake regulation, with special emphases on the prostaglandin D2 systemJ. Appl. Physiol.92(2)863-868(2015) 3.Garza, J.H.H., and Carr, D.J.J.Neuroendocrine peptide receptors on cells of the immune systemChem. Immunol.69132-154(1997) 4.Angeles, D.C., Ho, P., Dymock, B.W., et al.Antioxidants inhibit neuronal toxicity in Parkinson's disease-linked LRRK2Ann. Clin. Transl. Neurol.3(4)288-294(2016)

***Caution: Product has not been fully validated for medical applications. For research use only.***
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