Dopamine β-hydroxylase

Dopamine β-hydroxylase (Dopamine beta-hydroxylase, Dopamine beta-monooxygenase, Dopamine β-monooxygenase) is an enzyme that in humans is encoded by the DBH gene. Dopamine β-monooxygenase catalyzes the chemical reaction with 3 substrates of 3,4-dihydroxyphenethylamine, ascorbate, and $O_2$, whereas its 3 products are noradrenaline, dehydroascorbate, and $H_2O$. Dopamine β-hydroxylase belongs to the family of oxidoreductases, specifically those acting on paired donors, with $O_2$ as oxidant and incorporation or reduction of oxygen. Dopamine β-hydroxylase participates in tyrosine metabolism. Dopamine β-hydroxylase has 3 cofactors: copper, PQQ, and Fumarate. Dopamine β-hydroxylase is in the catecholamine biosynthetic pathway. Dopamine β-hydroxylase has been shown to be associated with decision making and addictive behaviors such as alcohol and smoking, attention deficit hyperactivity disorder, and also with neurological diseases such as Schizophrenia and Alzheimer’s.
Dopamine β-hydroxylase Inhibitors & Modulators

**Etamicastat**
(BIA 5-453)  
Cat. No.: HY-14838

- **Bioactivity:** Etamicastat (BIA 5-453) is a potent and reversible peripheral dopamine-β-hydroxylase (DBH) inhibitor.[1]
- **Purity:** >98%
- **Clinical Data:** No Development Reported
- **Size:** 250 mg, 500 mg

**Nepicastat**
(SYN117; RS-25560-197)  
Cat. No.: HY-13289

- **Bioactivity:** Nepicastat (SYN117; RS-25560-197) is a dopamine beta-hydroxylase inhibitor with IC50 of 8.5 ± 0.8 and 9.0 ± 0.8 nM for bovine and human, respectively.
- **Purity:** >98%
- **Clinical Data:** Phase 2
- **Size:** 5 mg, 10 mg, 50 mg

**Nepicastat hydrochloride**
(SYN-117 hydrochloride; RS-25560-197 hydrochloride)  
Cat. No.: HY-13289A

- **Bioactivity:** Nepicastat HCl(SYN117 HCl; RS-25560-197 HCl) is a dopamine beta-hydroxylase inhibitor with IC50 of 8.5 ± 0.8 and 9.0 ± 0.8 nM for bovine and human, respectively. IC50 value: 8.5/9.0 nM (bovine/human dopamine beta-hydroxylase). Dopamine beta-hydroxylase is an enzyme that catalyzes the conversion of...
- **Purity:** 99.98%
- **Clinical Data:** Phase 2
- **Size:** 10mM x 1mL in DMSO, 5 mg, 10 mg, 50 mg

**Zamicastat**
(BIA 5-1058)  
Cat. No.: HY-106004

- **Bioactivity:** Zamicastat (BIA 5-1058) is a dopamine β-hydroxylase (DBH) inhibitor that could cross the blood-brain barrier (BBB) and cause central as well as peripheral effects. Zamicastat is also a concentration-dependent dual P-gp and BCRP inhibitor with IC50 values of 73.8 μM and 17.0 μM, respectively.[1]...
- **Purity:** >98%
- **Clinical Data:** No Development Reported
- **Size:** 250 mg, 500 mg