# PRODUCT INFORMATION

## 5-BDBD

*Item No. 42034*

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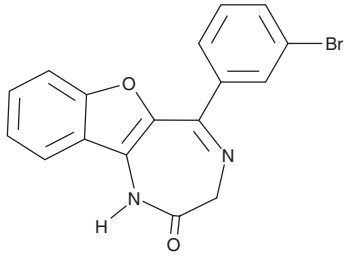
|---|---|
| **CAS Registry No.:** | 768404-03-1 |
| **Formal Name:** | 5-(3-bromophenyl)-1,3-dihydro-2H-benzofuro[3,2-e]-1,4-diazepin-2-one |
| **MF:** | $C_{17}H_{11}BrN_2O_2$ |
| **FW:** | 355.2 |
| **Purity:** | ≥98% |
| **Supplied as:** | A solid |
| **Storage:** | -20°C |
| **Stability:** | ≥4 years |




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

### Laboratory Procedures

5-BDBD is supplied as a solid. A stock solution may be made by dissolving the 5-BDBD in the solvent of choice, which should be purged with an inert gas. 5-BDBD is slightly soluble (0.1-1 mg/ml) in DMSO.

### Description

5-BDBD is an antagonist of the purinergic $P2X_4$ receptor ($IC_{50}$ = 0.75 µM).[1] It is selective for $P2X_4$ over $P2X_1$, $P2X_{2a}$, $P2X_{2b}$, and $P2X_7$ but does inhibit $P2X_3$ by 35.9% at 10 µM. 5-BDBD (10 µM) decreases field excitatory postsynaptic potential (fEPSP) slopes in rat hippocampal slices. 5-BDBD (28 mg/kg) inhibits nitroglycerin-induced mechanical hyperalgesia in a mouse model of chronic migraine.[2] It decreases plasma creatinine and blood urea nitrogen levels, renal tubular necrosis and apoptosis, and renal neutrophil infiltration in a mouse model of ischemia-reperfusion-induced acute kidney injury.[3] 5-BDBD (1 mg/kg) decreases infarct volume and improves neurological deficits in a mouse model of ischemic stoke induced by middle cerebral artery occlusion (MCAO).[4]

### References


1. Coddou, C., Sandoval, R., Hevia, M.J., *et al.* Characterization of the antagonist actions of 5-BDBD at the rat P2X4 receptor. *Neurosci. Lett.* **690**, 219-224 (2019).
2. Long, T., He, W., Pan, Q., *et al.* Microglia P2X4 receptor contributes to central sensitization following recurrent nitroglycerin stimulation. *J. Neuroinflammation* **15(1)**, 245 (2018).
3. Han, S.J., Lovaszi, M., Kim, M., *et al.* P2X4 receptor exacerbates ischemic AKI and induces renal proximal tubular NLRP3 inflammasome signaling. *FASEB J.* **34(4)**, 5465-5482 (2020).
4. Srivastava, P., Cronin, C.G., Scranton, V.L., *et al.* Neuroprotective and neuro-rehabilitative effects of acute purinergic receptor P2X4 (P2X4R) blockade after ischemic stroke. *Exp. Neurol.* **329:113308**, (2020).





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