

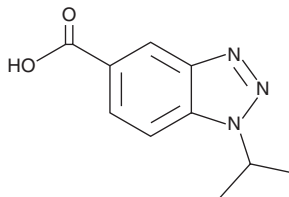
# PRODUCT INFORMATION



## IPBT-5CA

Item No. 15223

**CAS Registry No.:** 306935-41-1  
**Formal Name:** 1-(1-methylethyl)-1H-benzotriazole-5-carboxylic acid  
**Synonym:** IBC-293  
**MF:** C<sub>10</sub>H<sub>11</sub>N<sub>3</sub>O<sub>2</sub>  
**FW:** 205.2  
**Purity:** ≥98%  
**UV/Vis.:** λ<sub>max</sub>: 222, 273 nm  
**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

IPBT-5CA is supplied as a crystalline solid. A stock solution may be made by dissolving the IPBT-5CA in the solvent of choice, which should be purged with an inert gas. IPBT-5CA is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of IPBT-5CA in these solvents is approximately 5, 25, and 16 mg/ml, respectively.

IPBT-5CA is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, IPBT-5CA should first be dissolved in DMF and then diluted with the aqueous buffer of choice. IPBT-5CA has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

The G protein-coupled receptors GPR109A and GPR109B are recognized to be receptors for hydroxy-carboxylic acid (HCA) metabolites, are abundant in adipocytes, and are relevant to atherosclerosis and dyslipidemia.<sup>1,2</sup> IPBT-5CA is a selective agonist of GPR109B (HCA<sub>3</sub>; EC<sub>50</sub> = 400 nM).<sup>3</sup> It displays no activity at GPR109A (HCA<sub>2</sub>).<sup>3</sup> IBC-293 inhibits forskolin-stimulated cAMP release in Chinese hamster ovary cells stably expressing GPR109B (EC<sub>50</sub> = 54 nM) but not in cells expressing GPR109A.<sup>4</sup> This is accompanied by a rapid and transient increase in intracellular calcium and activation of ERK1/2 through a pertussis toxin-sensitive G<sub>i</sub> signaling pathway.<sup>4</sup>

### References

1. Ahmed, K., Tunaru, S., and Offermanns, S. GPR109A, GPR109B and GPR81, a family of hydroxy-carboxylic acid receptors. *Trends Pharmacol. Sci.* **30**(11), 557-562 (2009).
2. Offermanns, S., Colletti, S.L., Lovenberg, T.W., et al. International union of basic and clinical pharmacology. LXXXII: Nomenclature and classification of hydroxy-carboxylic acid receptors (GPR81, GPR109A, and GPR109B). *Pharmacol. Rev.* **63**(2), 269-290 (2011).
3. Semple, G., Skinner, P.J., Cherrier, M.C., et al. 1-Alkyl-benzotriazole-5-carboxylic acids are highly selective agonists of the human orphan G-protein-coupled receptor GPR109b. *J. Med. Chem.* **49**(4), 1227-1230 (2006).
4. Zhou, Q., Li, G., Deng, X.Y., et al. Activated human hydroxy-carboxylic acid receptor-3 signals to MAP kinase cascades via the PLC-dependent PKC and MMP-mediated EGFR pathways. *Br. J. Pharmacol.* **166**(6), 1756-1773 (2012).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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