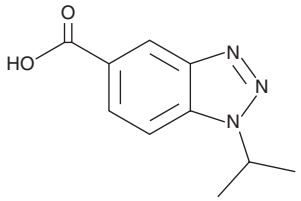
PRODUCT INFORMATION

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:	$C_{10}H_{11}N_3O_2$
FW:	205.2
Purity:	≥98%
UV/Vis.:	λ_{max}: 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.[1,2] IPBT-5CA is a selective agonist of GPR109B (HCA_3; EC_{50} = 400 nM).[3] It displays no activity at GPR109A (HCA_2).[3] IBC-293 inhibits forskolin-stimulated cAMP release in Chinese hamster ovary cells stably expressing GPR109B (EC_{50} = 54 nM) but not in cells expressing GPR109A.[4] This is accompanied by a rapid and transient increase in intracellular calcium and activation of ERK1/2 through a pertussis toxin-sensitive G_i signaling pathway.[4]

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).

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