

Nicotinic acid family

Overview: The nicotinic acid family of receptors (ENSM00500000271913) respond to organic acids, including the lipid-lowering agents nicotinic acid (niacin), acipimox and acifran (Soga *et al.*, 2003; Tunaru *et al.*, 2003; Wise *et al.*, 2003). Although GPR109A and GPR109B are over 95% homologous at the protein level, the former is activated by submicromolar concentrations of nicotinic acid, while the latter is only activated at millimolar concentrations (Wise *et al.*, 2003), while GPR81 fails to respond to nicotinic acid (Tunaru *et al.*, 2003).

Nomenclature	GPR109A	GPR109B	GPR81
Other names	Niacin receptor 1, HM74A, Nic1, Puma-G,	Low-affinity nicotinic acid receptor, HM74, Nic2	GPR104
Ensembl ID	ENSG00000182782	ENSG00000182442	ENSG00000196917
Principal transduction	G _{i/o} (Soga <i>et al.</i> , 2003); Tunaru <i>et al.</i> , 2003; Wise <i>et al.</i> , 2003)	G _{i/o} (Soga <i>et al.</i> , 2003; Wise <i>et al.</i> , 2003)	G _{i/o} (Ge <i>et al.</i> , 2008)
Selective agonists	Nicotinic acid (Soga <i>et al.</i> , 2003; Tunaru <i>et al.</i> , 2003; Wise <i>et al.</i> , 2003), acipimox (Wise <i>et al.</i> , 2003), 3-hydroxybutyrate (Taggart <i>et al.</i> , 2005)	3-Hydroxyoctanoic acid (Ahmed <i>et al.</i> , 2009), IBC293 (Semple <i>et al.</i> , 2006)	Lactate (Cai <i>et al.</i> , 2008; Liu <i>et al.</i> , 2009)
Probes	[³ H]-Nicotinic acid (Soga <i>et al.</i> , 2003)	–	–

Further closely related 7TM receptors include the 5-oxoeicosanoid receptor (ENSG00000162881) and GPR31 (ENSG00000120436).

Abbreviation: IBC293, 1-(1-methylethyl)-1H-benzotriazole-5-carboxylic acid

Further Reading

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