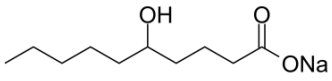
5-Hydroxydecanoate sodium

Cat. No.:	HY-136615
CAS No.:	71186-53-3
Molecular Formula:	$C_{10}H_{19}NaO_3$
Molecular Weight:	210.25
Target:	Potassium Channel
Pathway:	Membrane Transporter/Ion Channel
Storage:	Powder -20°C 3 years 4°C 2 years In solvent -80°C 6 months -20°C 1 month



BIOLOGICAL ACTIVITY

Description	5-Hydroxydecanoate sodium is a selective **ATP-sensitive K^+ (K_{ATP})** channel blocker (**IC_{50}** of ~30 μM). 5-Hydroxydecanoate sodium is a substrate for mitochondrial outer membrane acyl-CoA synthetase and has antioxidant activity[1][2].
IC_{50} & Target	IC50: ~30 μM (K_{ATP})
In Vitro	5-Hydroxydecanoate (5-HD) treatment abolishs the beneficial effects of penehyclidine hydrochloride (PHC) preconditioning in anoxia/reoxygenation (A/R)-induced injury in H9c2 cells. 5-Hydroxydecanoate blocks the inhibitory effect of PHC on Ca^{2+} overload and ROS production. 5-Hydroxydecanoate promotes the release of Cyt-C from mitochondria into cytoplasm. 5-Hydroxydecanoate attenuats the anti-apoptotic effect of PHC. PHC treatment shows remarkably decreases levels of Bax and cleaved caspase-3, and increases levels of Bcl-2. 5-Hydroxydecanoate pretreatment reverses the effects of PHC on their expression levels. 5-Hydroxydecanoate blocks the effects of PHC on K_{ATP} channels[1].
In Vivo	5-Hydroxydecanoate (100 μM) treatment abolishes the effects of ischemic preconditioning (IPC) on the contractile recovery and does not affect its effect on the contracture, lactate production, glycogenolysis and viable tissue in rats [3].

REFERENCES

[1]. Congna Zi, et al. Penehyclidine hydrochloride protects against anoxia/reoxygenation injury in cardiomyocytes through ATP-sensitive potassium channels, and the Akt/GSK-3β and Akt/mTOR signaling pathways. Cell Biol Int. 2020 Jun;44(6):1353-1362.

[2]. Xiantao Li, et al. 5-Hydroxydecanoate and coenzyme A are inhibitors of native sarcolemmal KATP channels in inside-out patches. Biochim Biophys Acta. 2010 Mar;1800(3):385-91.

[3]. M G Marina Prendes, et al. Effects of 5-hydroxydecanoate and ischemic preconditioning on the ischemic-reperfused heart of fed and fasted rats. J Physiol Biochem. 2005 Sep;61(3):447-56.

Caution: Product has not been fully validated for medical applications. For research use only.

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