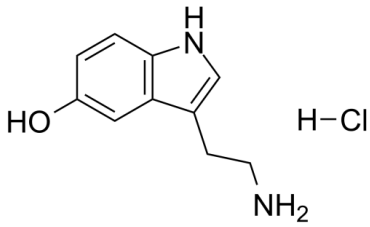
Data Sheet

Product Name:	Serotonin (hydrochloride)
Cat. No.:	CS-0013171
CAS No.:	153-98-0
Molecular Formula:	$C_{10}H_{13}ClN_2O$
Molecular Weight:	212.68
Target:	5-HT Receptor; COMT; Endogenous Metabolite
Pathway:	GPCR/G Protein; Metabolic Enzyme/Protease; Neuronal Signaling
Solubility:	H2O : 100 mg/mL (470.19 mM; Need ultrasonic); DMSO : 125 mg/mL (587.74 mM; Need ultrasonic)



BIOLOGICAL ACTIVITY:

Serotonin (5-Hydroxytryptamine) hydrochloride is a monoamine neurotransmitter in the CNS and an endogenous **5-HT receptor** agonist. Serotonin hydrochloride is also a **catechol O-methyltransferase** (**COMT**) inhibitor with a **K_i** of 44 μM. IC50 & Target: 5-HT receptor[1]

Ki: 44 μM (COMT)[1] **In Vitro:** Serotonin hydrochloride is a monoamine neurotransmitter in the CNS and an endogenous 5-HT receptor agonist. Serotonin hydrochloride also inhibits catechol O-methyltransferase (COMT), an enzyme that contributes to modultion the perception of pain, via non-competitive binding to the site bound by catechol substrates with a binding affinity comparable to the binding affinity of catechol itself (K_i= 44 μM). Results show that addition of 100 μM of Serotonin hydrochloride decreases the reaction velocity of COMT[1]. **In Vivo:** Serotonin hydrochloride produces robust hypersensitivity compare to saline-treated controls ($p<0.001$)[1]. A significant increase in colonic 5-HT content is observed in IL-13$^{-/-}$ mice receiving Serotonin hydrochloride compare to IL-13$^{-/-}$ receiving vehicle following induction of DSS colitis[2].

PROTOCOL (Extracted from published papers and Only for reference)

Cell Assay: [2]For macrophage culture, **peritoneal cavity cells** are collected from WT and IL-13$^{-/-}$ mice with or without dextran sodium sulfate (DSS) treatment and cultured. Cells are plated at a concentration of **3.0×10^6 cells per millilitre**, and treated with either lipopolysaccharides (LPS); (100 ng/mL) or **Serotonin hydrochloride** (**10^{-10} M**) **for 24 hours**. The culture supernatant are collected and stored in -80°C until determination of cytokine levels using protein array system[2]. **Animal Administration:** [2]Dextran sodium sulfate (DSS) colitis is induced by orally administering 5% DSS in drinking water for 5 days. In a separate experiment, **IL-13$^{-/-}$ mice are injected subcutaneously with 100 mg/kg of Serotonin hydrochloride** (5-HTP) **twice daily for 8 days** beginning 3 days prior to induction of DSS colitis; whereas, the control IL-13$^{-/-}$ mice receive saline as vehicle. Animals are anaesthetized prior to euthanization via cervical dislocation at the conclusion of each experiment or if they reach a predetermined end point (ie, loss of ≥20% body weight and/or significant deterioration of body condition)[2].

References:

[1]. Tsao D, et al. Serotonin-induced hypersensitivity via inhibition of catechol O-methyltransferase activity. Mol Pain. 2012 Apr 13;8:25.

[2]. Shajib MS, et al. Interleukin 13 and serotonin: linking the immune and endocrine systems in murine models of intestinal inflammation. PLoS One. 2013 Aug 28;8(8):e72774.

CAIndexNames:

1H-Indol-5-ol, 3-(2-aminoethyl)-, hydrochloride (1:1)

SMILES:

OC1=CC2=C(NC=C2CCN)C=C1.[H]Cl

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

Tel: 610-426-3128 Fax: 888-484-5008 E-mail: sales@ChemScene.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA