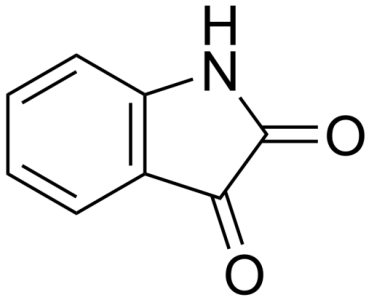
Data Sheet

Product Name:	Isatin
Cat. No.:	CS-W020128
CAS No.:	91-56-5
Molecular Formula:	$C_8H_5NO_2$
Molecular Weight:	147.13
Target:	Apoptosis; Monoamine Oxidase
Pathway:	Apoptosis; Neuronal Signaling
Solubility:	DMSO : 110 mg/mL (747.64 mM; Need ultrasonic); H2O : < 0.1 mg/mL (insoluble)



BIOLOGICAL ACTIVITY:

Isatin (Indoline-2,3-dione) is a potent inhibitor of **monoamine oxidase (MAO)** with an **IC_{50}** of 3 μM. Also binds to central benzodiazepine receptors (IC_{50} against clonazepam, 123 μM)[1]. Also acts as an antagonist of both atrial natriuretic peptide stimulated and nitric oxide-stimulated **guanylate cyclase** activity[2]. Shows effect on the serotonergic system[3]. IC50 & Target: IC50: 3 μM (MAO B)[1] ***In Vitro:*** In dopaminergic SH-SY5Y cells isatin (1-400 μM) induces cell death in dose- and time dependent manner. This death occurred as a continuum of survival, apoptosis and necrosis[2]. ***In Vivo:*** A single dose of isatin (80 mg/kg) has a rapid effect on the serotonergic system in the hypothalamus. Isatin significantly increases 5-HT concentrations in the hypothalamus and cortex but did not significantly alter 5-HIAA concentrations[3].

References:

[1]. Glover V, et al. Isatin: Identity with the Purified Endogenous Monoamine Oxidase Inhibitor Tribulin. Journal of Neurochemistry, 51(2), 656–659.

[2]. Igosheva N, et al. Isatin, an endogenous monoamine oxidase inhibitor, triggers a dose- and time-dependent switch from apoptosis to necrosis in human neuroblastoma cells. Neurochem Int. 2005 Aug;47(3):216-24.

[3]. McIntyre IM, et al. Serotonergic effects of isatin: an endogenous MAO inhibitor related to tribulin. J Neural Transm Gen Sect. 1990;79(1-2):35-40.

CAIndexNames:

1H-Indole-2,3-dione

SMILES:

O=C1NC2=C(C=CC=C2)C1=O

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