

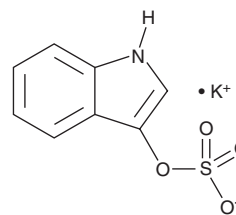
PRODUCT INFORMATION



Indoxyl Sulfate (potassium salt)

Item No. 16926

CAS Registry No.: 2642-37-7
Formal Name: 1H-indol-3-ol, 3-(hydrogen sulfate), monopotassium salt
MF: C₈H₆NO₄S • K
FW: 251.3
Purity: ≥98%
UV/Vis.: λ_{max}: 221, 281 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

Indoxyl sulfate (potassium salt) is supplied as a crystalline solid. A stock solution may be made by dissolving the indoxyl sulfate (potassium salt) in the solvent of choice, which should be purged with an inert gas. Indoxyl sulfate (potassium salt) is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of indoxyl sulfate (potassium salt) in these solvents is approximately 30 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of indoxyl sulfate (potassium salt) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of indoxyl sulfate (potassium salt) in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Indoxyl sulfate is a uremic toxin and a metabolite of tryptophan (Item No. 29600).¹ It is formed *via* sulfation of indoxyl, an intermediate generated from tryptophan by intestinal bacteria, by the sulfotransferase (SULT) isoform 1A1 variant 2 (SULT1A1*2) in the liver.^{1,2} Indoxyl sulfate activates the aryl hydrocarbon receptor (AhR) in HepG2 40/6 hepatoma cells (EC₅₀ = 12.1 nM in a reporter assay).³ It also inhibits the organic anion transporter (OAT) isoforms OAT1 and OAT3 (K_{iS} = 34.2 and 74.4 μM, respectively for the rat transporters) in S2 proximal tubule cells.⁴ Indoxyl sulfate (0.2 and 1 mM) increases superoxide anion and nitric oxide levels in isolated human mononuclear blood cells.⁵ It increases serum creatinine and blood urea nitrogen (BUN) levels in the 5/6 nephrectomized rat model of chronic renal failure when administered at a dose of 50 mg/kg.⁴

References

1. Niwa, T. Uremic toxicity of indoxyl sulfate. *Nagoya J. Med. Sci.* **72(1-2)**, 1-11 (2010).
2. Banoglu, E. and King, R.S. Sulfation of indoxyl by human and rat aryl (phenol) sulfotransferases to form indoxyl sulfate. *Eur. J. Drug Metab. Pharmacokinet.* **27(2)**, 135-140 (2002).
3. Schroeder, J.C., Dinatale, B.C., Murray, I.A., *et al.* The uremic toxin 3-indoxyl sulfate is a potent endogenous agonist for the human aryl hydrocarbon receptor. *Biochemistry* **49(2)**, 393-400 (2010).
4. Enomoto, A., Takeda, M., Tojo, A., *et al.* Role of organic anion transporters in the tubular transport of indoxyl sulfate and the induction of its nephrotoxicity. *J. AM. Soc. Nephrol.* **13(7)**, 1711-1720 (2002).
5. Pieniazek, A., Gwozdziński, L., Hikiś, P., *et al.* Indoxyl sulfate generates free radicals, decreases antioxidant defense, and leads to damage to mononuclear blood cells. *Chem. Res. Toxicol.* **31(9)**, 869-875 (2018).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897
[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM