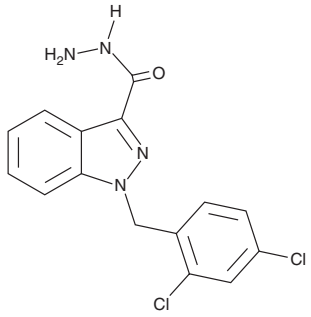
PRODUCT INFORMATION

Adjudin

Item No. 22939

CAS Registry No.:	252025-52-8
Formal Name:	1-[(2,4-dichlorophenyl)methyl]-1H-indazole-3-carboxylic acid, hydrazide
Synonym:	AF-2364
MF:	$C_{15}H_{12}Cl_2N_4O$
FW:	335.2
Purity:	≥98%
UV/Vis.:	λ_{max}: 300 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

Adjudin is supplied as a crystalline solid. A stock solution may be made by dissolving the adjudin in the solvent of choice, which should be purged with an inert gas. Adjudin is soluble in organic solvents such as DMSO and dimethyl formamide (DMF). The solubility of adjudin in these solvents is approximately 20 and 30 mg/ml, respectively.

Adjudin is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, adjudin should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Adjudin has a solubility of approximately 0.05 mg/ml in a 1:20 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Adjudin is a derivative of lonidamine that inhibits human spermatozoa capacitance, potentially by blocking chloride channels.[1] It inhibits spermatozoa hyperactivated motility and the acrosome reaction and prevents sperm-egg fusion in zona-free hamster eggs. It also disrupts Sertoli-germ cell junctions by increasing tight junction and basal ectoplasmic specialization protein levels, which tightens the cell permeability barrier dose-dependently *in vitro*.[2] Adjudin (25 and 50 mg/kg) increases testin expression in adult rat testes within one day and depletes spermatids and spermatocytes within 14 days.[3] Under various dosing parameters, adjudin reversibly induces infertility of male rats within 3-7 weeks, which lasts 4-14 weeks, without affecting serum levels of luteinizing hormone (LH), follicle stimulating hormone (FSH), or testosterone. Adjudin also decreases proliferation of SGC-7901, MDA-MB-231, Smmc-7721, and MIA Paca-2 cells (IC_{50}s = 58, 13.8, 72.3, and 52.7 µM, respectively) and induces apoptosis *via* the caspase-3-dependent pathway.[4]

References

1. Li, K., Ni, Y., He, Y., *et al.* Inhibition of sperm capacitation and fertilizing capacity by adjudin is mediated by chloride and its channels in humans. *Hum. Repod.* **28(1)**, 47-59 (2013).
2. Su, L., Cheng, C.Y., and Mruk, D.D. Adjudin-mediated Sertoli-germ cell junction disassembly affects Sertoli cell barrier function in vitro and in vivo. *Int. J. Biochem. Cell Biol.* **42(11)**, 1864-1875 (2010).
3. Cheng, C.Y., Silvestrini, B., Grima, J., *et al.* Two new male contraceptives exert their effects by depleting germ cells prematurely from the testis. *Biol. Reprod.* **65(2)**, 449-461 (2001).
4. Xie, Q.R., Liu, Y., Shao, J., *et al.* Male contraceptive Adjudin is a potential anti-cancer drug. *Biochem. Pharmacol.* **85(3)**, 345-355 (2013).

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