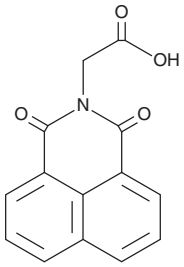
PRODUCT INFORMATION

Alrestatin

Item No. 29888

CAS Registry No.:	51411-04-2
Formal Name:	1,3-dioxo-1H-benz[de] isoquinoline-2(3H)-acetic acid
Synonyms:	AY 22284, NSC 299132
MF:	$C_{14}H_9NO_4$
FW:	255.2
Purity:	≥98%
UV/Vis.:	λ_{max}: 213, 233, 332 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

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

Alrestatin is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, alrestatin should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Alrestatin has a solubility of approximately 0.25 mg/ml in a 1:3 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Alrestatin is an inhibitor of aldose reductase (IC_{50} = 1.5 µM for rat lens enzyme).[1] It is selective for rat lens aldose reductase over rat kidney aldehyde reductase (IC_{50} = 58 µM). Alrestatin reduces basal and tyramine-induced norepinephrine release in rat pancreatic preparations.[2] *In vivo*, alrestatin (0.75 mmol/kg) increases plasma insulin levels in fasted anesthetized rats. Alrestatin inhibits the lens and sciatic nerve accumulation of polyols in a rat model of streptozotocin-induced diabetes.[3] It also inhibits gastric acid secretion and ulcer formation induced by pyloric ligation in rats (ED_{50}s = 90 and 330 mg/kg, respectively).

References

1. Sato, S. and Kador, P.F. Inhibition of aldehyde reductase by aldose reductase inhibitors. *Biochem. Pharmacol.* **40(5)**, 1033-1042 (1990).
2. Kobric, M. and Lippmann, W. Effect of alrestatin sodium on glucose-stimulated insulin secretion in the fasted anaesthetized rat. *Horm. Metab. Res.* **10(6)**, 495-500 (1978).
3. Lippmann, W., Seethaler, K., Borella, L.E., *et al.* Alrestatin: Gastric acid antisecretory-antiulcer activity in the rat. *Digestion* **18(1-2)**, 35-44 (1978).

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