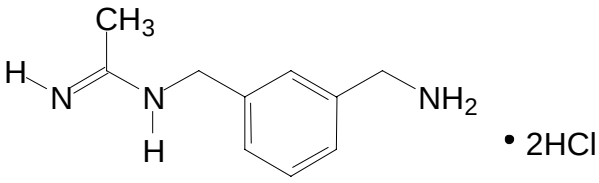
ProductInformation

1400W

Product Number **W 4262**
Storage Temperature –20 °C

Synonym: N-(3-[Aminomethyl]benzyl)acetamidine



Product Description
Molecular Formula: $C_{10}H_{15}N_3 \bullet 2HCl$
Molecular Weight: 250.2

1400W is a slow, tight binding inhibitor of human inducible nitric oxide synthase (iNOS) with a binding constant of 2.0 µM. Inhibition is dependent on the cofactor NADPH. After treatment with 1400W, iNOS does not recover activity after 2 hours, indicating 1400W is either an irreversible inhibitor or an extremely slow reversible inhibitor of human iNOS. 1400W appears to exhibit slow saturation kinetics with a maximal rate constant of 0.028 s^{-1}.[1]

In vitro, 1400W was shown to be at least 5,000-fold more selective for iNOS than eNOS. 1400W was greater than 1,000-fold more potent against rat iNOS than eNOS in rat aortic ring studies.[1] 1400W was shown to be greater than 50 times more potent against iNOS than eNOS in a rat model of endotoxin-induced vascular injury.[1] Continuous infusion of 1400W decreased tumor weight approximately 50% in mice bearing murine mammary carcinoma.[2] 1400W has also been reported to be a potent inhibitor of colonic microvascular injury associated with iNOS induction in vivo.[3] Excess amounts of nitric oxide resulting from induction of iNOS are proposed to be involved in the mechanisms of neurotoxicity after cerebral ischaemia. Incubation with 1400W from the start of oxygen-glucose deprivation was reported to decrease damage to cerebral tissue.[4]

Precautions and Disclaimer
This product is for laboratory research use only. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions
Solutions of 1400W may be prepared using organic solvents or aqueous buffers. 1400W is more soluble in aqueous systems (>10 mg/ml) than organic solvents (<0.25 mg/ml); however, the compound is less stable in aqueous systems and aqueous solutions are best prepared daily.

Stock solutions of 1400W may be prepared with organic solvents such as ethanol, N,N-dimethylformamide, or DMSO. The solubility of 1400W in organic solvents is typically less than 0.25 mg/ml. These stock solutions can be stored at –20 °C for six months. Dilution of the organic stock solution into aqueous buffer or isotonic saline should be made prior to performing biological experiments.

Aqueous solutions can be prepared directly by dissolving the product in an aqueous buffer. 1400W is soluble in PBS, pH 7.2, at >10 mg/ml. Aqueous solutions should be prepared fresh daily.

Storage/Stability
It is recommended to store the product as supplied at –20 °C.

References

1. Garvey, E.P., et al, J. Biol.Chem., **272**, 4959-4963 (1997).
2. Thomsen, L.L., et al, Cancer Res., **57**, 3300-3304 (1997).
3. Laszlo, F., and Whittle, B.J., Eur. J. Pharmacol., **334**, 99-102 (1997).
4. Cardenas, A., et al, Eur. J. Pharmacol., **354**, 161-165 (1998).

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