

# PRODUCT INFORMATION



## Epalrestat-d<sub>5</sub> Item No. 29993

**Formal Name:** 5Z-[(2E)-2-methyl-3-phenyl-d<sub>5</sub>-2-propen-1-ylidene]-4-oxo-2-thioxo-3-thiazolidineacetic acid

**MF:** C<sub>15</sub>H<sub>8</sub>D<sub>5</sub>NO<sub>3</sub>S<sub>2</sub>

**FW:** 324.4

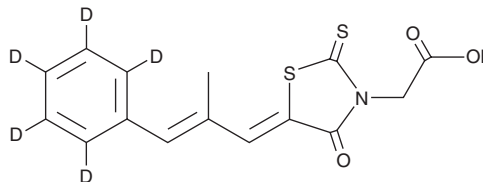
**Chemical Purity:** ≥98% (Epalrestat)

**Deuterium Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>5</sub>); ≤1% d<sub>0</sub>

**Supplied as:** A solid

**Storage:** -20°C

**Stability:** ≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

Epalrestat-d<sub>5</sub> is intended for use as an internal standard for the quantification of epalrestat (Item No. 15214) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated versus unlabeled).

Epalrestat-d<sub>5</sub> is supplied as a solid. A stock solution may be made by dissolving the epalrestat-d<sub>5</sub> in the solvent of choice, which should be purged with an inert gas. Epalrestat-d<sub>5</sub> is slightly soluble in DMSO and methanol.

### Description

Epalrestat is an inhibitor of aldose reductase (IC<sub>50</sub>s = 0.01 and 0.26 μM for rat lens and human placenta aldose reductase, respectively).<sup>1</sup> It inhibits glucose-induced sorbitol accumulation in isolated rat lens, rat sciatic nerve, and human erythrocytes (IC<sub>50</sub>s = 1.5, 5, and 1.5 μM, respectively). It decreases high glucose-induced proliferation of vascular smooth muscle cells when used at a concentration of 10 nM and prevents high glucose-induced intracellular NADH/NAD<sup>+</sup> increases and membrane-bound PKC activation at 100 nM.<sup>2,3</sup> Epalrestat (20 and 40 mg/kg) improves motor nerve conduction velocity and decreases sorbitol content in the sciatic nerve and erythrocytes in a rat model of streptozotocin-induced diabetic neuropathy.<sup>4</sup> It also prevents capillary strand formation in a rat model of diabetes-induced retinal microangiopathy when administered at a dose of 50 mg/kg.<sup>5</sup>

### References

1. Terashima, H., Hama, K., Yamamoto, R., *et al. J. Pharmacol. Exp. Ther.* **229**(1), 226-230 (1984).
2. Yasunari, K., Kohno, M., Kano, H., *et al. Hypertension* **35**(5), 1092-1098 (2000).
3. Yasunari, K., Kohno, M., Kano, H., *et al. Arterioscler. Thromb. Vasc. Biol.* **15**(12), 2207-2212 (1995).
4. Kikkawa, R., Hatanaka, I., Yasuda, H., *et al. Diabetologia* **24**(4), 290-292 (1983).
5. Kojima, K., Matsubara, H., Mizuno, K., *et al. Nippon Ganka Gakkai Zasshi* **89**(2), 247-256 (1985).

#### 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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