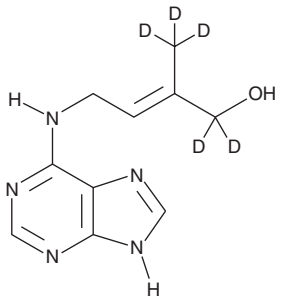
PRODUCT INFORMATION

trans-Zeatin-d_5

Item No. 28534

Formal Name:	2E-methyl-d_3-4-(9H-purin-6-ylamino)-but-2-en-1,1-d_2-1-ol
MF:	$C_{10}H_8D_5N_5O$
FW:	224.3
Chemical Purity:	≥98% (*trans*-Zeatin)
Deuterium Incorporation:	≥99% deuterated forms (d_1-d_5); ≤1% d_0
Supplied as:	A solid
Storage:	-20°C
Stability:	≥4 years
Item Origin:	Synthetic



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

Laboratory Procedures

trans-Zeatin-d_5 is intended for use as an internal standard for the quantification of *trans*-zeatin (Item No. 13226) 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).

trans-Zeatin-d_5 is supplied as a solid. A stock solution may be made by dissolving the *trans*-zeatin-d_5 in the solvent of choice, which should be purged with an inert gas. *trans*-Zeatin-d_5 is soluble in methanol and DMSO.

Description

trans-Zeatin is a cytokinin plant growth regulator with antioxidant and neuroprotective activities.[1-4] It binds to the cytokinin receptor *Arabidopsis* histidine kinase 3 (AHK3) with a K_D value of 1.3 nM.[3] *trans*-Zeatin increases chlorophyll levels in etiolated *Cucumus sativus* cotyledons in a concentration-dependent manner.[1] It increases callus growth and shoot formation in *N. tabacum* calluses when used at concentrations of 5 and 50 µM.[2] *trans*-Zeatin (25-100 µM) reduces production of reactive oxygen species (ROS) induced by amyloid β (25-35) (Aβ25-35) in PC12 cells.[4] It reduces scopolamine-induced spontaneous alternations in the Y-maze, indicating enhanced spatial memory, in mice when administered at doses of 1.5, 3, and 4.5 mg/kg per day.

References

1. Fletcher, R.A. and McCullagh, D. Cytokinin-induced chlorophyll formation in cucumber cotyledons. *Planta* **101(1)**, 88-90 (1971).
2. Yamada, Y., Sekiya, J., and Koshimizu, K. Cytokinin-induced shoot formation. *Phytochemistry* **11(3)**, 1019-1021 (1972).
3. Romanov, G.A., Lomin, S.N., and Schmülling, T. Biochemical characteristics and ligand-binding properties of *Arabidopsis* cytokinin receptor AHK3 compared to CRE1/AHK4 as revealed by a direct binding assay. *J. Exp. Bot.* **57(15)**, 4051-4058 (2006).
4. Choi, S.J., Jeong, C.-H., Choi, S.-G., *et al.* Zeatin prevents amyloid β-induced neurotoxicity and scopolamine-induced cognitive deficits. *J. Med. Food* **12(2)**, 271-277 (2009).

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