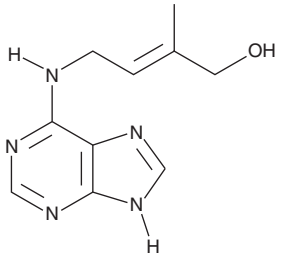
PRODUCT INFORMATION

trans-Zeatin

Item No. 13226

CAS Registry No.:	1637-39-4
Formal Name:	2E-methyl-4-(9H-purin-6-ylamino)-2-buten-1-ol
MF:	$C_{10}H_{13}N_5O$
FW:	219.2
Purity:	≥98%
UV/Vis.:	λ_{max}: 210, 269 nm
Supplied as:	A crystalline 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

trans-Zeatin is supplied as a crystalline solid. A stock solution may be made by dissolving the *trans*-zeatin in the solvent of choice, which should be purged with an inert gas. *trans*-Zeatin is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of *trans*-zeatin in these solvents is approximately 3 and 0.5 mg/ml, respectively.

trans-Zeatin is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, *trans*-Zeatin should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. *trans*-Zeatin has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

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.[5] *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).
5. 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).

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