

PRODUCT INFORMATION



(+)-Catechin-d₄

Item No. 46318

Formal Name: (2R,3S)-2-(3,4-dihydroxyphenyl)
chromane-4,4,6,8-d₄-3,5,7-triol

Synonyms: D-(+)-Catechin-d₄, Catechuic Acid-d₄,
Cyanidol-d₄

MF: C₁₅H₁₀D₄O₆

FW: 294.3

Chemical Purity: ≥95% ((+)-Catechin)

Deuterium

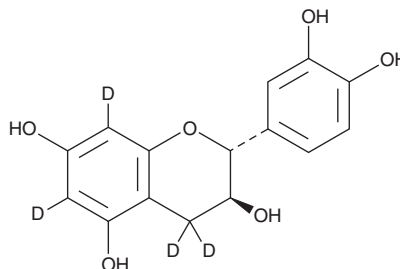
Incorporation: ≥99% deuterated forms (d₁-d₄); ≤1% d₀

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

(+)-Catechin-d₄ is intended for use as an internal standard for the quantification of (+)-catechin (Item No. 70940) 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).

(+)-Catechin-d₄ is supplied as a solid. A stock solution may be made by dissolving the (+)-catechin-d₄ in the solvent of choice, which should be purged with an inert gas. (+)-Catechin-d₄ is slightly soluble (0.1-1 mg/ml) in DMSO.

Description

(+)-Catechin is a polyketide synthase-derived polyphenolic flavonoid that has been found in *V. vinifera* and has diverse biological activities.¹⁻⁴ It inhibits COX-1 (IC₅₀ = 1.4 μM) and lipid peroxidation induced by AAPH (Item No. 82235) when used at a concentration of 20 μM.^{2,3} (+)-Catechin inhibits the proliferation of MCF-7, T47D, and MDA-MB-231 breast cancer cells (IC₅₀s = 0.4, 0.1, and 9.3 pM, respectively) and the binding of estradiol to the estrogen receptor (ER) and progesterone receptor (PR) in MCF-7 cells (IC₅₀s = 22.2 and 38.3 pM, respectively).⁴

References

1. Tauchen, J., Huml, L., Rimpelova, S., *et al.* Flavonoids and related members of the aromatic polyketide group in human health and disease: Do they really work? *Molecules* **25**(17), 3846 (2020).
2. Waffo-Tégou, P., Hawthorne, M.E., Cuendet, M., *et al.* Potential cancer-chemopreventive activities of wine stilbenoids and flavans extracted from grape (*Vitis vinifera*) cell cultures. *Nutr. Cancer* **40**(2), 173-179 (2001).
3. Frémont, L., Belguendouz, L., and Delpal, S. Antioxidant activity of resveratrol and alcohol-free wine polyphenols related to LDL oxidation and polyunsaturated fatty acids. *Life Sci.* **64**(26), 2511-2521 (1999).
4. Damianaki, A., Bakogeorgou, E., Kampa, M., *et al.* Potent inhibitory action of red wine polyphenols on human breast cancer cells. *J. Cell. Biochem.* **78**(3), 429-441 (2000).

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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