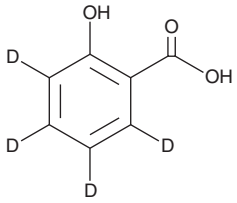
PRODUCT INFORMATION

Salicylic Acid-d_4

Item No. 35418

CAS Registry No.: 78646-17-0
Formal Name: 6-hydroxy-benzoic-2,3,4,5-d_4 acid
Synonym: 2-Hydroxybenzoic Acid-d_4
MF: $C_7H_2D_4O_3$
FW: 142.1
Chemical Purity: ≥98% (Salicylic Acid)
Deuterium Incorporation: ≥99% deuterated forms (d_1-d_4); ≤1% d_0
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

Salicylic acid-d_4 is intended for use as an internal standard for the quantification of salicylic acid 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).

Salicylic acid-d_4 is supplied as a crystalline solid. A stock solution may be made by dissolving the salicylic acid-d_4 in the solvent of choice, which should be purged with an inert gas. Salicylic acid-d_4 is soluble in DMSO.

Description

Salicylic acid is an active metabolite of the COX inhibitor aspirin (Item No. 70260) and a plant hormone that has been found in *Cucumis sativus*.[1,2] It protects *Cucumis sativus* leaves from infection by *S. fuliginea* or *E. cichoracearum* when used at a concentration of 10 mM, as well as inhibits *A. thaliana* root growth at 0.3 mM.[2,3] Salicylic acid (1 and 4 mM) reduces IFN-γ- and TNF-α-induced increases in *NOS2* expression in primary rat cardiac fibroblasts.[4] It decreases urine prostaglandin E_2 (PGE_2; Item No. 14010) levels in dogs when administered at a dose of 40 mg/kg.[5]

References

1. Klessig, D.F. Newly identified targets of aspirin and its primary metabolite, salicylic acid. *DNA Cell Biol.* **35(4)**, 163-166 (2016).
2. Feussner, I., Fritz, I.G., Hause, B., *et al.* Induction of a new lipoxygenase form in cucumber leaves by salicylic acid or 2,6-dichloroisonicotinic acid. *Bot. Acta* **110(2)**, 101-108 (1997).
3. Kim, T.-H., Kunz, H.-H., Bhattacharjee, S., *et al.* Natural variation in small molecule-induced TIR-NB-LRR signaling induces root growth arrest via EDS1- and PAD4-complexed R protein VICTR in *Arabidopsis*. *Plant Cell* **24(12)**, 5177-5192 (2012).
4. Farivar, R.S. and Brecher, P. Salicylate is a transcriptional inhibitor of the inducible nitric oxide synthase in cultured cardiac fibroblasts. *J. Biol. Chem.* **271(49)**, 31585-31592 (1996).
5. Zambraski, E.J., Atkinson, D.C., and Diamond, J. Effects of salicylate vs. aspirin on renal prostaglandins and function in normal and sodium-depleted dogs. *J. Pharmacol. Exp. Ther.* **247(1)**, 96-103 (1988).

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