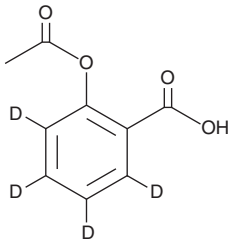
PRODUCT INFORMATION

Aspirin-d_4

Item No. 18243

CAS Registry No.:	97781-16-3
Formal Name:	6-(acetyloxy)-benzoic-2,3,4,5-d_4 acid
Synonym:	Acetylsalicylic Acid-d_4
MF:	$C_9H_4D_4O_4$
FW:	184.2
Chemical Purity:	≥95% (Aspirin)
Deuterium Incorporation:	≥99% deuterated forms (d_1-d_4); ≤1% d_0
UV/Vis.:	λ_{max}: 225 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years



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

Laboratory Procedures

Aspirin-d_4 is intended for use as an internal standard for the quantification of aspirin (Item No. 70260) 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).

Aspirin-d_4 is supplied as a crystalline solid. A stock solution may be made by dissolving the aspirin-d_4 in the solvent of choice, which should be purged with an inert gas. Aspirin-d_4 is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of aspirin-d_4 in these solvents is approximately 80, 41, and 30 mg/ml, respectively.

Description

Aspirin is a non-steroidal anti-inflammatory drug (NSAID) and a covalent inhibitor of COX-1 and COX-2 (IC_{50}s = 4.45 and 13.88 µM, respectively, for the human enzymes).[1] It is also an inhibitor of hematopoietic prostaglandin D synthase (H-PGDS; IC_{50} = 750 µM for the ovine enzyme).[2] Aspirin (6 µg/ml) inhibits epinephrine- and ADP-induced platelet aggregation.[3] *In vivo*, aspirin (30 mg/kg) reduces infarct volume and microglial infiltration in a rat model of ischemia-reperfusion injury induced by middle cerebral artery occlusion (MCAO).[4] It decreases macrophage infiltration into, increases the number of smooth muscle cells and levels of collagen in, and reduces the area of, atherosclerotic lesions in LDL receptor-deficient mice fed a high-fat diet when administered in the drinking water at 30 mg/L.[5] Formulations containing aspirin have been used in the treatment of pain, fever, and in stroke prevention.

References

1. Cryer, B. and Feldman, M. *Am. J. Med.* **104(5)**, 413-421 (1998).
2. Johnson, J.L., Wimsatt, J., Buckel, S.D., *et al. Arch. Biochem. Biophys.* **324(1)**, 26-34 (1995).
3. Papp, J., Sandor, B., Vamos, Z., *et al. Clin. Hemorheol. Microcirc.* **56(1)**, 1-12 (2014).
4. Whitehead, S.N., Bayona, N.A., Cheng, G., *et al. Stroke* **38(2)**, 381-387 (2007).
5. Cyrus, T., Sung, S., Zhao, L., *et al. Circulation* **106**, 1282-1287 (2002).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.**CAYMANCHEM**.COM