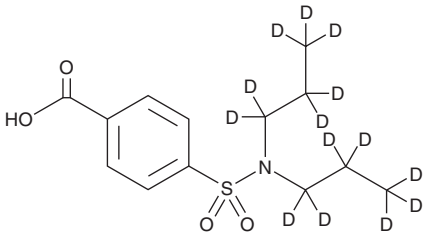
# PRODUCT INFORMATION

## Probenecid-$d_{14}$

*Item No. 26787*

**CAS Registry No.:** 1189657-87-1
**Formal Name:** 4-[[di(propyl-1,1,2,2,3,3,3-$d_7$)amino] sulfonyl]-benzoic acid
**MF:** $C_{13}H_5D_{14}NO_4S$
**FW:** 299.4
**Chemical Purity:** ≥98% (Probenecid)
**Deuterium Incorporation:** ≥99% deuterated forms ($d_1$-$d_{14}$); ≤1% $d_0$
**Supplied as:** A 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

Probenecid-$d_{14}$ is intended for use as an internal standard for the quantification of probenecid (Item No. 14981) 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).

Probenecid-$d_{14}$ is supplied as a solid. A stock solution may be made by dissolving the probenecid-$d_{14}$ in the solvent of choice, which should be purged with an inert gas. Probenecid-$d_{14}$ is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of probenecid-$d_{14}$ in ethanol is approximately 10 mg/ml and approximately 30 mg/ml in DMSO and DMF.

### Description

Probenecid is a benzoic acid derivative that inhibits organic anion transporters (OATs) but activates the transient receptor potential (TRP) channel TRPV2. It inhibits OAT1, OAT3, and OAT6 with $K_i$ values of 6.3, 9.0, and 8.4 µM, respectively, as well as OAT2 with an $IC_{50}$ value of 0.67 µM.[1-3] It is a poor inhibitor of the organic cation transporters OCT1 and OCT2 ($IC_{50}$ = 1.6 and 1.7 mM, respectively).[4] It also acts as an agonist of TRPV2 ($EC_{50}$ = 31.9 µM), eliciting nociceptive behavior under inflammatory conditions in mice. Formulations containing probenecid have been used in the treatment of gouty arthritis.[5]

### References


1. Kaler, G., Truong, D.M., Khandelwal, A., *et al. J. Biol. Chem.* **282(33)**, 23841-23853 (2007).
2. Takeda, M., Narikawa, S., Hosoyamada, M., *et al. Eur. J. Pharmacol.* **419(2-3)**, 113-120 (2001).
3. Khamdang, S., Takeda, M., Shimoda, M., *et al. J. Pharmacol. Sci.* **94(2)**, 197-202 (2004).
4. Arndt, P., Volk, C., Gorboulev, V., *et al. Am. J. Physiol. Renal Physiol.* **281(3)**, F454-F468 (2001).
5. Robbins, N., Koch, S.E., Tranter, M., *et al. Cardiovasc. Toxicol.* **12(1)**, 1-9 (2012).





**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