

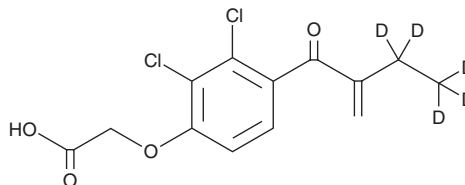
# PRODUCT INFORMATION



## Ethacrynic Acid-d<sub>5</sub>

Item No. 28537

**CAS Registry No.:** 1330052-59-9  
**Formal Name:** 2-(2,3-dichloro-4-(2-methylenebutanoyl-3,3,4,4,4-d<sub>5</sub>)phenoxy)acetic acid  
**MF:** C<sub>13</sub>H<sub>7</sub>Cl<sub>2</sub>D<sub>5</sub>O<sub>4</sub>  
**FW:** 308.2  
**Chemical Purity:** ≥95% (Ethacrynic Acid)  
**Deuterium Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>5</sub>); ≤1% d<sub>0</sub>  
**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

Ethacrynic acid-d<sub>5</sub> is intended for use as an internal standard for the quantification of ethacrynic acid (Item No. 19536) 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).

Ethacrynic acid-d<sub>5</sub> is supplied as a solid. A stock solution may be made by dissolving the ethacrynic acid-d<sub>5</sub> in the solvent of choice, which should be purged with an inert gas. Ethacrynic acid-d<sub>5</sub> is slightly soluble in methanol and DMSO.

### Description

Ethacrynic acid is a loop diuretic with anticancer activity.<sup>1-3</sup> It inhibits the Na-K-2Cl (NKCC) cotransporter in duck erythrocytes (IC<sub>50</sub> = 0.18 mM) and ATP-dependent chloride uptake in rat renal plasma membrane vesicles when used at a concentration of 0.3 mM.<sup>1,4</sup> Ethacrynic acid also inhibits glutathione S-transferase P1-1 (GSTP1-1) and GSTA3-3 (IC<sub>50</sub>s = 4.9 and ~0.4 μM, respectively), and inhibits Wnt/β-catenin signaling in a cell-based reporter assay.<sup>2,5</sup> It is cytotoxic to primary chronic lymphocytic leukemia cells (IC<sub>50</sub> = 8.56 μM), as well as MCF-7, MDA-MB-231, and 4T1 cancer cells (IC<sub>50</sub>s = 45.53, 39.64, and 25.23 μM, respectively).<sup>2,3</sup> Ethacrynic acid (250 μg per day) increases tumor growth reduction induced by the EGFR family inhibitors afatinib (Item Nos. 11492 | 21567) or neratinib (Item No. 18404) in a 4T1 murine breast cancer model.<sup>3</sup> Formulations containing ethacrynic acid have been used in the treatment of edema.

### References

1. Palfrey, H.C. and Leung, S. *Am. J. Physiol.* **264**(5 Pt 1), C1270-C1277 (1993).
2. Lu, D., Liu, J.X., Endo, T., et al. *PLoS One* **4**(12), e8294 (2009).
3. Liu, B., Huang, X., Hu, Y., et al. *Oncotarget* **7**(36), 58038-58050 (2016).
4. Kunugi, Y., Hiraoka, Y., Hashimoto, Y., et al. *Japan J.Pharmacol.* **57**(2), 167-174 (1991).
5. Musdal, Y., Hegazy, U.M., Aksoy, Y., et al. *Chem. Biol. Interact.* **205**(1), 53-62 (2013).

#### 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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