

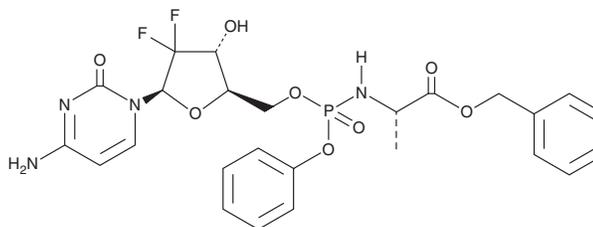
# PRODUCT INFORMATION



## NUC-1031

Item No. 9003247

**CAS Registry No.:** 840506-29-8  
**Formal Name:** N-(2'-deoxy-2',2'-difluoro-P-phenyl-5'-cytidyl)-L-alanine, phenylmethyl ester  
**MF:** C<sub>25</sub>H<sub>27</sub>F<sub>2</sub>N<sub>4</sub>O<sub>8</sub>P  
**FW:** 580.5  
**Purity:** ≥98% (mixture of diastereomers)  
**UV/Vis.:** λ<sub>max</sub>: 245 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

NUC-1031 is supplied as a crystalline solid. A stock solution may be made by dissolving the NUC-1031 in the solvent of choice. NUC-1031 is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of NUC-1031 in these solvents is approximately 10, 14, and 12 mg/ml, respectively.

NUC-1031 is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, NUC-1031 should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. NUC-1031 has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

NUC-1031 is a prodrug form of the anticancer nucleoside analog gemcitabine (Item No. 11690).<sup>1,2</sup> NUC-1031 is more lipophilic than gemcitabine and enters cells through passive diffusion.<sup>1</sup> It inhibits the growth of L1210, CEM, MP-2, and BxPC-3 cancer cells *in vitro* (IC<sub>50</sub>s = 35, 30, 60, and 40 nM, respectively).<sup>2</sup> NUC-1031 (0.076 mmol/kg) reduces tumor growth in Mia-PaCa-2 and BxPC-3 mouse xenograft models, which are partially responsive and resistant to gemcitabine, respectively.<sup>3</sup>

### References

1. Thornton, P.J., Kadri, H., Miccoli, A., *et al.* Nucleoside phosphate and phosphonate prodrug clinical candidates. *J. Med. Chem.* **59**(23), 10400-10410 (2016).
2. Slusarczyk, M., Lopez, M.H., Balzarini, J., *et al.* Application of ProTide technology to gemcitabine: A successful approach to overcome the key cancer resistance mechanisms leads to a new agent (NUC-1031) in clinical development. *J. Med. Chem.* **57**(4), 1531-1542 (2014).
3. McGuigan, C., Habib, N.A., Wasan, H.S., *et al.* A phosphoramidate ProTide (NUC-1031) and acquired and intrinsic resistance to gemcitabine. *J. Clin. Oncol.* **29**(15\_suppl), e13540 (2016).

#### 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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