

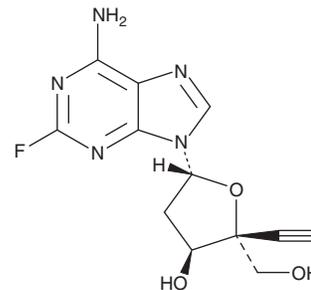
# PRODUCT INFORMATION



## EFdA

Item No. 33873

**CAS Registry No.:** 865363-93-5  
**Formal Name:** 2'-deoxy-4'-C-ethynyl-2-fluoro-adenosine  
**Synonyms:** 4'Ed2FA, 4'-ethynyl-2-fluoro-2'-Deoxyadenosine, EFdA, MK-8591  
**MF:** C<sub>12</sub>H<sub>12</sub>FN<sub>5</sub>O<sub>3</sub>  
**FW:** 293.3  
**Purity:** ≥98%  
**UV/Vis.:** λ<sub>max</sub>: 263 nm  
**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

EFdA is supplied as a solid. A stock solution may be made by dissolving the EFdA in the solvent of choice, which should be purged with an inert gas. EFdA is soluble in the organic solvent DMSO.

### Description

EFdA is a nucleoside reverse transcriptase inhibitor (NRTI).<sup>1</sup> It inhibits HIV-1 reverse transcriptase via multiple mechanisms. EFdA inhibits replication of the HIV-1 strain HIV-1 IIIb, the laboratory isolate HIV NL4-3, and the clinical isolate HIV-2 EHO in MT-4 cells (EC<sub>50</sub>s = 73, 50, and 98 pM, respectively).<sup>2</sup> It is also active against drug-resistant HIV with EC<sub>50</sub> values ranging from 0.23 to 23 nM in a multinuclear activation of a galactosidase indicator (MAGI) assay.<sup>3</sup> EFdA (1 and 10 mg/kg per day) prevents infection with HIV JR-CSF in humanized mice.<sup>4</sup>

### References

1. Michailidis, E., Huber, A.D., Ryan, E.M., *et al.* 4'-Ethynyl-2-fluoro-2'-deoxyadenosine (EFdA) inhibits HIV-1 reverse transcriptase with multiple mechanisms. *J. Biol. Chem.* **289**(35), 24533-24548 (2014).
2. Markowitz, M. and Sarafianos, S.G. 4'-Ethynyl-2-fluoro-2'-deoxyadenosine, MK-8591: A novel HIV-1 reverse transcriptase translocation inhibitor. *Curr. Opin. HIV AIDS* **13**(4), 294-299 (2018).
3. Kawamoto, A., Kodama, E., Sarafianos, S.G., *et al.* 2'-deoxy-4'-C-ethynyl-2-halo-adenosines active against drug-resistant human immunodeficiency virus type 1 variants. *Int. J. Biochem. Cell Biol.* **40**(11), 2410-2420 (2008).
4. Stoddart, C.A., Galkina, S.A., Joshi, P., *et al.* Oral administration of the nucleoside EFdA (4'-ethynyl-2-fluoro-2'-deoxyadenosine) provides rapid suppression of HIV viremia in humanized mice and favorable pharmacokinetic properties in mice and the rhesus macaque. *Antimicrob. Agents Chemother.* **59**(7), 4190-4198 (2015).

#### 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.

#### WARRANTY AND LIMITATION OF REMEDY

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