

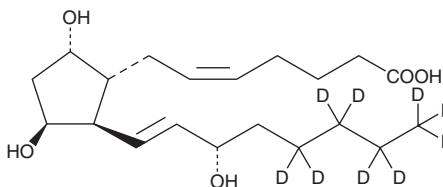
# PRODUCT INFORMATION



## 11 $\beta$ -Prostaglandin F<sub>2 $\alpha$</sub> -d<sub>9</sub>

Item No. 18788

**CAS Registry No.:** 2738376-79-7  
**Formal Name:** (Z)-7-((1R,2R,3S,5S)-3,5-dihydroxy-2-((S,E)-3-hydroxyoct-1-en-1-yl-5,5,6,6,7,7,8,8,8-d<sub>9</sub>)cyclopentyl)hept-5-enoic acid  
**Synonyms:** 9 $\alpha$ ,11 $\beta$ -PGF<sub>2 $\alpha$</sub> -d<sub>9</sub>, 11 $\beta$ -PGF<sub>2 $\alpha$</sub> -d<sub>9</sub>, 11-*epi* PGF<sub>2 $\alpha$</sub> -d<sub>9</sub>  
**MF:** C<sub>20</sub>H<sub>25</sub>D<sub>9</sub>O<sub>5</sub>  
**FW:** 363.5  
**Chemical Purity:**  $\geq$ 95% (11 $\beta$ -Prostaglandin F<sub>2 $\alpha$</sub> )  
**Deuterium Incorporation:**  $\geq$ 99% deuterated forms (d<sub>1</sub>-d<sub>9</sub>);  $\leq$ 1% d<sub>0</sub>  
**Supplied as:** A solution in ethanol  
**Storage:** -20°C  
**Stability:**  $\geq$ 1 year



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

### Laboratory Procedures

11 $\beta$ -Prostaglandin F<sub>2 $\alpha$</sub> -d<sub>9</sub> (11 $\beta$ -PGF<sub>2 $\alpha$</sub> -d<sub>9</sub>) is intended for use as an internal standard for the quantification of 11 $\beta$ -PGF<sub>2 $\alpha$</sub>  (Item No. 16520) 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).

11 $\beta$ -PGF<sub>2 $\alpha$</sub> -d<sub>9</sub> is supplied as a solution in ethanol. To change the solvent, simply evaporate the ethanol under a gentle stream of nitrogen and immediately add the solvent of choice. Solvents such as DMSO and dimethyl formamide purged with an inert gas can be used. The solubility of 11 $\beta$ -PGF<sub>2 $\alpha$</sub> -d<sub>9</sub> in these solvents is approximately 50 mg/ml.

### Description

11 $\beta$ -PGF<sub>2 $\alpha$</sub>  is the primary metabolite of PGD<sub>2</sub> (Item No. 12010).<sup>1</sup> It is formed from PGD<sub>2</sub> via the NADPH-dependent aldoketo reductase PGF synthase (PGFS; Item No. 10007940) in the liver or lung.<sup>2</sup> 11 $\beta$ -PGF<sub>2 $\alpha$</sub>  induces contraction of isolated cat iris sphincter, which endogenously expresses high levels of PGF<sub>2 $\alpha$</sub>  (FP) receptors, with an EC<sub>50</sub> value of 0.045  $\mu$ M.<sup>1</sup> It also induces contraction of isolated human bronchial smooth muscle when used at concentrations ranging from 0.1 to 30  $\mu$ M.<sup>3</sup> 11 $\beta$ -PGF<sub>2 $\alpha$</sub>  (0.1 and 1  $\mu$ M) induces phosphorylation of ERK and CREB, as well as increases the viability of MCF-7 breast cancer cells stably expressing the FP receptor when used at concentrations of 0.1 and 1  $\mu$ M.<sup>4</sup>

### References

1. Giles, H., Bolofo, M.L., Lydford, S.J., *et al.* A comparative study of the prostanoid receptor profile of 9 $\alpha$  11 $\beta$ -prostaglandin F<sub>2</sub> and prostaglandin D<sub>2</sub>. *Br. J. Pharmacol.* **104**(2), 541-549 (1991).
2. Watanabe, K. Prostaglandin F synthase. *Prostaglandins Other Lipid Mediat.* **68-69**, 401-407 (2002).
3. Coleman, R.A. and Sheldrick, R.L.G. Prostanoid-induced contraction of human bronchial smooth muscle is mediated by TP-receptors. *Br. J. Pharmacol.* **96**(3), 688-692 (1989).
4. Yoda, T., Kikuchi, K., Miki, Y., *et al.* 11 $\beta$ -Prostaglandin F<sub>2 $\alpha$</sub> , a bioactive metabolite catalyzed by AKR1C3, stimulates prostaglandin F receptor and induces slug expression in breast cancer. *Mol. Cell. Endocrinol.* **413**, 236-247 (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

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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