

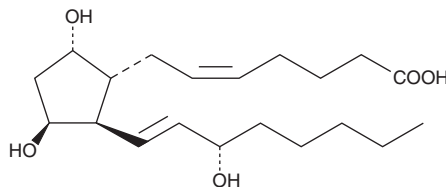
# PRODUCT INFORMATION



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

Item No. 16520

**CAS Registry No.:** 38432-87-0  
**Formal Name:** (5Z,9 $\alpha$ ,11 $\beta$ ,13E,15S)-9,11,15-trihydroxy-prosta-5,13-dien-1-oic acid  
**Synonyms:** 9 $\alpha$ ,11 $\beta$ -PGF<sub>2 $\alpha$</sub> , 11 $\beta$ -PGF<sub>2 $\alpha$</sub> , 11-*epi* PGF<sub>2 $\alpha$</sub>   
**MF:** C<sub>20</sub>H<sub>34</sub>O<sub>5</sub>  
**FW:** 354.5  
**Purity:**  $\geq$ 98%  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:**  $\geq$ 4 years



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>  (11 $\beta$ -PGF<sub>2 $\alpha$</sub> ) is supplied as a crystalline solid. A stock solution may be made by dissolving the 11 $\beta$ -PGF<sub>2 $\alpha$</sub>  in the solvent of choice, which should be purged with an inert gas. 11 $\beta$ -PGF<sub>2 $\alpha$</sub>  is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of 11 $\beta$ -PGF<sub>2 $\alpha$</sub>  in these solvents is approximately 100 mg/ml.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of 11 $\beta$ -PGF<sub>2 $\alpha$</sub>  can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of 11 $\beta$ -PGF<sub>2 $\alpha$</sub>  in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### 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 aldo-keto 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

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#### 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