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# **Product Information**



## Prostaglandin $F_{2\alpha}$ (tromethamine salt)

Item No. 16020

CAS Registry No:	38562-01-5	
Formal Name:	9a,11a,15S-trihydroxy-prosta-5Z,13E-dien-1-oic	
	acid, tris (hydroxymethyl) aminomethane salt	ОН
Synonym:	Dinoprost	
MF:	$C_{20}H_{33}O_5 \bullet C_4H_{12}NO_3$	• +H <sub>3</sub> NC(CH <sub>2</sub> OH) <sub>3</sub>
FW:	475.6	но
Purity:	≥99%	ОН
Stability:	≥2 years at -20°C	
Supplied as:	A crystalline solid	

Laboratory Procedures

Prostaglandin  $F_{2\alpha}$  (tromethamine salt) (PGF<sub>2\alpha</sub> (tromethamine salt)) is a crystalline derivative of PGF<sub>2\alpha</sub> with increased water solubility. For long term storage, we suggest that  $PGF_{2\alpha}$  (tromethamine salt) be stored as supplied at -20°C. It will be stable for at least two years.

 $PGF_{2\alpha}$  (tromethamine salt) is supplied as a crystalline solid. A stock solution may be made by dissolving the  $PGF_{2\alpha}$ (tromethamine salt) in an organic solvent.  $PGF_{2\alpha}$  (tromethamine salt) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of PGF $_{2lpha}$  (tromethamine salt) in these solvents is approximately 50 mg/ml. PGF<sub>20</sub> (tromethamine salt) will be stable for at least two years in these solvents if stored at -20°C.

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 PGF<sub>2 $\alpha$ </sub> (tromethamine salt) can be prepared by directly dissolving the crystalline compound in aqueous buffers. The solubility of  $PGF_{2\alpha}$  (tromethamine salt) in PBS is approximately 25 mg/ml, compared to 10 mg/ml for PGF<sub>2 $\alpha$ </sub>. We do not recommend storing the aqueous solution for more than one day.

 $PGF_{2\alpha}$  is a widely distributed prostaglandin occurring in many species.<sup>1-3</sup> It causes contraction of vascular, bronchial, intestinal, and myometrial smooth muscle, and also exhibits potent luteolytic activity.<sup>2</sup> PGF<sub>2 $\alpha$ </sub> exhibits its receptor mediated physiological activity at 50-100 nM.<sup>2</sup> Maximal ovine myometrial contraction can be achieved at 125 nM PGF<sub>2α</sub> in vitro.4

#### References

- 1. Speroff, L. and Ramwell, P.W. Prostaglandins in reproductive physiology. Am. J. Obstet. Gynecol. 107, 1111-1130 (1970).
- Samuelsson, B., Goldyne, M., Granström, E., et al. Prostaglandins and thromboxanes. Annu. Rev. Biochem. 47, 997-2. 1029 (1978).
- 3. Watanabe, K., Iguchi, Y., Iguchi, S., et al. Stereospecific conversion of prostaglandin D<sub>2</sub> to (5Z,13E)-(15S)-9a,11a,15trihydroxyprosta-5,13-dien-1-oic acid (9 $\alpha$ ,11 $\alpha$ -prostaglandin F<sub>2</sub>) and of prostaglandin H<sub>2</sub> to prostaglandin F<sub>2</sub> $\alpha$  by bovine lung prostaglandin F synthase. Proc. Nat. Acad. Sci USA 83, 1583-1587 (1986).
- Crankshaw, D.J. and Gaspar, V. Pharmacological characterization in vitro of prostanoid receptors in the myometrium of nonpregnant ewes. J. Reprod. Fertil. 103, 55-61 (1995).

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