

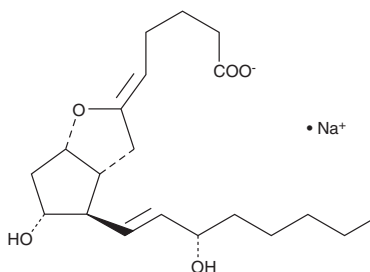
PRODUCT INFORMATION



Prostaglandin I₂ (sodium salt)

Item No. 18220

CAS Registry No.: 61849-14-7
Formal Name: 6,9 α -epoxy-11 α ,15S-dihydroxy-prosta-5Z,13E-dien-1-oic acid, monosodium salt
Synonyms: Epoprostenol, PGI₂, Prostacyclin
MF: C₂₀H₃₁O₅ • Na
FW: 374.5
Purity: ≥95%
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years
Special Conditions: Hygroscopic



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

Laboratory Procedures

For long term storage, we suggest that prostaglandin I₂ (PGI₂) (sodium salt) be stored as supplied at -20°C. It should be stable for at least two years.

PGI₂ (sodium salt) is a hygroscopic crystalline solid soluble in water. It is unstable at neutral or acidic pH. On exposure to open air, the compound will absorb moisture and hydrolyze rapidly to 6-keto PGF_{1 α} . An aqueous stock solution of PGI₂ (sodium salt) can be prepared by dissolving the crystalline solid directly in basic buffers (pH >10.2). The solubility of PGI₂ (sodium salt) in PBS (pH >10.2) is approximately 10 mg/ml. Solutions of PGI₂ (sodium salt) at physiologic pH and room temperature will have a half-life from 1 to 12 minutes depending on buffer concentration.^{1,2}

Description

PGI₂ is an unstable cyclooxygenase metabolite detected first in vascular endothelial cells.^{1,3,4} It elevates platelet cAMP and is a potent vasodilator and inhibitor of human platelet aggregation with an IC₅₀ value of 5 nM.⁵ PGI₂ is stable in basic buffers (pH = 8), but it is rapidly hydrolyzed to 6-keto PGF_{1 α} in neutral or acidic solutions. The half-life is short both *in vivo* and *in vitro*, ranging from 30 seconds to a few minutes. PGI₂ is administered by continuous infusion in humans for the treatment of idiopathic pulmonary hypertension.⁶

References

1. Stehle, R.G. Physical chemistry, stability, and handling of prostaglandins E₂, F_{2 α} , D₂ and I₂: A critical summary. *Methods Enzymol.* **86**, 436-459 (1982).
2. Moncada, S. Biology and therapeutic potential of prostacyclin. *Stroke* **14**(2), 157-168 (1983).
3. Moncada, S., Gryglewski, R., Bunting, S., *et al.* An enzyme isolated from arteries transforms prostaglandin endoperoxides to an unstable substance that inhibits platelet aggregation. *Nature* **263**(5579), 663-665 (1976).
4. Johnson, R.A., Morton, D.R., Kinner, J.H., *et al.* The chemical structure of prostaglandin X (prostacyclin). *Prostaglandins* **12**(6), 915-928 (1976).
5. Aristoff, P.A., Johnson, P.D., and Harrison, A.W. Synthesis of 9-substituted carbacyclin analogues. *J. Org. Chem.* **48**(26), 5341-5348 (1983).
6. McLaughlin, V.V., Genthner, D.E., Panella, M.M., *et al.* Reduction in pulmonary vascular resistance with long-term epoprostenol (prostacyclin) therapy in primary pulmonary hypertension. *N. Engl. J. Med.* **338**(5), 273-277 (1998).

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.

Copyright Cayman Chemical Company, 10/07/2022

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