

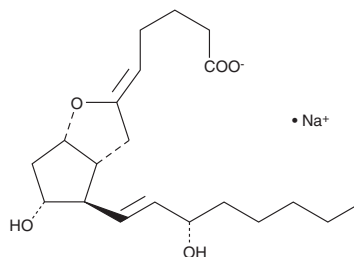
Product Information



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
Synonym: Prostacyclin (sodium salt)
MF: C₂₀H₃₁O₅ • Na
FW: 374.5
Purity: ≥99%
Stability: ≥6 months at -20°C
Supplied as: A crystalline solid



Laboratory Procedures

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

PGI₂ 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 can be prepared by dissolving the crystalline solid directly in basic buffers (pH >10.2). The solubility of PGI₂ in PBS (pH 9.0) is approximately 11 mg/ml. Solutions of PGI₂ at physiologic pH and room temperature will have a half-life from 1 to 12 minutes depending on buffer concentration.^{1,2}

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, 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, 663-665 (1976).
4. Johnson, R.A., Morton, D.R., Kinner, J.H., et al. The chemical structure of prostaglandin X (prostacyclin). *Prostaglandins* 12, 915-928 (1976).
5. Aristoff, P.A., Johnson, P.D., and Harrison, A.W. Synthesis of 9-substituted carbacyclin analogues. *J. Org. Chem.* 48, 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, 273-277 (1998).

Related Products

16(R)-AFP 07 (free acid) - Item No. 10991 • Ciprostone (calcium salt) - Item No. 18216 • Prostaglandin I₃ (sodium salt) - Item No. 18300

WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY: NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

MATERIAL SAFETY DATA

This material should be considered hazardous until information to the contrary becomes available. Do not ingest, swallow, or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. This information contains some, but not all, of the information required for the safe and proper use of this material. Before use, the user must review the complete Material Safety Data Sheet, which has been sent *via* email to your institution.

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