**Treprostinil (diethanolamine salt)**

*Item No. 11927*

**CAS Registry No.:** 830354-48-8

**Formal Name:** 2-[[[(1R,2R,3aS,9aS)-2,3,3a,4,9,9a-hexahydro-2-hydroxy-1-[[3S]-3-hydroxyoctyl]-1H-benz[f][inden-5-yl]oxy]-acetic acid, diethanolamine salt

**Synonyms:** Treprostinil diolamine, UT 15C

**MF:** C_{23}H_{33}O_{5} • C_{4}H_{12}NO_{2}

**FW:** 495.7

**Purity:** ≥98%

**Supplied as:** A crystalline solid

**Storage:** -20°C

**Stability:** ≥2 years

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**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.

**Laboratory Procedures**

Treprostinil (diethanolamine salt) is supplied as a crystalline solid. A stock solution may be made by dissolving the treprostinil (diethanolamine salt) in the solvent of choice. Treprostinil (diethanolamine salt) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of treprostinil (diethanolamine salt) in these solvents is approximately 13, 5, and 20 mg/ml, respectively.

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 treprostinil (diethanolamine salt) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of treprostinil (diethanolamine salt) in PBS, pH 7.2, is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

**Description**

Treprostinil is a derivative of prostaglandin I₂ (PGI₂/prostacyclin; Item No. 18220) and an agonist of PGI₂, PGD₂, and PGE₂ receptors IP₂, DP₂, and EP₂.1,2 It binds selectively to IP₂, DP₂, and EP₂ over EP₁, EP₃, and EP₄ receptors with Kᵢ values of 32, 4.4, 3.6, 212, 2,505, and 826 nM, respectively, in radioligand binding assays.1 Treprostinil inhibits LPS-induced production of TNF-α, IL-1β, IL-6, and granulocyte macrophage colony-stimulating factor (GM-CSF) in isolated human alveolar macrophages when used at a concentration of 200 ng/ml.3 It also prevents LPS-induced nuclear translocation and activation of NF-κB in the same cells. Treprostinil relaxes isolated small pulmonary arteries and veins precontracted with the thromboxane A₂ (TP) receptor antagonist U-46619 (Item No. 16450), an effect that can be blocked by IP receptor antagonists in the arteries and reduced by IP receptor antagonists in the veins.2 It reduces right ventricular systolic pressure, but not right ventricular hypertrophy, compared to hypoxic and sham control animals in a mouse model of chronic hypoxic pulmonary hypertension.4 Formulations containing treprostinil have been used in the treatment of primary pulmonary hypertension.

**References**