15-keto Prostaglandin E$_2$

**CAS Registry No.:** 26441-05-4  
**Formal Name:** 9,15-dioxo-11α-hydroxy-prosta-5Z,13E-dien-1-oic acid  
**Synonym:** 15-keto PGE$_2$  
**MF:** C$_{20}$H$_{30}$O$_5$  
**FW:** 350.5  
**Purity:** ≥98%  
**UV/Vis.:** $\lambda_{max}$: 229 nm  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:** As supplied, 2 years from the QC date provided on the Certificate of Analysis, when stored properly

### Laboratory Procedures

15-keto Prostaglandin E$_2$ (15-keto PGE$_2$) is supplied as a crystalline solid. 15-keto PGE$_2$ is sparingly soluble in water but freely soluble in organic solvents such as ethanol, DMSO, or dimethyl formamide. The solubility of 15-keto PGE$_2$ in these solvents is at least 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 15-keto PGE$_2$ can be prepared by directly dissolving the crystalline compound in aqueous buffers. The solubility of 15-keto PGE$_2$ in PBS, pH 7.2, is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

15-keto PGE$_2$ is a metabolite of PGE$_2$ (Item No. 14010) formed by 15-hydroxy PGDH.$^{1,2}$ In vivo, 15-keto PGE$_2$ is essentially inactive. It has an attenuated affinity for the EP$_4$ and EP$_2$ receptors compared to PGE$_2$ ($K_i = 2,600-15,000$ nM for the inhibition of PGE$_2$ binding compared to a $K_d = 1$ nM for PGE$_2$)$^{3}$

### References