

PRODUCT INFORMATION

15-keto Prostaglandin E₂ MaxSpec[®] Standard

Item No. 10007215

CAS Registry No.: 26441-05-4

Formal Name: 9,15-dioxo-11 α -hydroxy-prosta-5Z,13E-dien-1-oic acid

Synonyms: 15-keto PGE₂, 15-oxo PGE₂

MF: C₂₀H₃₀O₅

FW: 350.5

Purity: $\geq 95\%$

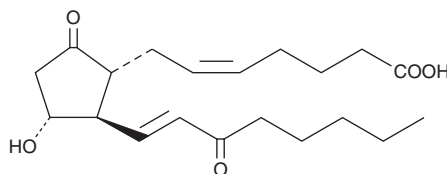
Supplied as: A solution in methyl acetate; in a deactivated glass ampule

Concentration: 100 $\mu\text{g/ml}$ (nominal); see certificate of analysis for verified concentration

Storage: -20°C

Stability: ≥ 5 years; Stability testing is ongoing to ensure concentration accuracy. The certificate of analysis and product expiry date will be updated upon completion of testing.

Special Conditions: Store upright and unopened at -20°C. Warm to room temperature prior to opening. Light sensitive.



Description

15-keto Prostaglandin E₂ (15-keto PGE₂) is a metabolite of PGE₂ (Item No. 14010) formed by 15-hydroxy prostaglandin dehydrogenase (15-PGDH).¹ Unlike PGE₂, 15-keto PGE₂ does not bind effectively to the PGE₂ receptors EP₂ and EP₄ expressed in CHO cells (K_is = 2.6 and 15 μM , respectively) or induce adenylate cyclase activity in the same cells (EC₅₀s = 1.8 and >33 μM , respectively). However, it does bind to EP₂ and EP₄ in HEK cells expressing these receptors (IC₅₀s = 0.117 and 2.82 μM , respectively), as well as induces cAMP formation (EC₅₀s = 0.137 and 0.426 μM , respectively) and the transcriptional activity of β -catenin/TCF in the same cells.² 15-keto PGE₂ inhibits CD3-CD28-MHC-I-induced proliferation of isolated human CD4⁺ T cells in a concentration-dependent manner.³ It also reduces mortality in a mouse model of LPS-induced sepsis when administered at a dose of 15 mg/kg.⁴

15-keto PGE₂ MaxSpec[®] standard is a quantitative grade standard of 15-keto PGE₂ (Item No. 14720) that has been prepared specifically for mass spectrometry or any application where quantitative reproducibility is required. The solution has been prepared gravimetrically and is supplied in a deactivated glass ampule sealed under argon. The concentration was verified by comparison to an independently prepared calibration standard. This 15-keto PGE₂ MaxSpec[®] standard is guaranteed to meet identity, purity, stability, and concentration specifications and is provided with a batch-specific certificate of analysis. Ongoing stability testing is performed to ensure the concentration remains accurate throughout the shelf life of the product. **Note:** The amount of solution added to the vial is in excess of the listed amount. Therefore, it is necessary to accurately measure volumes for preparation of calibration standards. Follow recommended storage and handling conditions to maintain product quality.

References

1. Nishigaki, N., Negishi, M., and Ichikawa, A. Two G_s-coupled prostaglandin E receptor subtypes, EP2 and EP4, differ in desensitization and sensitivity to the metabolic inactivation of the agonist. *Mol. Pharmacol.* **50**(4), 1031-1037 (1996).
2. Endo, S., Suganami, A., Fukushima, K., *et al.* 15-Keto-PGE₂ acts as a biased/partial agonist to terminate PGE₂-evoked signaling. *J. Biol. Chem.* **295**(38), 13338-13352 (2020).
3. Schmidleithner, L., Thabet, Y., Schönfeld, E., *et al.* Enzymatic activity of HPGD in Treg cells suppresses Tconv cells to maintain adipose tissue homeostasis and prevent metabolic dysfunction. *Immunity* **50**(5), 1232-1248 (2019).
4. Chen, I.-J., Hee, S.-W., Liao, C.-H., *et al.* Targeting the 15-keto-PGE₂-PTGR2 axis modulates systemic inflammation and survival in experimental sepsis. *Free Radic. Biol. Med.* **115**, 113-126 (2018).

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.

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