Calcitriol is synthesized from 25-hydroxy vitamin D3, the principal circulating form of vitamin D, via hydroxylation in the kidney. Plasma calcitriol levels range from 10 - 70 pg/mL and are influenced by numerous dietary and hormonal factors (Bikle et al.). The main physiologic effects of calcitriol are to increase the absorption of calcium at the level of the intestinal epithelium, and to increase the mineralization of bone via the direct stimulation of osteoblasts (Portale et al.).

Structure:

![Calcitriol structure](image)

Properties

- **Physical Appearance:** A crystalline solid
- **Storage:** Product stable at -20°C as supplied. Protect from prolonged exposure to light. For product expiry date, please contact techsupport@stemcell.com.
- **Solubility:**
  - Absolute ethanol ≤ 2.4 mM
  - For example, to prepare a 1 mM stock solution in absolute ethanol, resuspend 1 mg in 2.40 mL of absolute ethanol.

Prepare stock solution fresh before use. Information regarding stability of small molecules in solution has rarely been reported, however, as a general guide we recommend storage in absolute ethanol at -20°C. Aliquot into working volumes to avoid repeated freeze-thaw cycles. The effect of storage of stock solution on compound performance should be tested for each application.

Compound has low solubility in aqueous media. For use as a cell culture supplement, stock solution should be diluted into culture medium immediately before use. Avoid final ethanol concentration above 0.1% due to potential cell toxicity.
Published Applications

DIFFERENTIATION
· Induces differentiation of human osteoblasts, alone or in combination with TGFβ (Ingram et al.; Kassem et al.; Wergedal et al.).
· Induces differentiation of chicken embryonic chondrocytes (Gerstenfeld et al.; Tsonis).
· Enhances differentiation of human keratinocytes when grown in the presence of high calcium concentrations (Itin et al.).

References


Related Small Molecules

For a complete list of small molecules available from STEMCELL Technologies, please visit our website at www.stemcell.com/smallmolecules or contact us at techsupport@stemcell.com.

This product is hazardous. Please refer to the Safety Data Sheet (SDS).