Kartogenin induces chondrogenesis by binding the actin-binding protein filamin A, which disrupts its interaction with the transcription factor core-binding factor β subunit (CBFβ). When dissociated from filamin A, CBFβ translocates to the nucleus and forms a transcriptional complex with the runt-related transcription factor RUNX1, which enables chondrocyte differentiation (Johnson et al.).

**Product Description**

Kartogenin induces chondrogenesis by binding the actin-binding protein filamin A, which disrupts its interaction with the transcription factor core-binding factor β subunit (CBFβ). When dissociated from filamin A, CBFβ translocates to the nucleus and forms a transcriptional complex with the runt-related transcription factor RUNX1, which enables chondrocyte differentiation (Johnson et al.).

**Molecular Name:** Kartogenin  
**Alternative Names:** Not applicable  
**CAS Number:** 4727-31-5  
**Chemical Formula:** C₂₀H₁₅NO₃  
**Molecular Weight:** 317.3 g/mol  
**Purity:** ≥ 98%  
**Chemical Name:** 2-[(4-phenylphenyl)carbamoil]benzoic acid  
**Structure:**

![Chemical Structure of Kartogenin](image)

**Properties**

**Physical Appearance:** A crystalline solid  
**Storage:**  
Product stable at -20°C as supplied. Protect from prolonged exposure to light.  
Stable as supplied for 12 months from date of receipt.  
**Solubility:**  
- DMSO ≤ 90 mM  
For example, to prepare a 10 mM stock solution in DMSO, resuspend 1 mg in 315 μL of DMSO.  
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 DMSO 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 DMSO concentration above 0.1% due to potential cell toxicity.
Published Applications

DIFFERENTIATION

· Promotes differentiation of human bone marrow mesenchymal stem cells into chondrocytes (Johnson et al.; Zhang et al.).
· Promotes cartilage formation/repair in mouse models of osteoarthritis or when injected into mouse tendon-bone junctions (Johnson et al.; Zhang et al.).
· Promotes type-I collagen synthesis in human dermal fibroblasts in vitro and in the dermis of mice through activation of the SMAD4/SMAD5 pathway (Wang et al.).

References


Related Small Molecules

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

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