Indomethacin is a non-steroidal, anti-inflammatory agent that inhibits cyclooxygenase (COX) activity, thereby blocking the production of prostaglandins (Vane et al.). Indomethacin inhibits both COX-1 and COX-2 ($IC_{50} = 0.08$ and $0.96 \mu M$ for recombinant human COX-1 and COX-2, respectively; Kurumbail et al.).

**Structure:**

Indomethacin

![Indomethacin structure](image)

**Product Description**

Indomethacin is a non-steroidal, anti-inflammatory agent that inhibits cyclooxygenase (COX) activity, thereby blocking the production of prostaglandins (Vane et al.). Indomethacin inhibits both COX-1 and COX-2 ($IC_{50} = 0.08$ and $0.96 \mu M$ for recombinant human COX-1 and COX-2, respectively; Kurumbail et al.).

**Molecular Name:** Indomethacin  
**Alternative Names:** Indocin  
**CAS Number:** 53-86-1  
**Chemical Formula:** $C_{19}H_{16}ClNO_4$  
**Molecular Weight:** 357.8 g/mol  
**Purity:** $\geq 99\%$  
**Chemical Name:** 2-[1-(4-chlorobenzoyl)-5-methoxy-2-methylindol-3-yl]acetic acid

**Properties**

**Physical Appearance:** A crystalline solid  
**Storage:**  
Product stable at room temperature (15 - 25°C) as supplied. Protect product from prolonged exposure to light. For long-term storage store with a desiccant. Stable as supplied for 12 months from date of receipt.  
**Solubility:**  
- DMSO $\leq 45$ mM  
- Absolute ethanol $\leq 15$ mM  
For example, to prepare a 10 mM stock solution in DMSO, resuspend 10 mg in 2.79 mL 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
- Activates peroxisome proliferator-activated receptor-γ (PPARγ), a ligand-activated transcription factor known to play a pivotal role in adipogenesis (Lehmann et al.).
- Inhibits chondrogenic differentiation in ATDC5 cells and bone marrow stem cells (Caron et al.).

CANCER RESEARCH
- Inhibits growth of mouse mammary tumors (Fulton).
- Induces apoptosis in prostate and gastric cancer cells (Chiou et al.; Liu 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).