**Product Data Sheet**

**Chemical Properties**

**Product Name:** Progesterone  
**Cas No.:** 57-83-0  
**M.Wt:** 314.46  
**Formula:** C21H30O2  
**Synonyms:** N/A  

**Chemical Name:** (8S,9S,10R,13S,14S,17S)-17-acetyl-10,13-dimethyl-1,2,6,7,8,9,11,12,14,15,16,17-dodecahydrocyclopenta[a]phenanthren-3-one  
**Canonical SMILES:** CC(=O)C1CCC2C1(CCC3C2CCC4=CC(=O)CCC34C)C  
**Solubility:** $\geq 14.65$mg/mL in DMSO  
**Storage:** Store at -20°C  
**General tips:** For obtaining a higher solubility, please warm the tube at 37°C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.  
**Shopping Condition:** Evaluation sample solution: ship with blue ice  
All other available size: ship with RT, or blue ice upon request

**Biological Activity**

**Targets:** Endocrinology and Hormones  
**Pathways:** Estrogen/progestogen Receptor  
**Description:**  
Progesterone is a critical hormone for the maintenance of pregnancy, menstrual cycle, endometrium and functions with its receptor [1]. Progesterone plays an important role in establishing uterine receptivity for embryo implantation. Cooperated with nuclear progesterone receptor, progesterone could damper the action(s) of E2 and BPA on Egr1 expression [2]. When tested with mouse melanoma (B16F10) cells and human
melanoma (BLM) cells, progesterone treatment could significantly inhibit mouse melanoma cell growth [3]. In MCF-7 cells, progesterone activated GLI-1 in RANKL dependent manner to regulate estrogen-induced mammary carcinogenesis [4].

When tested with rats (pretreated subcutaneous progesterone or peanut oil for 5 days beginning on pregnancy day 17 and control ones), progesterone (400 and 500 μg per day) treatment enhanced maternal behavior inhibited by opioidergic [1].

Progesterone also has been shown to exhibit neuroprotective effects via modulating the phosphorylation of Akt which plays pivotal role in promoting cell growth in the brain. To assess the effects of progesterone on Akt phosphorylation, when tested with closed-skull traumatic brain injury C57BL/6 mice, after progesterone treatment phosphorylation of Akt in hippocampus increased compared to traumatic brain injury vehicle [5]. When tested with female rats, progesterone treatment asymmetrically modulated the expression of GABA (A) receptor α4 subunit in the olfactory bulb [6].

Reference:

Caution

FOR RESEARCH PURPOSES ONLY.

NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

Specific storage and handling information for each product is indicated on the product datasheet. Most ApexBio products are stable under the recommended conditions. Products are sometimes shipped at a temperature that differs from the recommended storage temperature. Shortterm storage of many products are stable in the short-term at temperatures that differ from that required for long-term storage. We ensure that the product is shipped under conditions that will maintain the quality of the reagents. Upon receipt of the product, follow the storage recommendations on the product data sheet.