Product Data Sheet

Chemical Properties

**Product Name:** 17 alpha-propionate  
**Cas No.:** 19608-29-8  
**M.Wt:** 402.52  
**Formula:** C24H34O5  
**Synonyms:** 17α-propionate; CB-03-01  
**Chemical Name:** [(8R,9S,10R,13S,14S,17R)-17-(2-hydroxyacetyl)-10,13-dimethyl-3-oxo-2,6,7,8,9,11,12,14,15,16-decahydro-1H-cyclopenta[a]phenanthren-17-yl] propanoate  
**Canonical SMILES:** CCC(=O)OC1(CCC2C1(CCC3C2CCC4=CC(=O)CCC34C)C)C(=O)CO  
**Solubility:** Soluble 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:** Androgen Receptor  
**Description:** Acne vulgaris is a disorder of the pilosebaceous unit in which the androgens contribute to its onset and persistence. Though the use of antiandrogens is potentially effective; topical use of antiandrogens are not available on the market. Cortexolone 17a-propionate (CB-03-01) is a new potent topical antiandrogen potentially useful in acne vulgaris. CB-03-01 is a new chemical entity.
that acts at the level of the skin androgen receptor, which blocks testosterone and di-hydrotestosterone from binding to the receptor in the cell.

In vitro: The aim of one in vitro study was to investigate the antiandrogenic activity of a new monoester of cortexolone, cortexolone 17alpha-propionate. Although the compound displayed a strong local antiandrogenic activity in hamster’s flank organ test. Its pharmacological activity seemed to be primarily related to its ability to antagonistically compete at androgen receptor level; nevertheless its primary pharmacological target needs to be further investigated. The topical activity of cortexolone 17alpha-propionate with the apparent absence of systemic effects makes this compound to have the potential of representing a novel and safe therapeutic approach for androgen-dependent skin disorders. [1].

In vivo: Cortexolone 17alpha-propionate displayed a strong local antiandrogenic activity in hamster's flank organ test, however, it did not exhibit antiandrogenic activity in rats, nor did it affect gonadotropins hypersecretion. As topical antiandrogen, the steroid resulted about 4 times more active than progesterone and, when compared to known antiandrogen standards, it was about 3 times more potent than flutamide, about 2 times more effective than finasteride and approximately as active as cyproterone acetate. Its pharmacological activity seemed to be primarily related to its ability to antagonistically compete at androgen receptor level; nevertheless its primary pharmacological target needs to be further investigated [1].

Clinical trial: In 2011, Trifu et al. evaluated the safety and efficacy of cortexolone 17alpha-propionate 1% cream in acne vulgaris in comparison to placebo and to tretinoin 0.05% cream. A total of 77 male subjects were randomized to receive cortexolone 17alpha-propionate 1% cream, tretinoin 0.05% cream or placebo once nightly for 8 weeks. cortexolone 17alpha-propionate 1% cream was statistically better than placebo in reducing total lesion count, inflammatory lesion count and Acne Severity Index, without any major side effects. Further, cortexolone 17alpha-propionate 1% cream showed a faster onset of all the abovementioned improvements and was clinically more effective than tretinoin 0.05% cream, although the results were not statistically significant [2]

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.