## Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Name</td>
<td>Fulvestrant (ICI 182,780)</td>
</tr>
<tr>
<td>Cas No.</td>
<td>129453-61-8</td>
</tr>
<tr>
<td>M.Wt</td>
<td>606.77</td>
</tr>
<tr>
<td>Formula</td>
<td>C32H47F5O3S</td>
</tr>
<tr>
<td>Chemical Name</td>
<td>(7R,8R,9S,13S,14S,17S)-13-methyl-7-[9-(4,4,5,5,5-pentafluoropentyl sulfinyl)nonyl]-6,7,8,9,11,12,14,15,16,17-decahydrocyclopenta[a]phenanthrene-3,17-diol</td>
</tr>
<tr>
<td>Canonical SMILES</td>
<td>CC12CC3C(C1CCC2O)C(CC4=C3C=CC(=C4)O)CCCCCCCCCSC(=O)CCCC(C(F)(F)F)(F)F</td>
</tr>
<tr>
<td>Solubility</td>
<td>&gt;30.3mg/mL in DMSO</td>
</tr>
<tr>
<td>Storage</td>
<td>Store at -20°C</td>
</tr>
<tr>
<td>General tips</td>
<td>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.</td>
</tr>
<tr>
<td>Shopping Condition</td>
<td>Evaluation sample solution: ship with blue ice All other available size: ship with RT, or blue ice upon request</td>
</tr>
</tbody>
</table>

## Biological Activity

**Targets:** Endocrinology and Hormones  
**Pathways:** Estrogen/progestogen Receptor  
**Description:** Fulvestran is a newer type of estrogen receptor (ER) antagonist with IC50 value of 0.094nM [1]. Fulvestrant treatment caused a significant decrease in MDM2 protein expression in human breast cancer cell lines MCF7 and T47D, and that the reduction of MDM2 correlated with the decrease
Fulvestrant enhances the sensitivity of human breast cancer cells to chemotherapeutic drugs. CompuSyn analyses showed that combined use of doxorubicin, paclitaxel or etoposide with fulvestrant resulted in different degrees of synergism in MCF7 and T47D cell lines tested. Besides, Combination of fulvestrant and chemotherapeutic drugs induces altered cell cycle distribution, apoptosis, and senescence [1].

Reference:

Protocol

Cell experiment:

<table>
<thead>
<tr>
<th>Cell lines</th>
<th>T47D and MCF7 breast cancer cell lines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparation method</td>
<td>The solubility of this compound in DMSO is &gt;30.3mg/mL. General tips for obtaining a higher concentration: Please warm the tube at 37 °C for 10 minutes and/or shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.</td>
</tr>
<tr>
<td>Reacting conditions</td>
<td>Treatment of ER+ human breast cancer cell lines, MCF7 and T47D cells with fulvestrant caused a significant decrease in MDM2 protein expression. Treatment with fulvestrant for 16 h or 66 h does not alter MDM2 mRNA level. Fulvestrant (1 μM, 16 h) facilitated degradation of MDM2 protein and shortened half-life of this protein (27 min vs. 42 min in T47D cells; 80 min vs. 180 min in MCF7 cells). Treatment with fulvestrant (5 μM, 72 h) increased the G1 population.</td>
</tr>
</tbody>
</table>

Animal experiment [3]:

<table>
<thead>
<tr>
<th>Animal models</th>
<th>Nude mice bearing MCF-7 and Br10 human breast cancers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dosage form</td>
<td>s.c. injection; 5 mg; 4 weeks</td>
</tr>
<tr>
<td>Other notes</td>
<td>Please test the solubility of all compounds indoor, and the actual solubility may slightly differ with the theoretical value. This is caused by an experimental system error and it is normal.</td>
</tr>
</tbody>
</table>
Reference:

Product Citations


Product Validation

Figure B and C Proliferation pattern of MCF-7 cells treated with estrogen receptor inhibitor ICI 182780 was similar to that of the cells treated with Triptolide. Erα-knockdown MCF-7 cells showed attenuate inhibitory effects of ICI 182780 and triptolide on cell proliferation. MCF-7 cells were transfected with ERα siRNA followed by treatment with Triptolide or ICI182780 at the indicated concentration for 24 hours. Cell viability was measured by the PrestoBlue assay. Figure E and F Triptolide treated ERα-overexpressed MDAMB-231 cells exhibited greater inhibitory effect on the proliferation compared with the control cells and ICI 182780 treated cells. MDA-MB-231 cell were transfected with an ERα-GFP construct followed by treatment with Triptolide or ICI182780 at the indicated concentration for 24 hours. Cell viability was measured by the PrestoBlue assay.

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.