Product Data Sheet

Chemical Properties

Product Name: MDV3100 (Enzalutamide)

Cas No.: 915087-33-1

M.Wt: 464.4

Formula: C21H16F4N4O2S

Synonyms: Enzalutamide, MDV3100, MDV-3100, MDV 3100

Chemical Name: 4-[3-[4-cyano-3-(trifluoromethyl)phenyl]-5,5-dimethyl-4-oxo-2-sulfonylideneimidazolidin-1-yl]-2-fluoro-N-methylbenzamide

Canonical SMILES: CC1(C(=O)N(C(=S)N1C2=CC(=C(C=C2)C(=O)NC)F)C3=CC(=C(C=C3)C#N)C(F)(F)F)C

Solubility: >23.2mg/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: Androgen Receptor

Pathways: Endocrinology and Hormones >> Androgen Receptor

Description:

MDV3100, known as Enzalutamide, is a second-generation androgen receptor (AR) signaling inhibitor. It has been demonstrated impressive affinity to the AR compared to the first-generation AR inhibitors. It is able to inhibit binding of androgens to the AR, AR nuclear translocation, and the association of the AR with DNA. The AR is a 919-amino acid member of the steroid receptor transcription factor superfamily with different domains including an N-terminal regulation...
domain, a central DNA binding domain, and a C-terminal domain, which includes the ligand-binding domain incorporated within its protein structure. MDV3100 was identified by the Sawyers/Jung laboratories by using the nonsteroidal agonist. Testing was showing that it induced apoptosis in VCaP cells, an AR gene amplified human prostate cancer line, while bicalutamide was ineffective.

Reference:

Protocol

Cell experiment:

Cell lines VCaP, LNCaP, 22RV1, DU145 and PC3 prostate cancer cell lines

Preparation method The solubility of this compound in DMSO is >10 mM. 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.

Reacting conditions 10 μM, 12h

Applications Recruitment of AR to target loci was markedly attenuated by MDV3100 and less so by bicalutamide. Interestingly, JQ1 blocked AR recruitment almost as effectively as MDV3100. Limiting our evaluation to AR and BRD4 coincident peaks, we observed that DHT-mediated AR recruitment to these loci was inhibited by MDV3100 and to a lesser extent by JQ1. Corroborating the ChIP seq data, gene expression analysis in VCaP and LNCaP cells showed more efficient repression of DHT-induced AR-target genes by JQ1 than by MDV3100 or bicalutamide.

Animal experiment [3]:

Animal models Four-week-old male SCIDC.B17 mice
Dosage form 10 mg/kg, oral gavage or intraperitoneally, five days a week

Applications Treatment of VCaP tumour-bearing mice with JQ1 led to a significant reduction in tumour volume/weight, whereas MDV3100 had a less pronounced effect. Recently, several studies described the pro-metastatic effects of MDV3100 in pre-clinical models. To test whether MDV3100 treatment leads to spontaneous metastasis in our VCaP xenograft model, we isolated femur, liver and spleen from MDV3100-treated mice and found evidence of metastases in femur and liver. By contrast, JQ1-treated mice showed no evidence of metastasis. Taken together, these pre-clinical studies suggest that the use of MDV3100 in clinically localized prostate cancer may potentiate the formation of micro-metastases, unlike BET inhibitors.

Other notes 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.

Reference:

Product Citations

Product Validation
KLK3 (top) and NKX3-1(bottom) expression which were the AR target genes in various resistant clones were analyzed by QPCR. All lines were pretreated with vehicle (?) or doxycycline (+) for 3 days before treatment with DMSO (left) or 10 μmol/L MDV3100 (right) for 24 hours in 10% FCS. TBP was used to normalize expression. Data represent mean ± SEM; n = 3. *, P < 0.05; **, P < 0.01 (Student t test). The F876L mutation is sufficient to induce genetic and phenotypic resistance to MDV3100.
Comparison of different anti-androgen/AR compounds on TGF-β1/Smad3/MMP9 signaling in PCa cells. CWR22Rv1 cells treated with 10 μM CASO, 10 μM MDV, 10 μM ASC, 5 μM CTS, or vehicle for 3 days were harvested. The expressions of TGF-β1, p-Smad3, Smad3, MMP9, and GAPDH were analyzed by Western blot analysis. All of the experiments have been repeated twice independently. *, p< 0.05; **, p < 0.01; ***, p < 0.001. Error bars, S.D. Casodex and MDV3100 enhanced TGF-beta, MMP9 expression in CWR22Rv1 cells. whereas ASC-J9 and CTS treatment did not.

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.

ApexBio Technology

www.apexbt.com

7505 Fannin street, Suite 410, Houston, TX 77054.

Tel: +1-832-696-8203 | Fax: +1-832-641-3177 | Email: info@apexbt.com