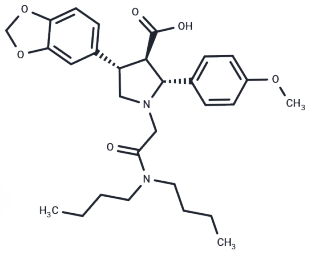
# Data Sheet (Cat.No.TQ0259)

TargetMol

## Atrasentan

### Chemical Properties



CAS No. : 173937-91-2

Formula: C29H38N2O6

Molecular Weight: 510.62

Storage: Store at low temperature,Store under nitrogen
Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

### Biological Description

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| Description | Atrasentan (ABT-627) is an endothelin receptor antagonist that can inhibit the activity of ETA (IC50 value is 0.0551 nM). |
| Targets(IC50) | Endothelin Receptor |
| In vitro | Method: Atrasentan (ABT-627) (10μM, 24 hours) was used to treat PPC-1-ET series cells and observe the cell growth.<br>**RESULTS** Atrasentan treatment significantly increased the number of apoptotic cells. [2] |
| In vivo | **METHODS**: Atrasentan （ABT-627）(20 mg/kg, intraperitoneal injection) was used to treat HT29 mice with human tumor xenografts to observe the effect of Atrasentan on tumor hypoxia.<br>**RESULTS** Atrasentan can significantly reduce tumor hypoxia. [1]<br>**METHODS**: Atrasentan (ABT-627) alone (20 mg/kg, po, daily) and docetaxel alone (5 mg/kg, i.p., every 3 days); ABT-627 (20 mg/kg, po daily) and docetaxel (5 mg/kg, intraperitoneal injection, once every 3 days) to treat tumor xenograft model mice, and observe tumor growth in the mice.<br>**RESULTS** Mice treated with the combination of Atrasentan + docetaxel had significantly lower tumor burden and growth rate than mice treated with Atrasentan or docetaxel alone. [2] |
| Kinase Assay | Cells are incubated and treated with Atrasentan. They are then washed twice with PBS and lysed in ice-cold lysis buffer [20 mM Tris (pH 7.4), 150 mM NaCl, 1% Triton X-100, 1 mM EDTA, 1 mM EGTA, 2.5 mM sodium PPi, 1 mM β-glycerophosphate, 1 mM sodium orthovanadate, 1 μg/mL leupeptin, and 1 mM PMSF]. The extracts are centrifuged to remove cellular debris, and the protein content of the supernatants is determined using the bicinchoninic acid (BCA) protein assay reagent. Proteins (150 μg) are incubated with gentle rocking at 4°C overnight with immobilized Akt antibody cross-linked to agarose hydrazide beads. After the Akt is selectively immunoprecipitated from the cell lysates, the immunoprecipitated products are washed twice with lysis buffer and twice with kinase assay buffer [25 mM Tris (pH 7.5), 10 mM MgCl2, 5 mM β-glycerol phosphate, 0.1 mM sodium orthovanadate, 2 mM DTT] and then resuspended in 40 μL of kinase assay buffer containing 200 μM ATP and 1 μg GSK-3α/β fusion protein. The kinase assay reaction is allowed to proceed at 30°C for 30 min and stopped by the addition of Lamelli SDS sample buffer. Reaction products are resolved by 10% SDS-PAGE, followed by |

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| Kinase Assay | Western blotting with antiphosphorylated GSK-3α/β antibody. For analysis of the total amount of Akt, 40 μg of protein from the lysate samples are resolved by 10% SDS-PAGE, followed by Western blotting with anti-Akt antibody [2]. |
| Cell Research | All three prostate cancer cell lines (LNCaP, C4-2b, and PC-3 cells) are seeded at a density of 3 × 10^3 cells per well in 96-well microtiter culture plates. After overnight incubation, the medium is removed and replaced with a fresh medium containing different concentrations of ABT-627 (0-50 μM) diluted from a 10-mM stock. After 72 h of incubation with the drug, 20 μL of MTT solution (5 mg/mL in PBS) is added to each well and incubated further for 2 h. Upon termination, the supernatant is aspirated and the MTT formazan formed by metabolically viable cells is dissolved in isopropanol (100 μL). The plates are mixed for 30 min on a gyratory shaker, and the absorbance is measured at 595 nm on a plate reader [2]. |
| Animal Research | YM598 (0.3, 1, and 3 mg/kg), atrasentan (0.3, 1, and 3 mg/kg), or 0.5% methylcellulose as vehicle is orally administered to rats with a dosing cannula. The dosing volume of the test substances and vehicle is set at 5 mL/kg. Approximately 20 min after administration of compounds, the rats are anesthetized with sodium pentobarbital, and then pithed and ventilated 30 min after dosing. Approximately 1 h after oral administration of compounds, big endothelin-1 (1 nmol/kg) is intravenously administered, and blood pressure is measured. In these two experiments, the dose of test compound that causes 50% inhibition (ID50) of the big endothelin-1-induced increase in diastolic blood pressure is determined by linear regression analysis [1]. |

## Solubility Information

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| Solubility | DMSO: 9 mg/mL (17.63 mM),Sonication is recommended.<br>(< 1 mg/ml refers to the product slightly soluble or insoluble) |
| In vivo Formulation | 10% DMSO+40% PEG300+5% Tween 80+45% Saline: 1 mg/mL (1.96 mM),Sonication is recommended.<br>*Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.* |

Preparing Stock Solutions

| | 1mg | 5mg | 10mg |
|---|---|---|---|
| 1 mM | 1.9584 mL | 9.792 mL | 19.584 mL |
| 5 mM | 0.3917 mL | 1.9584 mL | 3.9168 mL |
| 10 mM | 0.1958 mL | 0.9792 mL | 1.9584 mL |
| 50 mM | 0.0392 mL | 0.1958 mL | 0.3917 mL |

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Yang KM, et al. Atrasentan (ABT-627) enhances perfusion and reduces hypoxia in a human tumor xenograft model. Cancer Biol Ther. 2009 Oct;8(20):1940-6.
Zhou S, Li Z, Li X, et al.Crosstalk between endothelial cells and dermal papilla entails hair regeneration and angiogenesis during aging.Journal of Advanced Research.2024
Akhavan A, et al. Endothelin receptor A blockade enhances taxane effects in prostate cancer. Neoplasia. 2006 Sep; 8(9):725-32.
Yuyama H, et al. Superiority of YM598 over atrasentan as a selective endothelin ETA receptor antagonist. Eur J Pharmacol. 2004 Sep 13;498(1-3):171-7.



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