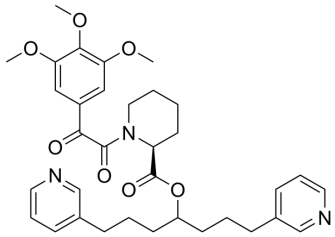
Biricodar

Cat. No.:	HY-13574A
CAS No.:	159997-94-1
Molecular Formula:	$C_{34}H_{41}N_3O_7$
Molecular Weight:	603.71
Target:	P-glycoprotein
Pathway:	Membrane Transporter/Ion Channel
Storage:	Pure form -20°C 3 years 4°C 2 years In solvent -80°C 6 months -20°C 1 month



BIOLOGICAL ACTIVITY

Description	Biricodar (VX-710) is a modulator of P-glycoprotein and MRP-1; shows effective chemosensitizing activity in multidrug resistant cells.
In Vitro	Biricodar shows activity against both P-glycoprotein (Pgp) and MRP-1 and also has activity in increasing drug uptake and retention and reversing drug resistance mediated by wild-type BCRP (BCRPR^{482}). In 8226/Dox6 cells (Pgp), biricodar increases mitoxantrone and daunorubicin uptake by 55 and 100%, respectively, increases their retention by 100 and 60%, respectively, and increases their cytotoxicity 3.1- and 6.9-fold, respectively. Biricodar also increases the uptake, retention and cytotoxicity in HL60/Adr (MRP-1) and 8226/MR20 cells (BCRP(R482)), but has little effect in MCF7 AdVP3000 cells (BCRP(R482T))[1]. VX-710 is a non-macrocyclic pipecolinate derivative which binds the FK506 receptor protein. VX-710 has been shown to restore sensitivity in a range of multidrug-resistant cells, including myeloma, melanoma, carcinoma and leukaemia[2]. Biricodar effectively inhibits photoaffinity labeling of P-glycoprotein by [^{3}H]azidopine or [^{125}I]iodoaryl azidoprazosin with EC_{50} values of 0.75 and 0.55 μM[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [1]	To study cytotoxicity in suspension cell lines, cells are plated in 96-well tissue culture plates at a density of 10,000 cells/well in RPMI 1640 supplemented with 10% FCS, 2 mM l-glutamine, 20 units/mL penicillin, and 20 μg/mL streptomycin. Drug is added to the culture medium to achieve final concentrations of 0.3 nM to 10 μM, with half-log increments, with and without biricodar at a final concentration of 2.5 μM. The final volume of medium per well is 100 μL. Cells are incubated for 96 h at 37°C in a fully humidified atmosphere of 5% CO_2 in air. Cell growth is assessed by the WST-1 colorimetric assay[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Cancer Lett. 2022 Jan 12;S0304-3835(22)00016-7.

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REFERENCES

[1]. Minderman H, et al. VX-710 (biricodar) increases drug retention and enhances chemosensitivity in resistant cells overexpressing P-glycoprotein, multidrug resistance protein, and breast cancer resistance protein. Clin Cancer Res. 2004 Mar 1;10(5):1826-34.

[2]. Yanagisawa T, et al. BIRICODAR (VX-710; Incel): an effective chemosensitizer in neuroblastoma. Br J Cancer. 1999 Jun;80(8):1190-6.

[3]. Germann UA, et al. Cellular and biochemical characterization of VX-710 as a chemosensitizer: reversal of P-glycoprotein-mediated multidrug resistance in vitro. Anticancer Drugs. 1997 Feb;8(2):125-40.

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