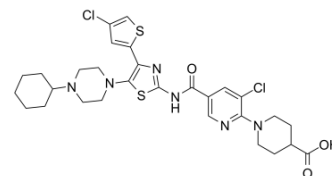


## Avatrombopag

Cat. No.:	HY-13463
CAS No.:	570406-98-3
Molecular Formula:	C <sub>29</sub> H <sub>34</sub> Cl <sub>2</sub> N <sub>6</sub> O <sub>3</sub> S <sub>2</sub>
Molecular Weight:	649.65
Target:	Thrombopoietin Receptor
Pathway:	Immunology/Inflammation
Storage:	Please store the product under the recommended conditions in the COA.



### SOLVENT & SOLUBILITY

#### In Vitro

DMSO : ≥ 32 mg/mL (49.26 mM)

\* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent		Mass		
	Concentration	1 mg	5 mg	10 mg	
1 mM	1.5393 mL	7.6965 mL	15.3929 mL		
5 mM	0.3079 mL	1.5393 mL	3.0786 mL		
10 mM	0.1539 mL	0.7696 mL	1.5393 mL		

Please refer to the solubility information to select the appropriate solvent.

### BIOLOGICAL ACTIVITY

#### Description

Avatrombopag (E5501; AKR-501) is orally active, nonpeptide **thrombopoietin (TPO) receptor** agonist (EC<sub>50</sub>=3.3 nM). Avatrombopag mimics the biological activities of TPO and stimulates megakaryocytopoiesis throughout the development and maturation of megakaryocytes. Avatrombopag is showed to have effect in humans and chimpanzees only<sup>[1]</sup>.

#### IC<sub>50</sub> & Target

EC<sub>50</sub>: 3.3 nM (TPO receptor)<sup>[1]</sup>

#### In Vitro

Avatrombopag (E5501; AKR-501) specifically targets the TPO receptor and stimulated megakaryocytopoiesis throughout the development and maturation of megakaryocytes just as recombinant human TPO (rhTPO) did<sup>[1]</sup>. Avatrombopag (0-100 nM) supports the proliferation of TPO receptor expressing Ba/F3 cell in a concentration-dependent fashion. Avatrombopag (0-3 μM) induces tyrosine phosphorylation of STAT3 and STAT5, and threonine phosphorylation of ERK in the cells, as did rhTPO<sup>[1]</sup>. Avatrombopag promotes megakaryocyte colony formation from human CB CD34<sup>+</sup> cells in a concentration-dependent fashion. The EC<sub>50</sub> is 25 nM for Avatrombopag and the maximum activity of Avatrombopag is similar to that of rhTPO<sup>[1]</sup>.

### Cell Proliferation Assay<sup>[1]</sup>

Cell Line:	Ba/F3 cells
Concentration:	0.003 $\mu$ M, 0.03 $\mu$ M, 0.3 $\mu$ M, 3 $\mu$ M
Incubation Time:	
Result:	Increased the proliferation of TPO receptor expressing Ba/F3 cell in a concentration-dependent fashion.

### Western Blot Analysis<sup>[1]</sup>

Cell Line:	Ba/F3 cells
Concentration:	0.003 $\mu$ M, 0.03 $\mu$ M, 0.3 $\mu$ M, 3 $\mu$ M
Incubation Time:	15 minutes
Result:	Induced tyrosine phosphorylation of STAT3 and STAT5, and threonine phosphorylation of ERK in the cells.

### In Vivo

Avatrombopag (0.3-3 mg/kg; p.o.; daily for 14 days) increases the number of human platelets in NOD/SCID mice transplanted with human FL CD34<sup>+</sup> cells<sup>[1]</sup>.

Animal Model:	NOD/SCID mice (transplanted with human FL CD34 <sup>+</sup> cells) <sup>[1]</sup>
Dosage:	0.3, 1, and 3 mg/kg
Administration:	P.o.; daily for 14 days
Result:	Dose-dependently increased the number of human platelets, resulting in approximately a 2.7-fold increase at 1 mg/kg/d and a 3.0-fold increase at 3 mg/kg/d on day 14 after the start of administration.

## REFERENCES

[1]. Fukushima-Shintani M, et al. AKR-501 (YM477) a novel orally-active thrombopoietin receptor agonist. Eur J Haematol. 2009;82(4):247-254.

**Caution: Product has not been fully validated for medical applications. For research use only.**

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA