R406*

Syk inhibitor - InvitroFit™

Catalog code: inh-r406n, inh-r406n-5

https://www.invivogen.com/r406

For research use only

Version 23L08-MM

PRODUCT INFORMATION

Contents R406* (R406 besylate) is available in two quantities:

- **inh-r406n:** 2 mg R406* - InvitroFit™
- **inh-r406n-5:** 5 x 2 mg R406* - InvitroFit™

Storage and stability

- R406* is provided lyophilized and shipped at room temperature. Upon receipt, store at -20°C.
- Upon resuspension, store at -20°C. Resuspended product is stable for 6 months when properly stored. Avoid repeated freeze-thaw cycles.

Quality Control:

- Inhibitory activity has been confirmed using cellular assays.
- The absence of bacterial contamination (e.g. lipoproteins and endotoxins) has been confirmed using HEK-Blue™ TLR2 and HEK-Blue™ TLR4 cells.

DESCRIPTION

R406 besylate (also known as Tamatinib besylate) is an R406 salt. R406 is the active metabolite of Fostamatinib. It was initially identified as a potent inhibitor of the spleen tyrosine kinase (Syk). R406 binds to the ATP binding pocket of Syk and inhibits its kinase activity as an ATP-competitive inhibitor[1]. It has also been cited as an inhibitor of the Flt-3 and Ret tyrosine kinases[2].

Because Syk plays an important role in FcγR-mediated signal transduction and inflammatory propagation, it is considered a good target for the inhibition of various autoimmune conditions, including rheumatoid arthritis and lymphoma. R406 was shown to attenuate autoantibody-induced arthritis in mice[1]. and to induce significant apoptosis in cancers displaying Syk over-expression[3, 4]. Interestingly, R406 selectively abrogates Syk-dependent NLRP3 inflammasome activation by *C. albicans* but not by the bacterial toxin nigericin[5].

1. Braselmann S. *et al.*, 2006. R406, an orally available spleen tyrosine kinase inhibitor blocks fc receptor signaling and reduces immune complex-mediated inflammation. J Pharmacol Exp Ther. 319(3):998. **2. Jakus Z *et al.*, 2010.** Genetic deficiency of Syk protects mice from autoantibody-induced arthritis. Arthritis Rheum. 62(7):1889. **3. Chen L. *et al.*, 2008.** SYK-dependent tonic B-cell receptor signaling is a rational treatment target in diffuse large B-cell lymphoma. Blood. 111(4):2230. **4. Zhang J. *et al.*, 2012.** A novel retinoblastoma therapy from genomic and epigenetic analyses. Nature. 481(7381):329. **5. Gross O. *et al.*, 2009.** Syk kinase signalling couples to the Nlrp3 inflammasome for anti-fungal host defence. Nature 459, 433. **6. Mócsai A. *et al.*, 2010.** The SYK tyrosine kinase: a crucial player in diverse biological functions. Nat Rev Immunol. 10(6):387.

CHEMICAL PROPERTIES

CAS number: 841290-81-1

Chemical name: 2*H*-Pyrido[3,2-*b*]-1,4-oxazin-3(4*H*)-one, 6-[[5-fluoro-2-[(3,4,5-trimethoxyphenyl)amino]-4-pyrimidinyl]amino]-2,2-dimethyl-, benzenesulfonate (1:1)

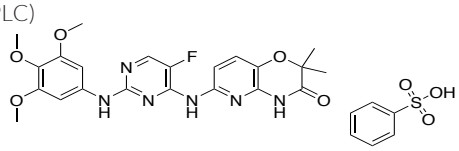
Formula: $C_{28}H_{29}FN_6O_8S$

Molecular weight: 628.63 g/mol

Solubility: 20 mg/ml in DMSO

Purity: ≥97% (UHPLC)

Structure:



METHODS

Preparation of 2 mg/ml stock solution

1. Add 1 ml of DMSO to 2 mg of R406
2. Vortex until completely resuspended.
3. Prepare aliquots and store at -20°C. Once R406 has been resuspended, dilutions can be prepared with aqueous buffers.

PROTOCOLS (For reference only)

Cell Culture Assay[1]

Cells: DLBCL (diffuse large B-cell lymphoma) cell lines

Working concentration: 0.3-5 µM

Incubation time: 72 hours

Method: Cell proliferation and apoptosis assays.

Animal Study[6]

Animal model: Female C57BL/6 mice

Dose: 5 mg/kg/day

Administration: Intragastrically

Solubility: 1% DMSO/30% polyethylene glycol/1% Tween 80

RELATED PRODUCTS

Product	Description	Cat.Code
HEK-Blue™ hDectin-1a Cells	Reporter cells	hkb-hdect1a
QUANTI-Blue™ Solution	SEAP detection reagent	rep-qbs

TECHNICAL SUPPORT

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