Product Data Sheet

Product Name: RAI-20
Cat. No.: GC79181

Chemical Properties

Cas. No.	2549180-90-5		
Formula	$C_{20}H_{21}FN_4O_3S_2$	M.Wt	448.53
Solubility	DMSO: 50 mg/mL (111.48 mM; Need ultrasonic)	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.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure			

Background

RAI-20 (H018) is an orally active JAK1/JAK2 dual inhibitor (IC_{50} =15.1 and 22.7 nM). RAI-20 exhibits excellent pharmacokinetic properties, including plasma stability, systemic exposure, and a long half-life. In a collagen-induced arthritis rat model, RAI-20 shows significant anti-inflammatory and anti-arthritic activities, effectively reducing paw swelling volume and arthritis index. RAI-20 can be

used for research on the pathogenesis of rheumatoid arthritis [1].

In Vivo, RAI-20 (2-10 mg/kg; p.o.; daily; 14 days) elicits potent, dose-dependent anti-arthritic activity in Lewis rats with collagen-induced arthritis, with the 10 mg/kg daily oral dose producing the greatest reductions in hind paw volume and arthritis index[1].

In Vitro, RAI-20 (3×10- serial dilutions; under standard cell culture conditions) potently inhibits Ba/F3 cell proliferation with an IC_{50} of 1.21 μM[1]. RAI-20 (serial dilutions; 10 min compound pre-incubation, 10 min IL-6 stimulation) inhibits IL-6-induced pSTAT1 expression in human whole blood cells with an IC_{50} of 1.45 μM[1]. RAI-20 (up to 10 μM (CYP inhibition), serial dilutions (other assays); incubated to measure T1/2 (plasma stability, hepatic microsomal stability)) exhibits favorable in vitro pharmacokinetic properties including prolonged human plasma stability, moderate hepatic microsomal metabolism, high plasma protein binding, no significant CYP inhibition, and hERG inhibition with an IC_{50} of 11.5 μM[1].

References:
[1]. Zhu H, et al. Discovery of selective JAK1/2 inhibitor H018, a phase II agent with demonstrated preclinical anti-rheumatoid arthritis activity. Eur J Med Chem. Published online March 2, 2026.

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