Chemical Properties

Product Name: SB705498
Cas No.: 501951-42-4
M.Wt.: 429.23
Formula: C17H16BrF3N4O

Chemical Name: 1-(2-bromophenyl)-3-[(3R)-1-[5-(trifluoromethyl)pyridin-2-yl]pyrrolidin-3-yl]urea
Canonical SMILES: C1CN(CC1NC(=O)NC2=CC=CC=C2Br)C3=NC=C(C=C3)C(F)(F)F

Solubility: ≥14.5mg/mL in DMSO
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.

Shopping Condition: Evaluation sample solution: ship with blue ice
All other available size: ship with RT, or blue ice upon request

Biological Activity

Targets: Membrane Transporter/Ion Channel
Pathways: TRPV1

Description:
PKi: 7.6 for human TRPV1 receptor
Vanilloid receptor-1 (TRPV1) is a nonselective cation channel, predominantly expressed by sensory neurons, playing a key role in the detection of noxious painful stimuli such as capsaicin, heat, and acid. TRPV1 antagonists may represent novel therapeutic agents for the treatment of a range of conditions including chronic pain, gastrointestinal disorders, and migraine. SB-705498 is a potent, selective and orally bioavailable TRPV1 antagonist.
In vitro: Using a Ca2+-based fluorometric imaging plate reader (FLIPR) assay, SB-705498 was
shown to be a potent competitive antagonist of the capsaicin-mediated activation of the human TRPV1 receptor (pKi = 7.6) with activity at rat (pKi = 7.5) and guinea pig (pKi = 7.3) orthologs. SB-705498 caused rapid and reversible inhibition of the capsaicin (IC50 = 3 nM)-, acid (pH 5.3)-, or heat (50°C; IC50 = 6 nM)-mediated activation of human TRPV1 (at 70 mV) [1].

In vivo: Having initially demonstrated that SB-705498 showed good overall in vitro efficacy and oral bioavailability in rat, the in vivo activity of SB-705498 was investigated in the capsaicin-induced secondary hyperalgesia model9 in the rat. This model demonstrates the compound’s antagonist activity in vivo against the specific TRPV1 agonist capsaicin. As an early indicator of potential pharmacodynamic activity, SB-705498 showed excellent activity at 10 and 30 mg/kg po with good reversal of allodynia. Furthermore, SB-705498 was also shown to give 80% reversal of allodynia in the guinea pig FCA model at 10 mg/kg po [2].

Clinical trial: A randomised challenge trial showed that the 3% topical SB705498 cream was clinically well tolerated and had target specific pharmacodynamic activity. However there were no clinically significant differences on pruritus induced by either challenge agent in comparison to placebo. Thus, SB705498 is unlikely to be of symptomatic benefit for histaminergic or non-histaminergic induced itch [3].

Reference:

Caution

FOR RESEARCH PURPOSES ONLY.

NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

Specific storage and handling information for each product is indicated on the product datasheet. Most ApexBio products are stable under the recommended conditions. Products are sometimes shipped at a temperature that differs from the recommended storage temperature. Shortterm storage of many products are stable in the short-term at temperatures that differ from that required for long-term storage. We ensure that the product is shipped under conditions that will maintain the quality of the reagents. Upon receipt of the product, follow the storage recommendations on the product data sheet.