Product Data Sheet

Chemical Properties

Product Name: Tonabersat
Cas No.: 175013-84-0
M.Wt: 391.82
Formula: C20H19ClFNO4
Synonyms: SB-220453;SB 220453;SB220453
Chemical Name: N-[(3S,4S)-6-acetyl-3-hydroxy-2,2-dimethyl-3,4-dihydrochromen-4-yl]-3-chloro-4-fluorobenzamide
Canonical SMILES: CC(=O)C1=CC2=C(C=C1)OC(C2NC(=O)C3=CC(=C(C=C3)F)Cl)O)(C)C
Solubility: Soluble 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: Others
Pathways: Others >> Others
Description: Migraine is a common, recurrent and primary headache disorder. Optimisation of novel cis- and trans-4-(substituted-anfido)benzopyran-3-ol derivatives has led to the identification of Tonabersat (SB-220453) with potential antimigraine activity.
In vitro: Topiramate targets multiple cortical and subcortical loci, altering voltage-gated ion channels and chemical transmission to decrease abnormal brain excitability. Preclinical studies
have identified four properties that may account for the drug’s efficacy in epilepsy and migraine prophylaxis: (i) blockage of voltage-dependent sodium channels; (ii) augmentation of the activity of the neurotransmitter g-aminobutyric acid (GABA) at some subtypes of the GABA-A receptor; (iii) antagonism of the AMPA/kainate subtype of the glutamate receptor; and (iv) inhibition of the carbonic anhydrase enzymes, particularly isozymes II and IV [1].

In vivo: Tonabersat binds selectively to a unique site in the brain. Moreover, tonabersat could markedly reduce cortical spreading depression (CSD) and CSD-associated events and inhibit gap-junction communication between neurons and satellite glial cells in the trigeminal ganglion. Together, these findings indicate that tonabersat should have clinical application in preventing migraine attacks [2].

Clinical trial: Tonabersat showed a preventive effect on attacks of migraine aura but no efficacy on non-aura attacks, in keeping with its known inhibitory effect on CSD. The results support the theory that auras are caused by CSD and that this phenomenon is not involved in attacks without aura [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. Short-term 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.