Product Name: Quetiapine Fumarate
Revision Date: 4/5/2019

Product Data Sheet

Chemical Properties

Product Name: Quetiapine Fumarate
Cas No.: 111974-72-2
M.Wt: 883.09
Formula: C46H54N6O8S2

Chemical Name: 2-[2-(4-benzo[b][1,4]benzothiazepin-6-yl)piperazin-1-yl)ethoxy]ethanol;(E)-but-2-enedioic acid

Canonical SMILES: C1CN(CCN1CCOCO)C2=NC3=CC=CC=C3SC4=CC=C42.C1CN(CCN1CCOCO)C2=NC3=CC=CC=C3SC4=CC=C42.C(=CC(=O)O)C(=O)O

Solubility: $\geq$11.03mg/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: Neuroscience
Pathways: Dopamine Receptor

Description:
Quetiapine Fumarate is a novel atypical antipsychotic used in the treatment of schizophrenia, bipolar I mania, bipolar II depression and bipolar I depression [1]. The antipsychotic effect of quetiapine might be mediated through antagonist activity at dopamine and serotonin receptors. Quetiapine specifically antagonized the D1 and D2 dopamine, the alpha 1 adrenoreceptor and alpha 2 adreno-receptor, and 5-HT1A and 5-HT2 serotonin receptor subtypes[1].
In vitro: Quetiapine has shown affinity for various neurotransmitter receptors including dopamine, serotonin, histamine, and adrenergic receptors. Quetiapine exhibited binding characteristics at the dopamine-2 receptors similar to those of clozapine [1].

In vivo: In animal models, Quetiapine exhibited a preclinical profile suggestive of antipsychotic activity with a reduced tendency to cause extrapyramidal symptoms (EPS) and sustained prolactin elevation. Quetiapine altered neurotensin neurotransmission and c-fos expression in limbic but not motor brain regions. In humans, quetiapine exhibited linear pharmacokinetics with a mean terminal half-life of 7 hours. The optimal dosing range for quetiapine was 150 to 750 mg/day, and recent results suggested that once-daily dosing might be suitable for some patients [1]. Quetiapine prevented schizophrenia and depression in hippocampal cell proliferation and BDNF expression caused by chronic restraint stress (CRS) in rats in a dose-dependent manner. Quetiapine (5 mg/kg) in combination with venlafaxine (2.5 mg/kg) increased hippocampal cell proliferation and prevented BDNF decrease in stressed rats, while each of the drugs exerted mild or no effects [2]. In rats subjected to chronic-restraint stress, chronic administration of quetiapine attenuated the decrease in levels of brain-derived neurotrophic factor (BDNF) in the hippocampi.

The stress-induced suppression of hippocampal neurogenesis was reversed after post-stress administration of quetiapine (10 mg/kg) for 7 or 21 days, evidenced in the numbers of pCREB-positive and BrdU-labeled cells that were comparable to those in non-stressed rats but higher than those in the vehicle-treated rats [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.