

Product Data Sheet

Product Name: Bromisoval (Bromovalerylurea)

Cat. No.: GC33694

Chemical Properties

Cas. No. 496-67-3

SMILES CC(C)C(Br)C(=O)NC(=O)N

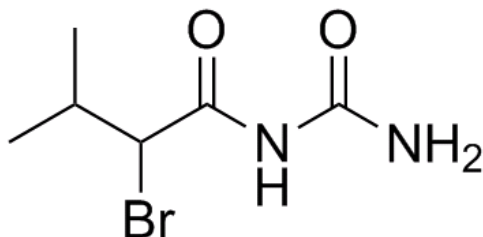
Formula C6H11BrN2O2 M.Wt 223.07

Solubility DMSO : 300 mg/mL (1344.87 mM) 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



Protocol

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

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

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Kinase experiment: Conditioning media are obtained from BV2 cell cultures that have been incubated for 24 h in E2 medium containing 1 µg/ml LPS, with or without Bromisoval (BU) (1-100 µg/mL) or other agents, and subjected to NO determination. To normalize the releasing NO level by the cellular protein contents, cells are solubilized with RIPA buffer (50 mM Tris-HCl, pH 8.0, 150 mM sodium chloride, 0.5% w/v sodium deoxycholate, 0.1% w/v sodium dodecyl sulfate, 1.0% w/v NP-40 substitute) and the protein contents are determined by BCA protein assay reagents[1].

Cell experiment: Murine microglial cell line BV2 is used. BV2 cells are maintained in medium supplemented with 10% fetal bovine serum. BV2 cells are seeded onto wells in 4-well culture plates and incubated with LPS for 30 min to 24 h. When the effects of Bromisoval (BU) or other agents are investigated, BV2 cells are incubated with the appropriate agent (e.g. Bromisoval) for 30 min before the addition of LPS[1].

Animal experiment: Suspensions of the compounds (including Bromisoval) in aqueous 0.5% carboxymethyl cellulose are administered intraperitoneally to adult male albino mice weighing 25-35 g. All tests are performed on groups of ten mice[2].

References:

- [1]. Kawasaki S, et al. Effects of hypnotic bromovalerylurea on microglial BV2 cells. J Pharmacol Sci. 2017 Jun;134(2):116-123.
- [2]. Mrongovius RI, et al. Comparison of the bromureide sedative-hypnotic drugs, bromvaletone (bromisoval) and carbromal, and their chloro analogues in mice. Clin Exp Pharmacol Physiol. 1976 Sep-Oct;3(5):443-7.

Background

Bromisoval has anti-inflammatory effects and has been used as an old sedative and hypnotic.

Bromisoval (BU) suppresses nitric oxide (NO) releasing and proinflammatory cytokine expression in

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lipopolysaccharide (LPS)-treat BV2 cells, a murine microglial cell line. Bromisoval suppresses LPS-inducing phosphorylation of signal transducer and activator of transcription 1 (STAT1) and expression of interferon regulatory factor 1 (IRF1). The Janus kinase 1 (JAK1) inhibitor filgotinib suppresses the NO release much more weakly than that of Bromisoval, although filgotinib almost completely prevents LPS-inducing STAT1 phosphorylation. Knockdown of JAK1, STAT1, or IRF1 does not affect the suppressive effects of Bromisoval on LPS-inducing NO. A combination of Bromisoval and filgotinib synergistically suppress the NO releasing. The mitochondrial complex I inhibitor rotenone, which does not prevent STAT1 phosphorylation or IRF1 expression, suppresses proinflammatory mediator expression less significantly than Bromisoval. Bromisoval and rotenone reduce intracellular ATP (iATP) levels to a similar extent. A combination of rotenone and filgotinib suppress NO release in LPS-treated BV2 cells as strongly as Bromisoval[1].

Bromisoval (Bromvaletone) and carbromal are the most potent central depressants within each series. Depressant activities (ISD50 values) and acute toxicities (LD50 values) in male mice after intraperitoneal injection of Bromisoval are 0.35 (0.30-0.39) and 3.25 (2.89-3.62) mmol/kg, respectively[2].

[1]. Kawasaki S, et al. Effects of hypnotic bromovalerylurea on microglial BV2 cells. J Pharmacol Sci. 2017 Jun;134(2):116-123. [2]. Mrongovius RI, et al. Comparison of the bromureide sedative-hypnotic drugs, bromvaletone (bromisoval) and carbromal, and their chloro analogues in mice. Clin Exp Pharmacol Physiol. 1976 Sep-Oct;3(5):443-7.

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