Product Name: Nigericin sodium salt

Revision Date: 6/30/2016

Product Data Sheet

Chemical Properties

Product Name: Nigericin sodium salt

Cas No.: 28643-80-3

M.Wt: 746.94

Formula: C40H67NaO11

Chemical Name: 

Canonical SMILES: 

Solubility: Soluble in DMSO > 10 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.

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

Biological Activity

Targets:

Pathways:

Description:

Nigericin sodium salt is an ionophore that exchanges K+ for H+ across biological membranes. Ionophore is a lipid-soluble molecule that transports ions across the cell membrane. In medium with Na+, nigericin scarcely affected ADP-induced platelets aggregation, and slightly inhibited thrombin-induced platelets aggregation. Also, nigericin decreased the cytoplasmic pH in the medium with Na+. The effects of nigericin on platelet aggregation are mainly due to its effects on the cytoplasmic pH [1]. The K+ ionophore nigericin is highly effective as an ionophore for Pb2+. Physiological concentrations of Ca2+ or Mg2+ didn’t inhibit nigericin-catalyzed Pb2+...
transport, while K+ and Na+ concentrations (0-100 mM) modestly affected Pb2+ transport. Nigericin may be helpful in the treatment of Pb intoxication [2]. At two concentrations representing the low (5μM) and high ATP (1.5mM) ranges, Nigericin inhibited the ATP-driven transhydrogenase reaction at both ranges with a more pronounced effect on the low ATP concentration. At a concentration of 2.5 mM ATP, nigericin tripled the Oxonol response [3].

Reference:


Product Citations


Product Validation

WT and Casp1/11/-/ BMDC were primed with LPS (100 ng/ml) for 4 h prior to stimulation with nigericin (10 μM) for 30 min, 1 h, 2 h, 4 h, or 6 h, and the extracellular medium was collected and assayed for IL-1β by ELISA. BMDC which were stimulated for 30 min with nigericin were primed with LPS for 5.5 h. Results are the mean ± SEM of 16 experiments. The differences in IL-1β release between WT and Casp1/11/-/ BMDC treated with LPS and nigericin at all timepoints were significant (p < .001), by one-way ANOVA analysis and Bonferroni post-test.

Detergent-insoluble lysates from WT and Casp1/11/-/ BMDC treated with LPS and nigericin as described in (A) were cross-linked with disuccinimidyl suberate (DSS) and run on a 12% polyacrylamide gel. Western blot analysis for detection of monomeric (mono.), dimeric (dimer), and oligomeric (oligo.) ASC was performed.
WT, Casp1/11−/−, and Nlrp3−/− BMDC were LPS primed for 4 h and then stimulated with or without nigericin (10 μM) for 240 min (arrow indicates the addition of nigericin), and the accumulation of fluorescent propidium +/DNA complexes was quantified every 5 min. Propidium fluorescence is expressed as a percentage of maximal dye accumulation after triton X-100 permeabilization. Data points represent the mean ± SE of 2-8 replicates from 4 (WT) or 2 (Casp1/11−/−, and Nlrp3−/−) identical experiments.

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.

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