

Product Data Sheet

Product Name: Flusulfamide

Cat. No.: GC78883

Chemical Properties

Cas. No. 106917-52-6

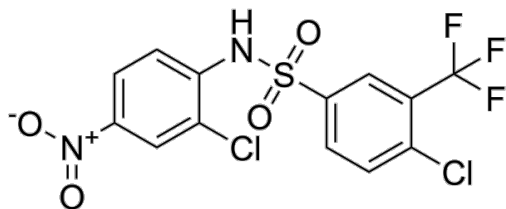
Formula $C_{13}H_7Cl_2F_3N_2O_4S$ M.Wt 415.17

Solubility DMSO: 50 mg/mL (120.43 mM; Need ultrasonic) 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



Background

Flusulfamide is a sulfonanilide Fungicide that effectively inhibits the germination of resting spores of *Plasmodiophora brassicae*, the pathogen causing clubroot in cruciferous crops. Flusulfamide blocks the developmental process of resting spores from stage 1 to stage 2. By downregulating germination-related genes and upregulating immunophilin genes (such as PbCyp3), it induces abnormal accumulation of the PbCYP3 protein, thereby causing the spores to deplete energy in a state of

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

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continuous energy consumption without germination, and reducing their infectivity. Flusulfamide reduces soil ATP content in the early stage of application, but soil microbial biomass gradually recovers 3 days later. Flusulfamide is widely used in research on clubroot control [1] [2] [3].

In Vitro, Flusulfamide (1 ppm; 3-6 d) inhibits the progression of primary zoospore development from stage 1 to stages 2 and 3 in resting spores of Plasmodiophora brassicae (Williams race 4) on the 3rd and 6th days post-incubation^[3]. Flusulfamide (0.5-2 ppm; 5 d) downregulates 80% of the repeatedly expressed germination-related genes in resting spores of Plasmodiophora brassicae (Williams pathotype 4)^[3]. Flusulfamide (1 ppm; 24 h) significantly upregulates the expression of most immunophilin genes in resting spores of Plasmodiophora brassicae (Williams pathotype 4), among which PbCYP3, PbCYP8 and PbCYP10 show upregulated expression at multiple early time points up to 24 h^[3]. Flusulfamide (1 ppm; 24 h) increases the accumulation of the 17.5 kDa PbCYP3 protein in resting spores of Plasmodiophora brassicae (Williams' race 4)^[3].

References:

- [1]. Aviantara D B. The effects of fluazinam and flusulfamide on soil ATP microbial biomass[C]//Proceeding of the International Seminar on Chemistry 2008. 2008: 269-272.
- [2]. Ahn, Gyeong-geun, et al. Analytical Method for the Residues of Flusulfamide, a Benzenesulfonamide Fungicide, in Major Agricultural Products [J]. Korean J. Environ. Agric., 2018, 37(1): 57-65.
- [3]. Sasaki T, et al. Effects of flusulfamide on spore germination of Plasmodiophora brassicae[J]. Journal of Pesticide Science, 2024, 49(1): 52-57.

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