

Product Data Sheet

Product Name: Bovinic acid

Cat. No.: GC31626

Chemical Properties

Cas. No. 2540-56-9

SMILES CCCCC/C=C/C=C\CCCCCCCC(O)=O

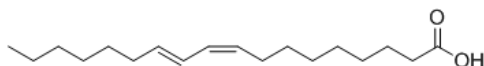
Formula $C_{18}H_{32}O_2$ M.Wt 280.45

Solubility 100mg/mL in DMSO & DMF 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

Animal experiment [1]:

Animal models C57BL/6J mice

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

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Mice were randomly divided into five groups: control, model, taurine (200mg/kg), Bovinic acid (BA, 100mg/kg), and taurine+BA (200 and 100mg/kg, Preparation Method respectively). Taurine, BA, or their combination were administered via intragastric gavage once daily for 10 days. Control and model groups received an equivalent volume of vehicle.

Dosage form 100mg/kg; 10 days; p.o.

Applications Ethanol administration led to elevated serum alanine aminotransferase (ALT) and aspartate aminotransferase (AST) levels in mice, while Bovinic acid, taurine, or a combination of both significantly reduced ALT and AST levels. Furthermore, combination therapy showed the most significant effect.

References:

[1] Dong Z, Zhang Z, Peng Y, et al. Pien Tze Huang ameliorates alcohol-associated liver disease by suppressing oxidative stress and ferroptosis through bovinic acid and taurine[J]. Beizi and Zhao, Mingrui and Gong, Maosheng and Wang, Guangji and Aa, Jiye and Hao, Haiping and Wang, Hong, Pien Tze Huang ameliorates alcohol-associated liver disease by suppressing oxidative stress and ferroptosis through bovinic acid and taurine.

Background

Bovinic acid is a conjugated linoleic acid, an octadecadienoic acid found in natural foods, particularly ruminant products^[1]. Bovinic acid is a potential bioactive component with activities such as anti-oxidative stress, anti-cancer, anti-diabetic, and anti-atherosclerotic effects^[2, 3, 4]. Adding Bovinic acid to milk has a protective effect on colitis mice by activating the colonic nuclear factor-associated factor 2 (Nrf2) pathway^[5].

In vivo, oral administration of Bovinic acid (100mg/kg) to mice with alcoholic liver disease (ALD) for 10 days significantly reduced serum alanine aminotransferase (ALT) and aspartate aminotransferase (AST) levels, decreased malondialdehyde (MDA) levels in liver tissue, and improved liver morphology^[4].

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References:

- [1] Indu B, Jayaprakasha H M. Conjugated Linoleic Acid-The Natural Trans Fat: A Review[J]. Asian Journal of Dairy & Food Research, 2021, 40(4).
- [2] Lock A L, Bauman D E. Modifying milk fat composition of dairy cows to enhance fatty acids beneficial to human health[J]. Lipids, 2004, 39(12): 1197-1206.
- [3] Ayadi M, Hammadi M, Casals R, et al. Influence of management type and stage of lactation on the performance and milk fatty acid profile of dairy camels (Camelus dromedaries)[J]. The Journal of Agricultural Science, 2018, 156(9): 1111-1122.
- [4] Dong Z, Zhang Z, Peng Y, et al. Pien Tze Huang ameliorates alcohol-associated liver disease by suppressing oxidative stress and ferroptosis through bovinic acid and taurine[J]. Beizi and Zhao, Mingrui and Gong, Maosheng and Wang, Guangji and Aa, Jiye and Hao, Haiping and Wang, Hong, Pien Tze Huang ameliorates alcohol-associated liver disease by suppressing oxidative stress and ferroptosis through bovinic acid and taurine.
- [5] Bergamo P, Cocca E, Monaco A, et al. Protective effect of Rumenic acid rich cow's milk against colitis is associated with the activation of Nrf2 pathway in a murine model[J]. Prostaglandins, Leukotrienes and Essential Fatty Acids, 2017, 125: 14-23.

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