

Tomatine Datasheet

5th Edition (Revised in January, 2017)

[Product Information]

Name: Tomatine

Catalog No.: CFN90930

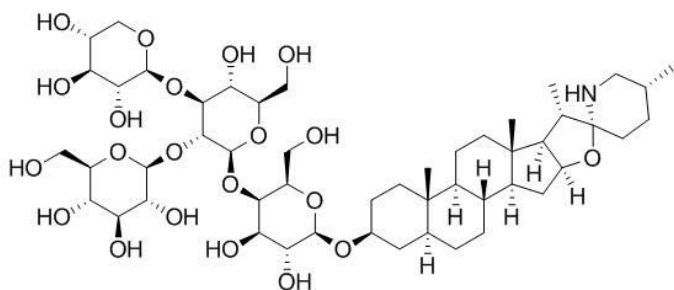
Cas No.: 17406-45-0

Purity: >=98%

M.F: C₅₀H₈₃NO₂₁

M.W: 1034.2

Physical Description: Powder



Synonyms: (3 β ,5 α ,22 β ,25S)-Spirosolan-3-yl-O-beta-D-glucopyranosyl-(1-2)-O-(beta-D-xylopyranosyl)-(1-3))-O-(beta-D-glucopyranosyl-(1-4)-beta-D-Galactopyranoside

[Intended Use]

1. Reference standards;
2. Pharmacological research;
3. Food research;
4. Cosmetic research;
5. Synthetic precursor compounds;
6. Intermediates & Fine Chemicals;
7. Others.

[Source]

The fruits of *Solanum lycopersicum*.

[Biological Activity or Inhibitors]

alpha-Tomatine has fungitoxicity , it is far more toxic at a high pH than at a low pH, this suggests that the unprotonated alkaloid is the active form and that it acts by complexing with fungal sterols.^[1]

alpha-Tomatine is toxic to an endoparasite of a major lepidopterous pest of tomatoes, the parasite acquires the alkaloid from its host after the host ingests the alkaloid, this form of interaction creates a potential dilemma to controlling herbivorous pests through chemical antibiosis in plants.^[2]

alpha-Tomatine induces programmed cell death mediated by reactive oxygen species in the fungal pathogen *Fusarium oxysporum* via activating phosphotyrosine kinase and monomeric G-protein signaling pathways.^[3]

alpha-Tomatine induces apoptosis and inhibits NF- κ B activation on prostate cancer cells, suggests that it may be beneficial for protection against prostate cancer development and progression.^[4]

alpha-Tomatine can inhibit the metastatic ability of A549 cells by reducing MMP-2, MMP-9, and u-PA activities through suppressing phosphoinositide 3-kinase/Akt (PI3K/Akt) or ERK1/2 signaling pathway and inhibition NF-kappaB or AP-1 binding activities, suggests that alpha-tomatine may be an anti-metastatic agent against human lung adenocarcinoma.^[5]

Tomatine has anti-inflammatory activity.^[6]

[Solvent]

Pyridine, Methanol, Ethanol, etc.

[HPLC Method]^[7]

Mobile phase: Tetrahydrofuran-Acetonitrile-0.02 M KH_2PO_4 =50:30:20 ;

Flow rate: 1.0 ml/min;

Column temperature: 30 °C;

The wave length of determination: 205 nm.

[Storage]

2-8℃, Protected from air and light, refrigerate or freeze.

[References]

- [1] Arneson P, Durbin R D. *Plant Physiol.*, 1968, 43(5):683-6.
- [2] Campbell B C, Duffey S S. *Science*, 1979, 205(4407):700-2.
- [3] Ito S, Ihara T, Tamura H, *et al. FEBS lett.*, 2007, 581(17):3217-22.
- [4] Barták V, Pech J, Veigl D, *et al. Plos One*, 2010, 6(4):e18915.
- [5] Shih Y W, Shieh J M, Wu P F, *et al. Food Chem. Toxicol.*, 2009, 47(8):1985-95.
- [6] Filderman R B, Kovacs B A. *Br. J.Pharmacol.*, 1969, 37(3):748-55.
- [7] Kozukue N, Kozukue E, Yamashita H, *et al. J. Food Sci.*, 2006, 59(6):1211-2.

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