Natural Products

ChemFaces

Trigonelline Datasheet

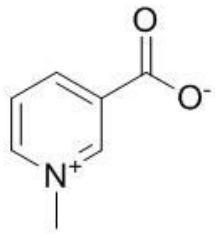
4th Edition (Revised in July, 2016)

[Product Information]

Name: Trigonelline

Catalog No.: CFN90225

Cas No.: 535-83-1



Purity: >=98%

M.F: $C_7H_7NO_2$

M.W: 137.14

Physical Description: Powder

Synonyms: Betainnicotinate; Caffearine; Coffearin;n'-Methylnicotinicacid; Nicotinic acid N-methylbetaine.

[Intended Use]

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

[Source]

The seeds of *Trigonella foenum-graecum L.*

[Biological Activity or Inhibitors]

Trigonelline, a major alkaloid component of fenugreek, have been more thoroughly evaluated than fenugreek's other components, especially with regard to diabetes and central nervous system disease; trigonelline has hypoglycemic, hypolipidemic, neuroprotective, antimigraine, sedative, memory-improving, antibacterial, antiviral, and anti-tumor activities, and it has been shown to reduce diabetic auditory neuropathy and platelet aggregation, it acts by affecting β cell regeneration, insulin secretion, activities of enzymes related to glucose metabolism, reactive oxygen species, axonal extension, and neuron excitability.[1]

Trigonelline has inhibition of the Nrf2 transcription factor, which renders pancreatic cancer cells more susceptible to apoptosis through decreased proteasomal gene expression and proteasome activity, it may be beneficial in improving anticancer therapy.[2]

Trigonelline and chlorogenic acid can reduce early glucose and insulin responses. [3]

Trigonelline and niacin inhibit the invasion of cells at concentrations of 2.5-40 microM without affecting proliferation, hepatoma cells previously cultured with a reactive oxygen species (ROS)-generating system showed increased invasive activity, they can suppress this ROS-potentiated invasive capacity through simultaneous treatment of AH109A cells with the ROS-generating system; indicates fthat the anti-invasive activities of niacin and trigonelline against cancer cells.[4]

[Solvent]

Chloroform, Dichloromethane, Ethyl Acetate, DMSO, Acetone, etc.

[HPLC Method][5]

Mobile phase: 0.01M Phosphate buffer (pH 4.0)- Methanol ,gradient elution ;

Flow rate: 1.0 ml/min;

Column temperature: 30 ℃;

The wave length of determination: 265 nm.

[Storage]

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

[References]

[1] Zhou J, Chan L, Zhou S. *Curr. Med. Chem., 2012, 19(21):3523-31.*

[2] Arlt A, Sebens S, Krebs S, *et al. Oncogene, 2012, 32(40):119-36.*

[3]van Dijk A E, Olthof M R, Meeuse J C*, et al. Diabetes Care, 2009, 32(6):1023-5.*

[4] Hirakawa N, Okauchi R, Miura Y, *et al. Biosci. Biotech. Biochem., 2005, 69(3):653-8.*

[5] Casal S, Oliveira M B, Ferreira M A. *J. Liq. Chromatogr. R. T., 1998, 21(20):3187-95.*

[Contact]

Address:
S5-3 Building, No. 111, Dongfeng Rd.,
Wuhan Economic and Technological Development Zone,
Wuhan, Hubei 430056,
China

Email: info@chemfaces.com
Tel: +86-27-84237783
Fax: +86-27-84254680
Web: www.chemfaces.com
Tech Support: service@chemfaces.com