

Betanin (Red Beet extract diluted with Dextrin)

Catalog No: tcsc046867



Available Sizes

Size: 1g

Size: 5g

Size: 10g



Specifications

CAS No:

7659-95-2

Formula:

C₂₄H₂₆N₂O₁₃

Solubility:

H₂O : 150 mg/mL (272.49 mM; Need ultrasonic)

Observed Molecular Weight:

550.47

Product Description

Activity:

Betanin has potent antioxidant and anti-inflammatory effect, that could inhibit peroxynitrite (ONOO-), with an IC₅₀ of 19.2 μM. Betanin is a red glycoside obtained from beets that can be used as colorant. IC₅₀ & Target: IC₅₀: 19.2 μM (ONOO-)[1]. In Vitro: Betanin is a representative constituent of red beetroot betacyanins, could inhibit peroxynitrite (ONOO-), with an IC₅₀ of 19.2 μM[1]. Betanin also has anti-inflammatory, anti-proliferative effects, nephroprotective activity, cardioprotective activity, strong, antioxidant and angiotensin converting enzyme (ACE) inhibitory activity[2]. Another study is also indicated the protective effect of Betanin against high glucose induced rat renal epithelial cell fibrosis and matrix accumulation, major features of diabetic nephropathy (DN)[2]. In Vivo: Betanin can inhibit the fructose-induced diabetic cardiac fibrosis and paraquat induced acute kidney toxicity[2]. The co-administration of Betanin (20 mg/kg b.w.) to diabetic rats prevent significantly the raise of glucose level and also reverse the levels of insulin compared with untreated diabetic rats. Interestingly diabetic rats treated with Betanin (20 mg/kg b.w.) and glibenclamide portray the significant changes in the body weight compared to diabetic control. HbA1c levels significantly increases

in diabetic rats and when treated with Betanin as well as glibenclamide. Treatment with Betanin as well as glibenclamide to STZ-NA induces diabetic rat's elicited significant decreases in those levels when compared with diabetic control rats[3].

Protocol:

Animal Administration: [3]Rats[3]

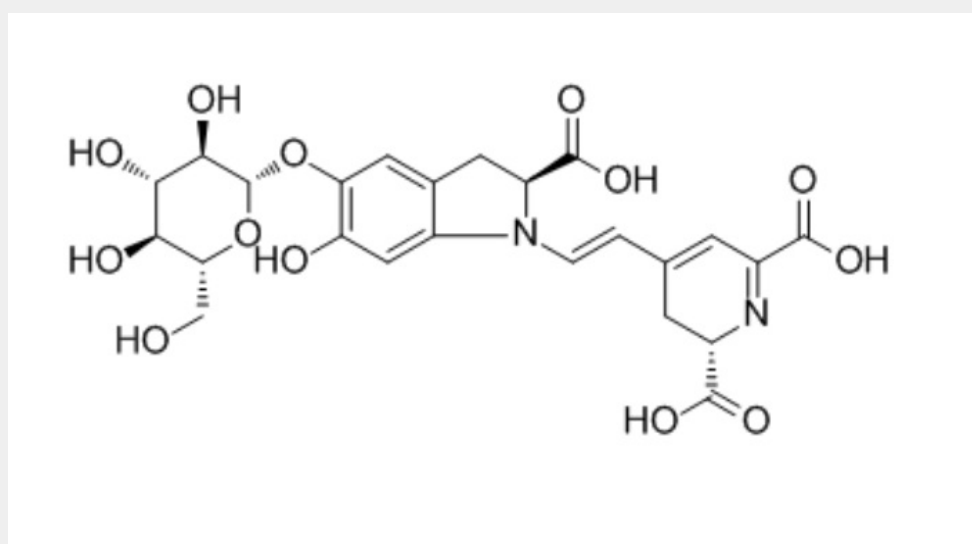
Healthy adult Male albino Wistar strain (*Rattus norvegicus*, 90-120 days of age) are used in the current study. After the successful induction of experimental diabetes, the rats are divided into four groups each comprising a minimum of six rats a total of 30 rats (18 diabetic surviving rats, 12 normal rats). Betanin is administered via oral intubation to the experimental rats using a gavage needle daily for a period of 30 days. Group 1: Normal Control rats. Group 2: Rats treated with Betanin (20 mg/kg b.w.) alone. Group 3: Diabetic Control rats. Group 4: Rats treated with STZ-NA by i.p. and Betanin (20 mg/kg b.w.). Group 5: Rats treated with STZ-NA by i.p. and glibenclamide (600 µg/kg b.w.)[3].

References:

[1]Sakihama Y, et al. Beetroot betalain inhibits peroxynitrite-mediated tyrosine nitration and DNA strand cleavage. *Free Radic Res.* 2012 Jan;46(1):93-9.

[2]Indumathi D, et al. Betanin exhibits significant potential as an antihyperglycemic and attenuating the glycoprotein components in streptozotocin-nicotinamide-induced experimental rats. *Toxicol Mech Methods.* 2018 Sep;28(7):547-554.

[3]Sutariya B, et al. Betanin, isolated from fruits of *Opuntia elatior* Mill attenuates renal fibrosis in diabetic rats through regulating oxidative stress and TGF-β pathway. *J Ethnopharmacol.* 2017 Feb 23;198:432-443.



All products are for RESEARCH USE ONLY. Not for diagnostic & therapeutic purposes!