

external link (opens in a new window)

Search Sources Analytics Alerts My list Settings Live Chat Help Tutorials

Quick Search

Search

Back to results | < Previous 39 of 125 Next >



View at publisher | Download Export Print E-mail Create bibliography Add to My List

Current Drug Delivery

Volume 3, Issue 4, 2006, Pages 399-404

Isolation, characterization and study of enhancing effects on nasal absorption of insulin in rat of the total saponin from *Acanthophyllum squarrosum*Sajadi Tabassi, S.A.^b, Hosseinzadeh, H.^a, Ramezani, M.^a, Moghimipour, E.^c, Mohajeri, S.A.^a^a Pharmaceutical Research Center, School of Pharmacy, Mashhad University of Medical Sciences, Mashhad, Iran^b Pharmacological Research Center of Medicinal Plants, School of Pharmacy, Mashhad University of Medical Sciences, P.O. Box 1365-91775, Mashhad, Iran^c School of Pharmacy, Ahvaz University of Medical Sciences, Ahvaz, Iran

Abstract

View references (20)

OBJECTIVE: Isolation of the total saponins from *Acanthophyllum squarrosum* Boiss. and investigation of its surface activity, haemolytic effects on human erythrocytes as well as enhancing potentials on intranasal insulin absorption in rat in comparison with two other enhancers i.e. Quillaja total saponin (QTS) and sodium cholate (SC). **MATERIALS AND METHODS:** The decrease in blood glucose levels in five fasting rats following nasal administration of regular insulin solutions in the presence or absence of enhancers was determined by glucometric strips and used as an indication of insulin absorption. **RESULTS:** The results showed that ATS decreased surface tension of water to about 50 dyne.cm⁻¹ and caused complete haemolysis of human RBCs at a concentration of 250 µg.ml⁻¹. Following the instillation of solutions containing insulin and different absorption enhancers into the right nostril of rats, the percentage decrease in initial blood glucose was as follows: 72.46% (± 2.39%) for ATS, 63.22% (±11.06%) for QTS and 60.06% (±14.93%) for SC. Percentage lowering in initial blood glucose concentrations against time showed that ATS exhibits a stronger effect than the two other enhancers although the difference was not statistically significant (p>0.05). **CONCLUSION:** ATS has a considerable absorption enhancing effect and can possibly be used to increase insulin bioavailability via nasal route. However the potential toxic effects of this saponin on nasal mucosa should be further evaluated. © 2006 Bentham Science Publishers Ltd.

Reaxys Database Information

|

Author keywords

Absorption enhancers; *Acanthophyllum*; Insulin; Saponin

Indexed keywords

EMTREE drug terms: *Acanthophyllum squarrosum* extract; *Acanthophyllum* total saponin; cholic acid; glucose; inulin; plant extract; Quillaja total saponin; saponin; unclassified drugEMTREE medical terms: *Acanthophyllum squarrosum*; animal experiment; article; controlled study; drug absorption; drug effect; drug isolation; drug structure; glucose blood level; male; medicinal plant; nonhuman; priority journal; rat

MeSH: Administration, Intranasal; Adsorption; Animals; Blood Glucose; Caryophyllaceae; Drug Carriers; Erythrocytes; Hemolysis; Hypoglycemic Agents; Insulin; Male; Nasal Mucosa; Plant Roots; Rats; Rats, Wistar; Saponins

Medline is the source for the MeSH terms of this document.

Chemicals and CAS Registry Numbers: cholic acid, 32500-01-9, 361-09-1, 81-25-4; glucose, 50-99-7, 84778-64-3; inulin, 9005-80-5; saponin, 8047-15-2; Blood Glucose; Drug Carriers; Hypoglycemic Agents; Insulin, 11061-68-0; Saponins

Manufacturers: Drug manufacturer: Merck, Germany; Novo, Denmark; Sigma, United States.

ISSN: 15672018 Source Type: Journal Original language: English

Cited by since 1996

This article has been cited 3 times in Scopus:
(Showing the 2 most recent)

Peng, Q., Zhang, Z.-R., Gong, T.
A rapid-acting, long-acting insulin formulation based on a phospholipid complex loaded PHBHHx nanoparticles
(2012) *Biomaterials*

Zhang, Z., Zhang, W.-S., Ye, H.
Oral hypoglycemic drugs and hypoglycemic active elements from plants for the treatment of diabetes mellitus: A review
(2011) *5th International Conference on Bioinformatics and Biomedical Engineering, ICBBE 2011*

View details of all 3 citations

Inform me when this document is cited in Scopus:

Set alert | Set feed

Related documents

Showing the 2 most relevant related documents by all shared references:

Sajadi Tabassi, S., Hosseinzadeh, H., Ramezani, M.
Isolation, characterization and study of enhancing effects on nasal absorption of insulin in rat of the total saponin from *Acanthophyllum squarrosum*
(2007) *Indian Journal of Pharmacology*

Hinchcliffe, M., Illum, L.
Intranasal insulin delivery and therapy
(1999) *Advanced Drug Delivery Reviews*

View all related documents based on all shared references or select the shared references to use

Find more related documents in Scopus based on:

Authors | Keywords

More By These Authors

The authors of this article have a total of 213 records in Scopus:
(Showing 5 most recent)

Hydroxy acids, the most widely used anti-aging agents
(2012) *Jundishapur Journal of Natural Pharmaceutical Products*

Amin, B., Hajhashemi, V., Hosseinzadeh, H., Abnous, K.
Antinociceptive evaluation of ceftriaxone and minocycline alone and in combination in a neuropathic pain model in rat
(2012) *Neuroscience*

Malekeh Nikouei, B., Chaeni, F.A., Motamedshariyat...

Add apps | Help