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Study on conversion of digestable starch to resistant starch in rice (Ir8) and finding its resistant starch value

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Rice, being a primary source of carbohydrate, its a major food grain in India and whose varieties are used as a staple food. But the GI (glycemic index) of rice was found to be higher than any other starch containing food. [Glycemic Index - 77 ± 2 (high) Glycemic Load - 40.04 (high). (Serving size: 250 grams)]. The rice variety IR8 is chosen as the amylose content was found to be 28.8. The amylose content of IR8 variety is high when compared to other rice variety. The Glycemic index is inversely proportion to amylose content. Resistant starch (RS) is defined as the sum of starch and products of starch degradation not absorbed in the small intestine of healthy individuals. Resistant starches cannot be broken down by digestive enzymes; they pass through the small intestine intact. In the large intestine (colon), they are partly fermented by gut bacteria in a way similar to soluble fibers. In rice the resistant starch (type 3) is formed during heat treatment by roasting at particular temperature (145^0 C) and on sudden cooling, by which the glycemic index of rice gets reduced. After heat treated the rice is grinded into powder and mixed with water and black gram power in correct proportion, and idly batter is made and allowed to ferment. The idly produced from this batter reduces the glycemic index and helps to maintain the blood glucose level for diabetic patient.

Biography

N. Renu Priya is pursuing her M.Tech (Food Processing Engineering) in Karunya University. She did her B.Tech (Food Technology) in Kongu Engineering College. Through this project, she has learnt about resistant starch formed during roasting of rice which reduces the glycemic index.

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Biological activity of Ascidians Polyclinum madrasensis (Sebestian, 1952) and Phallusia nigra (Savigny, 1816) from tuticorin coast of India

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Ascidians are fouling animals with a great ability to synthesis bioactive substances. This study examined the biological potential of ascidians Polyclinum madrasensis and Phallusia nigra. Ascidians were collected and extracted by MeOH (3×0.5 L) and DCM/MeOH (1:1) (3 x 0.5 L). These extracts were tested for biological activities such as bioassay, analgesic activities, CNS depressant activity and anti-inflammatory assay. In mice bioassay, MeOH extracts 150 mg/kg and 200 mg/kg of P. madrasensis showed lethality at 2.45 ± 0.05 and 1.52 ± 0.02 (Mean ± S.D) min & sec, DCM/MeOH extracts of P. madrasensis showed lethality at 2.38 ± 0.05and 2.22 ± 0.04 (Mean ± S.D) min & sec. MeOH and DCM/MeOH extracts of P. nigra were showed lethality at the dose of 200 mg/kg, at 1.10 ± 0.03 and 2.13 ± 0.04 (Mean ± S.D) min & sec. In tail flick method maximum pain reaction time 7.14 ± 0.11** sec was observed in MeOH extract ofP. nigra. In hot plate method maximum pain reaction time (paw licking) 9.12 ± 0.02* sec and pain reaction time (jump response) 8.16 ± 0.01** sec were recorded in MeOH extract of P. nigra after 15 min. The maximum CNS depressant activity recorded 74.43 ± 0.11% in MeOH extract of P. nigra. In anti-inflammatory responsesDCM/MeOH extracts of P. nigra showed promising effects.The result strongly proved that the ascidians extracts has remarkable analgesic and anti-inflammatory activities. Further studies will fulfill for purification and structural elucidation of analgesic and anti-inflammatory drugs.

Keywords: Mice bioassays, analgesic ratio, tail flick, paw licking, jump response and anti-inflammatory.

Biography

N. Sri Kumaran is a Ph. D Research Scholar in Centre of advanced study in Marine Biology, Faculty of Marine Sciences, Annamalai University. He is working on Bio medical and Pharmacological studies in biofouling ascidians. He has 3 years research experience and well knowledge in research filed. He also served as JRF in DBT project. He has published 15 papers in reputed national and international journals with good impact factors.

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