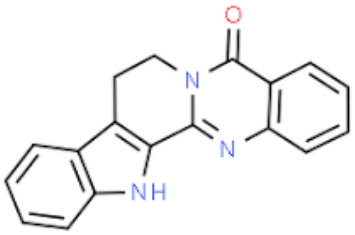
Scientists at IBSD investigated anti-diabetic potential of Rutaecarpine

Rutaecarpine, an indolopyridoquinazoline alkaloid attracted attentions because of possessing various biological activities. Scientists at DBT's Institute of Bioresources and Sustainable Development (IBSD), Imphal investigated the effect of rutaecarpine on glucose and lipid metabolism in high fat diet-multiple low dose streptozotocin induced type 2 diabetic (HFD-db) mice and to understand the mechanism of action. HFD-db mice showed impaired glucose metabolism and lipid profile.



Oral administration of rutaecarpine reduced the blood glucose levels, decreased blood hemoglobin A1c (HbA1c) levels, improved glucose tolerance and restored insulin sensitivity in HFD-db mice. Rutaecarpine also decreased body weight gain, water intake and visceral fat gain in HFD-db mice. Total cholesterol, triglycerides, very low density lipoprotein and low density lipoprotein were reduced and high density lipoprotein level was augmented in rutaecarpine treated HFD-db mice.

Rutaecarpine also reduced the elevated levels of serum glutamic oxaloacetic transaminase, serum glutamic pyruvic transaminase, urea and creatinine in HFD-db mice. Rutaecarpine significantly promoted the rate of glucose consumption, glucose uptake and glycolysis in C2C12 myotubes. Western blotting results showed that rutaecarpine augmented p-GSK-3β and p-AMPK expression, and suppressed G6Pase expression in HepG2 cells. These results suggest that rutaecarpine might be having therapeutic importance to fight against type 2 diabetes mellitus associated with dyslipidemia. The work was published in *Journal of Pharmacological Sciences*.

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