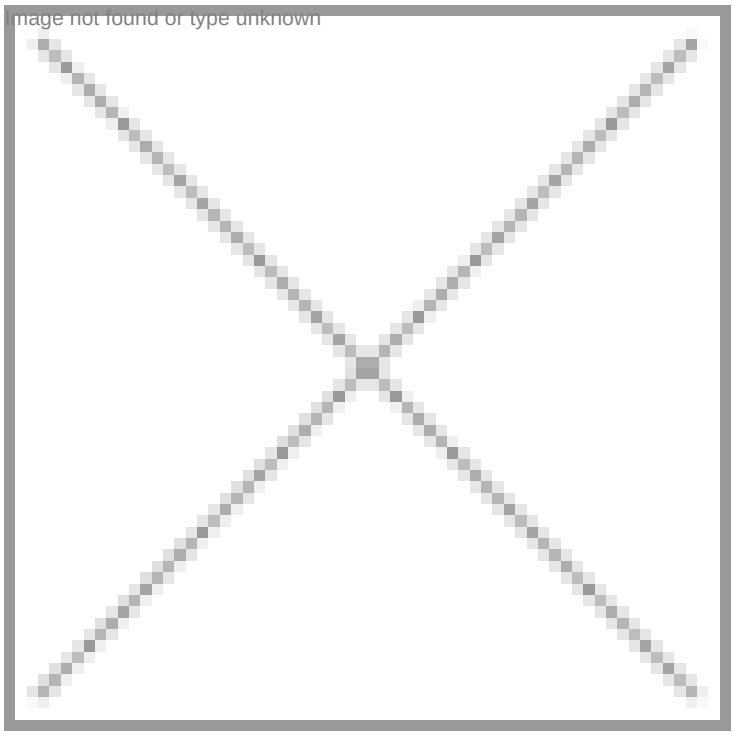
BioSpectrum
the business of Bio & Health Sciences
ASIA EDITION

Latanoprost improves glucose, lipid disorder in diabetes

09 September 2013 | News | By BioSpectrum Bureau



Singapore: Researchers from Shanghai Institute of Materia Medica, Chinese Academy of Science, have discovered that Latanoprost, a clinical drug for treating primary open-angle glaucoma and intraocular hypertension, effectively ameliorated glucose and lipid disorders in the two mouse models of type 2 diabetes.

Type 2 diabetes mellitus is a chronic metabolic disease that is predominately characterized by hyperglycaemia and dyslipidemia, and improvement of glucose and lipid metabolism disorders is a potent therapeutic strategy against this metabolic disease.

In this study, researchers constructed screening platforms targeting RXRa/PPARg heterodimer and AMPK, and the 'old drug' latanoprost was identified from in-house existing drug library with features by inhibiting RXRa/PPARg heterodimer transcription and promoting AMPK phosphorylation.

Cell-based assays on 3T3-L1 adipocytes and C2C12 myotubes demonstrated that latanoprost could promote glucose uptake, inhibit pre-adipocyte differentiation and regulate the main genes responsible for glucose and lipid metabolism.

The above results are in comparison with the animal model-based assays with db/db and ob/ob mice indicated latanoprost potently decreased the levels of fasting blood glucose, HbA1c, fructosamine (FMN), NEFA and total cholesterol, and effectively improved glucose tolerance and glucose/lipid metabolism-related genes in vivo. Their work strongly highlights the potential of latanoprost in the treatment of type 2 diabetes mellitus.