List of best ten papers

1.Nikhil Khurana and **Suman balaSharma**.Modulation of glucose metabolism related genes in diabetic rats treated with herbal synthetic anti-diabetic compound ((α-HSA) : insights from transcriptomic profiling. J Complement Integr Med . 2023 Jul 4. doi: 10.1515/jcim-2023-0156

Abstract: This study provides compelling scientific evidence supporting the.potential of α-HSA as a therapeutic agent for diabetes treatment. The observed upregulation of genes related to glucose metabolism and insulin signalling, along with the downregulation of pro-inflammatory genes,aligns with the pharmacological activity of α-HSA in controlling glucose homeostasis and improving insulin sensitivity. These findings suggest that α-HSA holds promise as a novel therapeutic approach for managing diabetes and its associated complication.

2.Nikhil Khurana, Pankaj Sharma, Sunita Bhagat, **SB Sharma.** "Modulation of Antidiabetic and Antioxidative Status in Experimental Diabetic Rats following Intake of a Novel Succinamic Acid Derivative(α-HSA) ". International . J. Diabetes2021,2(1)68-75

Abstract : Above findings suggest that α-HSA possesses anti-hyperglycemic and antioxidant activity which makes it a suitable candidate for the management of T2DM. However, to establish its role as potent anti-diabetic agent in STZ+NAD induced type 2 diabetic rats, its mechanism of action needs to laid down

3. Aiman A Jafri, **Suman B Sharma** , Nikhil Khurana, Mehndidiratta, Usha R Singh and Kalpana Luthra.Herbal Anti-Hyperglycemic compound Increases Expression of Glucose Transporter Molecules in Diabetic Rates.J. Diabetes Metab2019, 10; 4-7.

Abstract: After treatment with FIIc(herbal anti-diabetic compound) for 6 weeks there was a 1.28 folds increase in GLUT-4 mRNA expression in skeletal muscles and 2.67 folds increase in GLUT-8 mRNA expression in liver tissues of group C rats as compared to group B rats. However, Kv 1.3 potassium channel mRNA expression was found to be at par among the four study groups. FIIc treatment for 6 weeks significantly increases the expression of GLUT-4, GLUT-8 mRNA expression in liver and skeletal muscles leading to increased peripheral insulin sensitivity**.**

4.Nikhil Khurana[1],#, Pankaj Sharma[2],#, Sunita Bhagat[3], **Suman Bala Sharma**[4],*Effect of a novel succinamic acid derivative as potential anti-diabetic agent in experimental diabetic rats.Journal of Drug Delivery and Therapeutics. 2018; 8(6-s):57-62

Abstract:

4-((benzyloxy) amino)-2-hydroxy-4-oxobutanoic acid which is a succinamic acid derivative has been synthesized in 3 step reaction with malic acid. Its structure confirmation was done by various techniques like ^{1}H NMR, ^{13}C NMR, & HRMS and is recently proposed as an insulinotropic agent for the treatment of non-insulin dependent diabetes mellitus. The effect of 4-((benzyloxy)amino)-2-hydroxy-4-oxobutanoic acid was compared with glibenclamide, a reference drug. Treatment with 4-((benzyloxy) amino)-2-hydroxy-4-oxobutanoic acid and glibenclamide resulted in a significant reduction of fasting blood glucose levels with increase in plasma insulin levels in diabetic treated rats. 4-((benzyloxy) amino)-2-hydroxy-4-oxobutanoic acid also resulted in a significant improvement in serum lipids and lipid peroxidation products. Our results suggest the potential role of 4-((benzyloxy) amino)-2-hydroxy-4-oxobutanoic acid in the management of type-2 diabetes mellitus experimental rats.

5.Aiman Abbas Jafri[1,]**Suman Bala Sharma[1]***, Kalpana Luthra[2,] Mohit Mehndiratta[1,] Nikhil Khurana[1] and Usha Rani Singh[3] . Regulation of Gene Expression in Downstream Signaling Molecules by herbal Compound in Insulin Resistant Diabetic Rats. Altern Integr Med 2017, 6:243.

Abstract: After treatment with FIIc(herbal anti-diabetic compound) for 30 weeks we found a significant reduction in post prandial blood glucose levels in group C rats compared to group B. Serum insulin was also reduced in group C rats compared to group B. In skeletal muscles the mRNA expression of PPAR γ and IRS-1 was found to be 2.48 fold and 2.56 fold increased respectively as compared to group B. Similarly the mRNA expression of IRS-2 in pancreas was found to be 2.69 folds increased as compared to group B. Conclusion: FIIc treatment for 30 weeks improves glycemic control and insulin sensitivity by increasing the mRNA expression of PPAR γ, IRS-1 and IRS-2.

6.Gupta R, **Sharma SB**, Singh UR. Salutary effects of Glycine Max seeds on post prandial hyperglycemia and dyslipidemia- evidence from in vivo and in vitro studies. AlternIntegr Med. 2017; vol6: Issue 2

Abstract: : There was a significant improvement in FBG and OGTT in diabetic rats treated with Glycine max after a period of 28 days. The extract also led to a substantial increase in the levels of insulin and c-peptide as compared to diabetic control rats with marked improvement in insulin resistance. Lipid profile and atherogenic factors were significantly improved. Histomorphological examination of pancreatic tissue revealed increased number of islets and β-cells in treated rats as compared to diabetic controls. Subsequently, marked suppression in the activity of alpha amylase and alpha- glucosidase was observed. Conclusion: The antidiabetic property of the extract is attributed through the improvement in insulin secretion, suppression of post- prandial hyperglycemia and β-cell regeneration. Besides its antidiabetic properties, Glycine max seeds also demonstrated salutary effects on the management of dyslipidemia which may be mediated through scavenging of

free radicals as well as suppression of atherogenic lipid variants and apolipoproteins. Overall this study represents Glycine max seeds as a promising therapeutic agent for diabetes and dyslipidemia.

7.Tanwar RS, **Sharma SB**, Prabhu KM. In vivo assessment of antidiabetic and antioxidative activity of natural phytochemical isolated from fruit-pulp of Eugenia jambolana in streptozotocin-induced diabetic rats. Redox rep. 2016 Sep 21:1-7.

Abstract: Administration of FIIc (herbal anti-diabetic compound) 15 mg/kg dose daily for 8 weeks led to significant ($P < 0.001$) fall in fasting blood glucose. Treatment with FIIc (15 mg/kg bwt.) showed significant improvement ($P < 0.001$) in all the biochemical parameters. The results demonstrate that FIIc possesses significant antidiabetic and antioxidative activity.

8..Aiman A Jafri, **Suman B Sharma**, Usha R Singh, KalpanaLuthra. Herbal Anti-hyperglycemic compound Improves Glycemic control and Insulin sensitivity in diabetic Rats.J. DiabetesObes 2016;3(2):1-6

Abstract: FIIc significantly reduced hyperglycemia and dyslipidemia by inhibiting DPP-4 levels and improves insulin sensitivity by increasing protein tyrosine kinase activity and serum insulin levels.

9.**S.B.Sharma** and Richa Gupta . Drug Development from Natural Resource . Medicinal Chemistry 2015; 15 : 52-57

Abstract: Modern research in drug discovery from medicinal plants involves a multidimensional approach combining botanical, phytochemical, biochemical combinatorial chemistry and bioassay-guided fractionation approaches. Natural sources continue to provide an alternative as pharmacological leads against various devastating diseases such as diabetes, CVD, cancer etc. Nowadays, there is enormous requirement of safe and effective drugs in the world. This has prompted scientists to revert back towards natural resources as a potential source of therapeutics for treatment and management of such chronic and fatal diseases. However, there are certain serious challenges and limitations in this field including scale up and commercialization of active compounds which allow only one in thousand lead molecules to be developed as drug. A systematic and scientific approach is an essential requirement for drug development from natural resource. This mini review provides an overview of the methods involved in natural product research starting from crude plant extract to bioactive pharmacological lead. Moreover, it also discusses the limitations of working concerning the bioactivity of medicinal plants.

10. Shipra Gupta **,Suman Bala Sharma**, U R Singh, S K Bansal. Salutary effect of *Cassia auriculata* leaf extract on hyperglycemia-induced atherosclerotic environment in streptozotocin rats. Cardiovascular Toxicology 2011; 11(4):308-315.

Abstract:, The present study was designed to evaluate anti-atherosclerotic potential of aqueous extract of Cassia auriculata L. leaves in streptozotocin (STZ)-induced diabetic rats. The rats were rendered diabetic by STZ (45 mg/kg, ip). Diabetic rats were orally administered C. auriculata leaf extract at 400 mg/kg dose daily for 21 days. The supplementation of extract to the diabetic rats produced significant reduction in fasting blood glucose along with significant reversal in altered serum lipid profile and apolipoprotein B. Lipid peroxidation was found to be significantly suppressed in extract-fed diabetic rats. The significant reduction in serum levels of oxidized low-density lipoprotein, soluble vascular cell adhesion molecule and plasma fibrinogen with a concomitant elevation in serum nitric oxide was observed in diabetic rats following treatment with extract. Histopathological examination of heart myocardium of extract-treated diabetic rats revealed reversal of fatty change toward normal. These results suggest that C. auriculata aqueous leaf extract exhibits anti-atherosclerotic role in the diabetic state and it indicates toward the notion that extract may help to prevent the progression of cardiovascular diseases.