(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :26/07/2022

(21) Application No.202211042857 A
(43) Publication Date : 05/08/2022

(54) Title of the invention : A METHOD OF ELUCIDATION OF POSSIBLE MECHANISM OF ANTIDIABETIC POTENTIAL OF ZN LOADED BRYOPHYLLUM PINNATUM (LAM.) EXTRACTS

(51) International classification :A61K0036410000, A61K0036185000, A21D0002260000, A61K0031155000, A61P0003100000
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

(71)**Name of Applicant :**
1)Dr. Varsha Tiwari
Address of Applicant :Pharmacy Academy, IFTM University, Moradabad (U. P.) ---------- ----------
2)Dr. Abhishek Tiwari
3)Dr. Navneet Verma
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Dr. Varsha Tiwari
Address of Applicant :Pharmacy Academy, IFTM University, Moradabad (U. P.) ---------- ----------
2)Dr. Abhishek Tiwari
Address of Applicant :Pharmacy Academy, IFTM University, Moradabad (U. P.) ---------- ----------
3)Dr. Navneet Verma
Address of Applicant :Pharmacy Academy, IFTM University, Moradabad (U. P.) ---------- ----------

(57) Abstract :
The present study has been focused on the anti-diabetic potential and fingerprinting analysis of B. pinnatum stem as well as elucidating the possible mechanism of action of the same along with identification of Major phyto-constituents. Acute toxicity studies have been performed on both the extracts BPSAL (Bryophyllum pinnatum stem alcohol extracts) and BPSAQ (Bryophyllum pinnatum stem aqueous extract) as per the OECD guidelines. The oral glucose tolerance test (OGTT) has been performed administering the glucose solution (2000mg/kg) to induce hyperglycemia. STZ-induced antidiabetic potential has been performed by single intra-peritoneal injection of STZ (65mg/kg). After confirming the diabetes fasting blood glucose (FBG), body weight and lipids profiles have been determined. Chromatographic analysis (TLC, HPTLC) have been performed to identify the chief phytoconstituents present in extracts. BPSAL and BPSAQ extracts were found to be safe up to a dose of 3000mg/kg. OGTT results showed a reduction in FBG. In diabetic rats, BPSAL significantly decreased FBG ($p<0.001$) and restored the lipid profile, body weight, and anti-oxidant profile when compared to control. When BPSAL at 200, 400mg/kg b.w doses combined with ZnSO4 showed extremely significant reduction in FBG among all groups. Groups received ZnSO4 showed statistically significant reduction in LDL, TG and TC levels and enhanced level of HDL level. Fingerprinting analysis has been performed to identify the major phytoconstituents present in extracts may be responsible for the antidiabetic potential. BPSAL and BPSAQ extracts showed statistically significant antidiabetic activity in STZ induced diabetic rats. ZnSO4 showed synergistic effects on diabetic rats when combined with BPSAL and significantly reduced the FBG, LDL, TG and TC levels and enhanced the level of HDL. Fingerprinting analysis revealed the presence of Flavonoids Morin, chrysin, and 6-hydroxy flavones, as well as iso-quercetin, hyperosides, and terpenoids etc. The above identified phytoconstituents along with in zinc (Zn) and copper (Cu) may be responsible for the marked antidiabetic potential of extracts.

No. of Pages : 28 No. of Claims : 3