

## **Gut ecosystem modulation as precursor for blood glucose regulation through moringa leaves aqueous extract- An experimental study**

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*Moringa oleifera* (MO), also known as drumstick, has gained importance as a medicinal plant. It has high nutritional and pharmacological value. In this experimental study, anti-hyperglycemic effect of different doses of *Moringa oleifera* has been investigated along with its prebiotic activity against *Lactobacillus*. 20 Male Albino rats weighing 200-250 g were housed in cages with free access to water and food. Diabetes was induced using Streptozotocin 50 mg/kg in overnight fasted rats. Diabetic rats were divided in 4 groups (n=5). Control group rats were given Metformin 100 mg/kg/day; treatment group 1, 2 and 3 rats were treated with MO 100, 200, 300 mg/kg/day respectively. Random blood glucose levels were monitored twice a week for 21 days and were represented as mean of each week. Study results conclude that *Moringa oleifera* has promising anti-hyperglycemic properties but results are more evident on a dose of 100 mg/kg/day from  $152.50 \pm 7.7$  to  $119 \pm 7.07$  (p value= 0.010) compared to the other doses (p>0.05). The result of stool analysis showed that it supports the growth of *Lactobacillus* which is evident by increased count of 104 CFU *Lactobacillus* in group 2 & 3 compared to the control group 103 CFU *Lactobacillus*. While higher 105 CFU *Lactobacillus* in group 2 treated with 100 mg/kg/day of MO leaves. *Moringa oleifera* maintained blood glucose level and supports the gut microbial growth as evident by the *Lactobacillus* growth in each treatment group compared to the control group. The results of this study suggest the need of further experimentation for a longer duration to establish the effective dose of *Moringa oleifera*.