



## **Antibacterial activity and Antidiabetic activity of *Costus igneus*, *Gymnema sylvestre* and *Ocimum sanctum***

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**Abstract :** Plants have always been an exemplary source of drugs and many of the currently available drugs have been derived directly or indirectly from them. Indian medicinal plants have been found to be useful for successful management of diabetes. One of the great advantages of medicinal plants is that these are readily available and have very low side effects. The aim of the present study was to determine the antibacterial activity and antidiabetic activity of the leaf aqueous extracts of *Costus igneus*, *Gymnema sylvestre* and *Ocimum sanctum*. The bacterial cultures were used for screening antibacterial activity by disc diffusion method. *Costus igneus* showed the maximum zone inhibition against *P.aeruginosa*, they also showed minimum zone inhibition against *E.coli* and *E.aerogenes* bacterial strains. *Gymnema sylvestre* showed maximum inhibitory activity against *P.mirabilis* and minimum inhibitory activity against *E.coli* and *P.aeruginosa* and the *Ocimum sanctum* showed maximum zone of inhibition against the *E.coli* and the minimum zone inhibitory activity against *E.aerogenes*, *P.mirabilis* and *P.aeruginosa*. Combined Antidiabetic activity was carried out by  $\alpha$ -amylase inhibitory assay. *Costus igneus* plant extract inhibited the  $\alpha$ -amylase at 89.62 % and *Gymnema sylvestre* showed 63.52 %  $\alpha$ -amylase enzyme inhibition whereas *Ocimum sanctum* showed 44.20 % of  $\alpha$ -amylase inhibitory activity. The combined antidiabetic activity of the three plant extracts showed 46 % of the inhibitory activity. Hence, *Costus igneus* showed the maximum inhibition against most of the bacterial strains and also inhibited the  $\alpha$ -amylase enzyme in highest concentration. It is found to be more efficient natural source of medicine when compared to other two plants.

**Keywords :** *Costus igneus*; *Gymnema sylvestre*; *Ocimum sanctum*; antidiabetic activity;  $\alpha$ -amylase; antibacterial.