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Banana flower as potential source of antidiabetic and antioxidant activities

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Banana fruit and plantain (*Musa species*) are among the world's leading fruit crops. According to FAO database, 103 million tonnes of banana were produced in the year 2004. The plantain and unripe banana are consumed cooked and mature dessert banana is eaten raw. The pseudo stem and rhizome of banana has recently been identified as potential nutraceutical, antioxidant rich food beverage. Banana flower and pseudo stem are fibre rich potent antioxidant materials with low glycemic index value. Therefore, they may serve as a beneficial health food supplement for diabetic individuals. Banana flower is used for preparation of curries etc. The flower constitutes several parts such as bract, bell, tepals and stigma. Although, the whole flower has been studied for its health benefits, the individual parts are not analysed for their phytochemical constituents and their biological activities. Despite the observations that banana flower may become a health food supplement for diabetic individuals, the mechanism of its antidiabetic activity is not properly investigated. This research analyzed phytochemical constituents, *in vitro* antihyperglycemic, antihyperlipidemic and antioxidant potentials in 50% aqueous methanol extract of various parts of banana flower. Our analysis showed that stigma of flowers is richest source of polyphenol, flavanoid and anthocyanins. The bract, fused tepals, stigma and bell possess potent free radicals scavenging activities and have varying degrees of advanced glycation end-products (AGEs) formation inhibitory potentials. Furthermore, the bract and bell were observed to possess intestinal α -glucosidase inhibitory activities and fused tepals contain pancreatic lipase inhibitory potentials. Our research finds that the whole edible parts of banana flower are rich source of antioxidant activities and have the potentials of inhibiting the formation of various types of AGEs. The bract and bell are rich source of antihyperglycemic potentials and fused tepals as pancreatic-lipase inhibitors.

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Antibiotic resistance pattern in *Escherichia coli* isolated from 'Panipuri', a street food from Guwahati city, Assam, India

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Antibiotic resistance pattern in *Escherichia coli* isolated from 'Panipuri', a street food from Guwahati city, Assam, India was studied. The study was undertaken to investigate microbial safety aspects of 'Panipuri' sold in Guwahati city enjoyed by wide sections of urban society. 96 'Panipuri' samples were collected from different market places in the Guwahati city. A total number of 57 isolates of *Escherichia coli* were isolated from these samples. The *E. coli* isolates were tested against 11 different antimicrobial agents viz., amikacin, ampicillin, cefotaxime, cefoxitin, cefpodoxime, ceftazidime, chloramphenicol, imipenem, nalidixic acid, streptomycin, tetracycline by standard method. It was found that 59.37% of 'Panipuri' samples had high loads of bacterial pathogen such as *E. coli* and about 51% of them were Multiple Antibiotic Resistant (MAR) isolates. The risks associated with such common food are discussed.

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