Agrobacterium tumefaciens cause a disease in plants Islam et al.[24] examined the antitumor activity of leaf methanol extract of *Oldenlandia diffusa* (willd.) Roxb. Three strains of *A. tumefaciens viz.,* AtTa0112, AtAc0114 and AtSl0105 were used for induction of tumors and methanol extract of *Oldenlandia diffusa* (willd.) Roxb was used for antitumor activity. At 1000 ppm, the percentage tumor inhibition was found to be 40.98, 41.93 and 41.89 % for AtTa0112, AtAc0114 and AtSl0105 strains, respectively. Galsky and Wilsey[22] compared the activities of various plant materials against initiation of crown gall tumors for cytotoxicity as well as inhibition of Leukemia in the mice and observed strong correlation between the antileukemic activity of the samples and their ability to inhibit crown gall tumor formation on potato discs. Mahmood et al.[31] reported 75 % inhibition of tumor by *Withania somifera* L. Dunal and *Datura inoxia* Mill. while 50 % inhibition by *Solanum surrattense* Burm. f.

Although different plants including leaves, stem, roots and bark have been explored for their antigenotoxicity, antimutagenecity and antitumor activities but very few reports are available on these bioactivities of pollen grains. Barzin et al.[2] examined the antimutagenic response of pollen grains of *Phoenix dactylifera* using Ames assay. The authors observed that pollen grains of *Phoenix dactylifera* had 46 % antimutagenic response. In another report, Jaton et al.[12] studied the inhibitory effects of secalosides (a glycosides compound isolated from pollen grains of *Secale cereale*) on S180 sarcoma. The compound showed very strong antitumor activity against S180 sarcoma.

CONCLUSION

Among the four species studied in the present study, *Cassia glauca* has shown maximum tumor reducing potential. It was seen that *Cassia glauca* has induced minimum number (5.93 tumors per disc) of tumors, followed by *Bauhinia variegata*, *Cassia siamea* and *Cassia biflora* during potato disc assay. The present study clearly indicates the antitumor potential of pollen grains of the studied plants. This study is the first report to show the antitumor activities of pollen grains of *Bauhinia variegata*, *Cassia biflora*, *Cassia glauca* and *Cassia siamea* plant species.

ACKNOWLEDGEMENT

The authors are thankful to University Grant Commission (UGC) for providing financial assistance.

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