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## Anticariogenic properties of the ethanol extract of *Dianthus Superbus*

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*Streptococcus mutans* (*S. mutans*) is oral bacteria with a key role in the formation of dental plaque and initiation of dental caries. Therefore, development of more effective, substantial and safe preventive agent against dental caries is honestly required. *Dianthus Superbus* (*D. superbus*) has been used in traditional folk medicine to treat dental caries and periodontal disease. In the present study, we investigated the anticariogenic properties of the ethanol extracts of *D. superbus*. *D. superbus* was extracted with ethanol. The extracted solution was filtered and evaporated under reduced pressure to yield ethanol (3%). We studied the inhibitory effect the ethanol extract of *D. superbus* the growth, acid production, adhesion and water-insoluble glucan synthesis of *S. mutans*. The ethanol extract of *D. superbus* inhibited the growth and acid production of *S. mutans*. In the bacterial adherence assay, the ethanol extract of *D. superbus* significantly lowered the adherence of *S. mutans*. We also found that the ethanol extract of *D. superbus* significantly inhibited the synthesis of water-insoluble glucan by crude glucosyltransferase (GTFase). *D. superbus* gave positive tests for alkaloid, phenolics, flavonoids, glycosides, peptides, steroids and organic acids. These results suggest that *D. superbus* may inhibit the caries-inducing properties of *S. mutans*. Further studies are necessary to clarify the active constituents of *D. superbus* responsible for such biomolecular activities. This work was supported by the Korea Research Foundation Grant funded by Korean Government (MOEHRD).(No. R08-2004-000-10287-0)