

PRELIMINARY STUDY ON A POLYMER CARRIER CONTAINING GINGER EXTRACT WITH POSSIBLE APPLICATIONS IN CARDIOVASCULAR DISEASE

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OBJECTIVES AND BACKGROUND

The aim of the study was to synthesize and characterize a polyurethane drug delivery system used for a ginger extract with possible applications in cardiovascular disease.

MATERIALS AND METHODS

The obtained procedure is based on a poly-addition reaction between a diisocyanate and a mixture of polyols and a spontaneous emulsification in the presence of a surfactant. Only aliphatic compounds were used as raw materials and no other chemicals were added as reaction catalyst or promoters.

RESULTS

Nanostructures sized between 92 and 128 nm, with a medium tendency of agglomeration and very stable to thermal degradation between 30 and 300°C were obtained. We observed the fact that nanostructures' diluted aqueous solution presents a pH around 6.7 and no evidence of any irritation potential was found after using different assays.

CONCLUSIONS

The obtained nanostructures can be used as a polymer carrier for ginger extract based on our results.



Graphical abstract: Chemical structures of: (a) gingerol, (b) eucalyptol, (c) borneol.

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