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Optimized Enzymatic Glycosylation of Natural L-Menthol and Evaluation of Antioxidant Activities of Synthesized Compounds

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INTRODUCTION

Menthol is a monoterpene alcohol, present in the Mentha leaves, have a number of applications in different products.

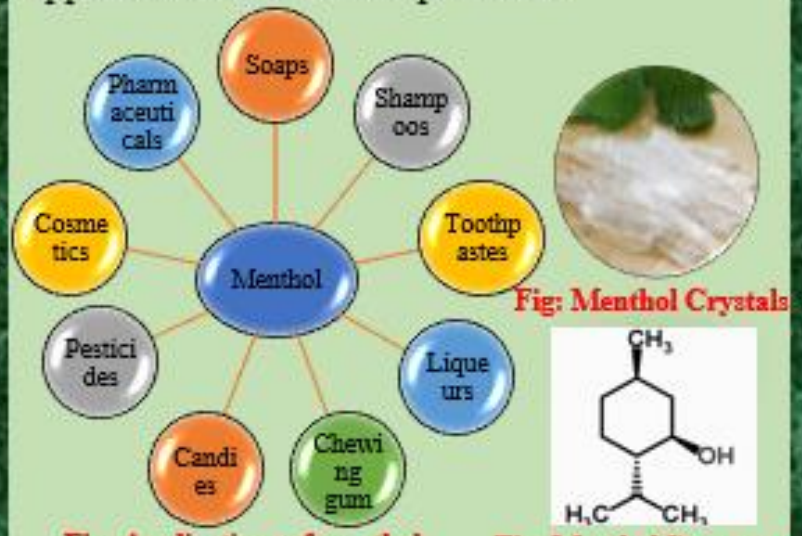

Fig: Applications of menthol

Fig: Menthol Crystals

Fig: Menthol Structure

However, menthol has low solubility in water. It has been observed that menthol glycosides are highly soluble in water.

METHODOLOGY

Menthol will be derivatized using several carbohydrates into respective glycoside compounds by the glycosylation process. Various parameters like temperature, time, enzyme concentration and reactants ratio were optimized and antioxidant activities of produced derivatives were evaluated.

Fig: Synthesis of derivatives

Fig: Antioxidant Activities Evaluation

RESULTS

Table: Products Yield

Sr.No	Product	Yield (%)
1	Menthyl glucoside	27
2	Menthyl Fructoside	0.9
3	Menthyl maltoside	4

Fig: Menthyl Glucoside

Fig: Menthyl Maltoside

CONCLUSION

It was observed that among all synthesized carbohydrate derivatives of menthol, menthyl glucoside was has high yield under optimized conditions. Furthermore, this compound also showed good antioxidant activities as compare to others.

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