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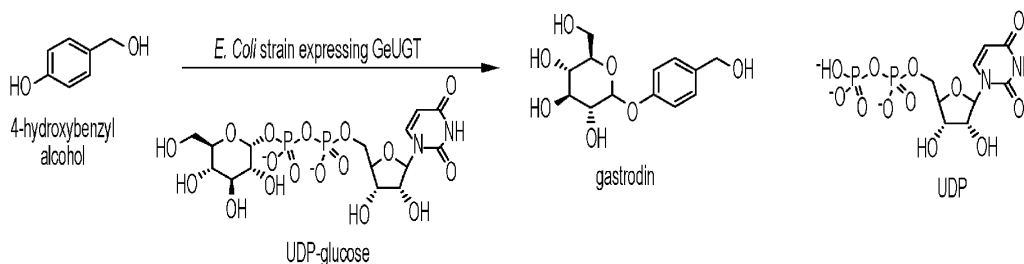


FIG. 1

(57) Abstract: Provided herein are, in various embodiments, host cells, methods, and pharmaceutical compositions including gastrodin, wherein said gastrodin is produced by a transgenic plant or plant cell, fungal cell, yeast cell, insect cell, or bacterial cell. In certain embodiments, the disclosure provides for methods and compositions for the production of gastrodin. In still further embodiments, the disclosure provides for enhanced cells and methods of producing gastrodin.