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(71) Applicant: NATIONAL UNIVERSITY OF SINGAPORE [SG/SG]; 21 Lower Kent Ridge Road, Singapore 119077 (SG).

(72) Inventors: CHANG, Matthew Wook; c/o National University of Singapore, Yong Loo Lin School of Medicine / Dept. of Biochemistry, 21 Lower Kent Ridge Road, Singapore 119077 (SG). CHEN, Binbin; c/o National University of Singapore, Yong Loo Lin School of Medicine / Dept. of Biochemistry, 21 Lower Kent Ridge Road, Singapore 119077 (SG). FOO, Jee Loon; c/o National University of Singapore, Yong Loo Lin School of Medicine / Dept. of Biochemistry, 21 Lower Kent Ridge Road, Singapore 119077 (SG). LING, Hua; c/o National University of Singapore, Yong Loo Lin School of Medicine / Dept. of Biochemistry, 21 Lower Kent Ridge Road, Singapore 119077 (SG).

(74) Agent: DOWSING, Bruce John; Marks & Clerk Singapore LLP, Tanjong Pagar Post Office, P O Box 636, Singapore 910816 (SG).

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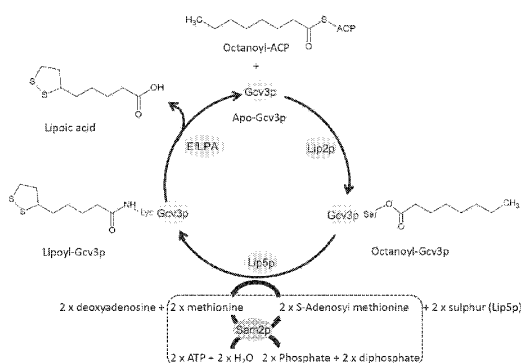
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(54) Title: METABOLIC ENGINEERING FOR PRODUCTION OF LIPOIC ACID

Fig. 1



(57) Abstract: The present invention provides for a method to increase the free lipoic acid production in an isolated genetically engineered bacteria or yeast cell. The method involves culturing in a cysteine supplemented culture medium the engineered bacteria or yeast that is transformed with a recombinant expression vector encoding polynucleotide molecules that results in the overexpression of the following genes that are linked to at least one promoter: (1) substrate protein (e.g. Gcv3p); (2) octanoyltransferase or lipoyl synthase; (3) cofactor S-adenosyl methionine synthase; and (4) lipoamidase. The invention also relates to the engineered bacteria or yeast cell thereof.