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Development and improvement of anti-gout property from aqueous-methanol extract of *Morinda elliptica* using central composite design (Article)Jamal, P.^{2b}  Azmi, S.M.N.^c Amid, A.^{2b} Salleh, H.M.^{2b} Hashim, Y.Z.H.-Y.^{2b} ^aBioprocess and Molecular Engineering Research Unit (BPMERU), Department of Biotechnology Engineering, International Islamic University Malaysia (IIUM), P.O.BOX 10, 50728 Kuala Lumpur, Malaysia^bInternational Institute for Halal Research and Training (INHART), International Islamic University Malaysia, Malaysia**Abstract**[View references \(44\)](#)

Xanthine oxidase (XO) is a key enzyme in hyperuricemia, catalyzing the oxidation of hypoxanthine to xanthine and then to uric acid. Excess serum accumulated with uric acid leads to a type of arthritis known as gout. In this study, development of process conditions for XO inhibitory activity from the leaves of *Morinda elliptica* was performed by using 70% methanol. Optimization of process parameters such as extraction temperature (°C), extraction time (h), agitation speed (rpm) and ratio of sample to solvent (1g/ml) at five levels was carried out using central composite design (CCD) for the improvement of activity to treat gout. The analysis of variance demonstrated that the model F-value of 18.31 showed the significance of the model with R^2 of 97.71%. The analysis revealed that the percentage of XO inhibitory activity was improved at 32 °C, 30 h, 125 rpm and 1 g/15 ml of solvent. The optimized conditions were verified and the percentage of XO inhibitory activity obtained was 88.93%. The results are encouraging to formulate food, nutraceutical or pharmaceutical products incorporating natural xanthine oxidase inhibitor (XOI), an alternative to irresponsible synthetic XOI. © 2014 AENSI Publisher All rights reserved.

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