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ISOLATION AND CHARACTERIZATION OF COMPOUNDS FROM *Pleurotus ostreatus* AND EVALUATION OF ANTI-INFLAMMATORY ACTIVITY

W. J. A. B. N. JAYASURIYA[1*], C. A. WANIGATUNGA[2], G. H. FERNANDO[3], D. T. U. ABEYTUNGA[4], T. S. SURESH[5] & M. IQBAL CHOUDHARY.[6]

[1]Department of Pharmacy and Pharmaceutical Sciences, Faculty of Allied Health Sciences, University of Sri Jayewardenepura, Sri Lanka
[2,3]Department of Pharmacology, Faculty of Medical Sciences, University of Sri Jayewardenepura, Sri Lanka
[4]Department of Chemistry, Faculty of Science, University of Colombo, Sri Lanka
[5]Department of Biochemistry, Faculty of Medical Sciences, University of Sri Jayewardenepura, Sri Lanka
[6]International Centre for Chemical and Biological Sciences, University of Karachi, Pakistan

*Corresponding author: banukie@sjp.ac.lk

Pleurotus ostreatus (P.o) is a culinary-medicinal mushroom grown worldwide. We have reported the anti-inflammatory potential of the aqueous fraction of acetone extract (AqFrA) of P.o and its sub fractions obtained by size exclusion chromatography (Fr_a, Fr_b, Fr_c and Fr_d), normal phase column chromatography (Fr_1, Fr_2, Fr_3, Fr_4 and Fr_5) and silica gel column chromatography (Fr_{1-1}, Fr_{1-2}, Fr_{1-3} and Fr_{1-4}). This study evaluates the isolation and characterization of compounds from different sub fractions and determination of anti-inflammatory activity of compounds. Anti-inflammatory activity of each compound was measured using carrageenan induced rat paw oedema model. The effect on reactive oxidative burst of human whole blood was measured by luminol enhanced chemiluminescence activity. Fr1-1 and Fr2 were further subjected to Sephadex LH 20 column and resulted sub fractions were subjected to recycling size exclusion HPLC, which yielded two pure compounds G and 5 respectively. The Frd was subjected to recycling reverse phase HPLC, yielded one pure compound(A). Frc and remaining Frd were combined and chromatographed over silica gel. Sub fractions subjected to recycling size exclusion HPLC yielded pure compounds (D1) and (C2). The 1H NMR spectrum, 13C NMR spectrum, 2D COSY, NOESY, HSQC, HMBC spectra and the EI+ /ESI mass spectra were recorded. Structure elucidation revealed that compounds A, D1 and C2 were N10 isopentenyl adenosine, uracil and niacinamide respectively. Compound 5 and G speculated to be a derivative of uridine and a disaccharide. N10 isopentenyl adenosine and the derivative of uridine showed more than 50 % inhibition on whole blood oxidative burst (74.6 % and 51.2 % respectively). Treatment with compounds N10 isopentenyl adenosine, derivative of uridine and indomethacin showed significant ($p < 0.05$) inhibition of rat paw oedema when compared with the control group. The anti-inflammatory activity of N10 isopentenyl adenosine was comparable with that of indomethacin at 4th and 5th hours. N10 isopentenyl adenosine, the derivative of uridine and indomethacin showed maximum inhibition of oedema of 83.8 %, 92.3 % and 86.5 % respectively ($p < 0.05$). In conclusion, the derivative of uridine and novel isolated compound N10 isopentenyl adenosine possess significant ($p < 0.05$) anti-inflammatory activity in rats.

Keywords: *Pleurotus ostreatus*, anti-inflammatory, oxidative burst, isopentenyl adenosine