

UPC²-SQD-MS and HPTLC characterization of *Ganoderma lucidum* extracts

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This study was undertaken to evaluate phytochemical constituents of two different parts (fruiting body and mycelia) of the indigenously cultured *Ganoderma lucidum*. Three aqueous extracts were prepared from mycelia (GLM), fruiting body (GLF) and mixture of both mycelia and fruiting body of *Ganoderma lucidum* (GLMF) using accelerated solvent extractor (ASE) at room temperature. A novel technique of ultra performance convergence chromatography coupled with single quadruple mass spectroscopy (UPC²-SQD-MS) has been used for the first time which has the advantage of separating and identifying non-volatile and semi-volatiles as well as both polar and non-polar compounds in single run in a very short time.

Phytochemical analysis was carried out in terms of phenolic and flavonoid content while antioxidant activities were determined in terms of their 1,1-diphenyl-2-picryl-hydrazyl (DPPH) and 2,2'-azino-bis(3-ethylbenzothiazoline-6-sulphonic acid) (ABTS) free radical scavenging activities along with ferric reducing antioxidant power (FRAP) and total reducing power (TRP).

A simple method for HPTLC profiling of flavonoids and antioxidant compounds was also developed and ascorbic acid being a strong antioxidant compound was quantified. Results showed that mycelia extract (GLM) possessed highest phenolic and flavonoid content along with highest antioxidant activity and free radical scavenging activities while fruiting body extract (GLF) was found to have highest ascorbic acid.

Keywords: UPC²-SQD-MS, HPTLC, antioxidants, and ascorbic acid

Biography

Anuja Bhardwaj accomplished her post graduation (M.Sc.) from Amity University, Noida, U.P, in the discipline of Biotechnology. During graduation, Medical laboratory technology was her discipline. She was awarded CSIR-fellowship in the year 2011 in Life Sciences. Currently, she is working as JRF (Ph.D. Scholar), under the supervision of Dr. Kshipra Misra, Scientist 'F'/HOD, Chemistry Division (Phytochemistry) at DIPAS (Defence Institute of Physiology & Allied ScienceS), DRDO, Delhi. She registered Ph.D. from Bharthiar University, Coimbatore, Tamil Nadu. Her thesis work is on "Phytochemical analysis of *Ganoderma lucidum* extracts through various analytical techniques that can help in characterization and evaluation of bio-compounds present in *Ganoderma lucidum*."

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