

**Call for papers**

***Full paper***

Several excellent papers received for the IMMC10 will be published in the International Journal of Medicinal Mushrooms (IJMM). Please send the full paper manuscripts according to journal format of the IJMM (can be download from [www.immc10.com](IMMC7/%E7%AC%AC%E4%B8%80%E8%BD%AE%E9%80%9A%E7%9F%A5%E6%AD%A3%E5%BC%8F%E7%89%88/%E7%AD%B9%E5%A7%94%E4%BC%9A%E4%BC%9A%E8%AE%AE/2013-1-18/NEW/www.immc7.com)) if the IMMC10 secretary informs you of your abstract’s acceptance. Full paper should be submitted online ([www.immc10.com](IMMC7/%E7%AC%AC%E4%B8%80%E8%BD%AE%E9%80%9A%E7%9F%A5%E6%AD%A3%E5%BC%8F%E7%89%88/%E7%AD%B9%E5%A7%94%E4%BC%9A%E4%BC%9A%E8%AE%AE/2013-1-18/NEW/www.immc7.com)) before July 31, 2019. The paper manuscript should not have published in any venue before.

***Different symposia dedicated to*:**

1. Biodiversity and Ethnomycology of Medicinal Mushrooms (Conservation, Taxonomy Ecological Distribution, Historical and Sociological Impact);
2. Genetics and Breeding of Medicinal Mushrooms (including Molecular Biology);
3. Cultivation and Fermentation of Medicinal Mushrooms;
4. Biochemistry and Pharmacology of Medicinal Mushrooms’ Active Compounds;
5. Medicinal Mushrooms in Veterinary and Agriculture;
6. Medicinal Mushrooms in Clinical Practice;
7. Nutritional and Medicinal Values of Mushroom Products;
8. Industrialization of Medicinal Mushrooms Products (including Management, Marketing, Laws and Regulations, Standardization).

**Sample of full paper:**

**Medicinal Mushrooms in Human Clinical Studies.**

**Part I. Anticancer, Oncoimmunological, and Immunomodulatory Activities: A Review (Part I)**

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**ABSTRACT:** More than 130 medicinal functions are thought to be produced by medicinal mushrooms (MMs) and fungi, including antitumor, immunomodulating, antioxidant, radical scavenging, cardiovascular, antihypercholesterolemic, antiviral, antibacterial, antiparasitic, antifungal, detoxification, hepatoprotective, antidiabetic, and other effects. Many, if not all, higher Basidiomycetes mushrooms contain biologically active compounds in fruit bodies, cultured mycelia, and cultured broth. Special attention has been paid to mushroom polysaccharides. Numerous bioactive polysaccharides or polysaccharide-protein complexes from MMs seem to enhance innate and cell-mediated immune responses, and they exhibit antitumor activities in animals and humans. While the mechanism of their antitumor actions is still not completely understood, stimulation and modulation of key host immune responses by these mushroom compounds seems to be central. Most important for modern medicine are polysaccharides and low–molecular weight secondary metabolites with antitumor and immunostimulating properties. More than 600 studies have been conducted worldwide, and numerous human clinical trials on MMs have been published. Several of the mushroom compounds have proceeded through phase I, II, and III clinical studies and are used extensively and successfully in Asia to treat various cancers and other diseases. The aim of this review is to provide an overview of and analyze the literature on clinical trials using MMs with human anticancer, oncoimmunological, and immunomodulatory activities. High-quality, long-term, randomized, double-blind, placebo-controlled clinical studies of MMs, including well-sized population studies are definitely needed in order to yield statistical power showing their efficacy and safety. Clinical trials must obtain sufficient data on the efficacy and safety of MM-derived drugs and preparations. Discussion of results based on clinical studies of the anticancer, oncoimmunological, and immunomodulating activity of MMs are highlighted. Epidemiological studies with MMs are also discussed.

**KEY WORDS:** antioxidant activities, antitumor, β-glucans, biological response modifiers, cancer patients, clinical studies, clinical trials, epidemiological studies, immunomodulation, interferons, interleukins, medicinal mushrooms, natural killer cells, oncoimmunology, polysaccharides, quality of life, secondary metabolites

**I. INTRODUCTION**

The use of mushrooms in traditional ancient therapies dates back to at least the Neolithic Age. For millennia, mushrooms have been valued as edible and medical provisions for humans. Contemporary research has validated and documented much of the ancient knowledge on medicinal mushrooms (MMs). The interdisciplinary field of science that studies MMs has developed and increasingly demonstrates potent and unique properties of compounds extracted from a range of mushroom species, especially in the past 3 decades. Modern clinical practice in Japan, China, Korea, Russia, and several other countries relies on mushroom-derived preparations.1–4

The long history of mushroom use has been documented in Europe (e.g., the story of the mushrooms found in the Iceman Ötzi’s girdle bag: *Piptoporus betulins* [birch polypore] and *Fomes fomentarius* [tinder conk],5,6 as well as *Amanita muscaria* [fly agarics mentioned in Celtic myths]) and in Asia (especially lingzhi or reishi mushrooms [*Ganoderma lucidum* in China], *A. muscaria* [fly agaric in Russia and in Tibetan shamanism and Buddhism], and *Lentinus edodes* [shiitake mushroom in Japan]). Other examples include the use of *Phellinus igniarius* by the Eskimos of Alaska, and some other species used in the African continent (e.g., mushrooms used by Yoruba populations in Nigeria and Benin, and used in Algeria and Egypt). Hallucinogenic species of the genus *Psilocybe* occupy a special place in cultures of Mesoamerica, Mexico, and Guatemala.1–7  ......



**FIG. 1:** The proposed 2-stage model for the anticancer activity of fungal b-glucans by dectin-1 and the CR3 receptor. In the first stage, high–molecular weight b-glucans are bound to dectin-1 and Toll-like receptor (TLR) 2/TLR6 glycosaminoglycans suggests that PSP elicits antiprostate cancer stem cell effects by inducing global changes in chromatin structure and transcriptional profile expression in cancer stem cells via sitespecific histone modifications.22…….

**TABLE 1:** Levels of Evidence

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| --- | --- |
| **Level** | **Study Type** |
| I | High-quality, multicenter or single-center, randomized, controlled trials, or systematic reviews of randomized controlled trials |
| II | Individual cohort studies, low-quality randomized controlled trials, or systematic reviews of these studies |
| III | Individual case-control studies or systematic reviews of case-control studies |
| IV | Case-series, poor-quality cohort and case-control studies |
| V | Expert opinions, case reports, or clinical examples; evidence based on physiology, bench research, etc. |

All general information on clinical studies, including defining the clinical study (e.g., who conducts the research, the purpose and length of the study, reasons for conducting the study, who can participate in the study) can be found on the website of the US National Institutes of Health (www.clinicaltrials.gov), which currently lists 206,158 studies with locations in all 50 states of the United States and 191 other countries.……

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