

Zeitschrift: Mycologia Helvetica
Herausgeber: Swiss Mycological Society
Band: 10 (1998-1999)
Heft: 1

Artikel: Allergological profil of Basidiomycete sensitized subjects
Autor: Helbling, Arthur / Gayer, Federica / Brander, Karl A.
DOI: <https://doi.org/10.5169/seals-1036396>

Nutzungsbedingungen

Die ETH-Bibliothek ist die Anbieterin der digitalisierten Zeitschriften auf E-Periodica. Sie besitzt keine Urheberrechte an den Zeitschriften und ist nicht verantwortlich für deren Inhalte. Die Rechte liegen in der Regel bei den Herausgebern beziehungsweise den externen Rechteinhabern. Das Veröffentlichen von Bildern in Print- und Online-Publikationen sowie auf Social Media-Kanälen oder Webseiten ist nur mit vorheriger Genehmigung der Rechteinhaber erlaubt. [Mehr erfahren](#)

Conditions d'utilisation

L'ETH Library est le fournisseur des revues numérisées. Elle ne détient aucun droit d'auteur sur les revues et n'est pas responsable de leur contenu. En règle générale, les droits sont détenus par les éditeurs ou les détenteurs de droits externes. La reproduction d'images dans des publications imprimées ou en ligne ainsi que sur des canaux de médias sociaux ou des sites web n'est autorisée qu'avec l'accord préalable des détenteurs des droits. [En savoir plus](#)

Terms of use

The ETH Library is the provider of the digitised journals. It does not own any copyrights to the journals and is not responsible for their content. The rights usually lie with the publishers or the external rights holders. Publishing images in print and online publications, as well as on social media channels or websites, is only permitted with the prior consent of the rights holders. [Find out more](#)

Download PDF: 10.08.2025

ETH-Bibliothek Zürich, E-Periodica, <https://www.e-periodica.ch>

Allergological profil of Basidiomycete sensitized subjects

Arthur Helbling, Federica Gayer and Karl A. Brander

Institute of Immunology and Allergology,
University Hospital Bern, Switzerland

Basidiomycetes are morphologically the most complex of all the fungal classes and include mushrooms, puffballs, rusts, smuts and bracket fungi. Spores of *Basidiomycetes* are abundantly found in the outdoor air in many parts of the world. Although positive skin tests, specific serum IgE's and bronchial reactivity have been demonstrated in sensitive subjects, the significance of *Basidiomycetes* as respiratory allergens is not established. Recently it has been demonstrated, that the sensitization to *Basidiomycetes* in Europe and in the USA is comparable to that of well-known *fungi imperfecti* such as *Alternaria*, *Cladosporium*, *Fusarium* and *Aspergillus*. In the present study, we sought to examine whether sensitization to 3 common mushrooms (*Boletus edulis*, *Coprinus comatus*, and *Pleurotus ostreatus*) can be found in subjects referred to an outpatient allergy clinic. We evaluated clinical symptoms of these individuals and identified allergens of these mushrooms by immunoblotting.

Nineteen of 380 subjects (5.0%) with a history of respiratory allergy reacted to at least one of the basidiomycete extracts prepared in our laboratory. 15/19 of these subjects had asthma and 4/19 had rhinitis. Most individuals had an atopic background and 12/19 (63%) were sensitized to molds. SDS-PAGE/ α IgE immunoblots of *Pleurotus ostreatus* revealed 2 reactive bands at 30 and 80 kD, 7 bands (29–110 kD) with *Coprinus comatus* and several bands (34–50 kD) with *Boletus edulis* using pooled sera from 6 skin test-positive subjects. Between *Boletus edulis* and *Coprinus comatus* some putative common allergens were found at 26, 65 and 83 kD. In order to evaluate a cause-and-effect relationship between sensitization to *Basidiomycetes* and respiratory allergy, we are currently performing nasal challenge tests by anterior rhinomanometry. To date, 10 subjects (5 *Pleurotus ostreatus* spores skin test positive and 5 negative) have been challenged with 3 different *Pleurotus ostreatus* concentrations (0.1, 1.0 and 10.0 mg/ml). Following the base-line measurement with saline, 40–50 μ l of the test solution was sprayed into the nostril in 15 minutes intervalls beginning at the lowest concentration. Whereas neither of the 5 controls did react subjectively, nor objectively with any of the concentrations of *Pleurotus ostreatus* extracts, all of the *Pleurotus ostreatus* skin test-positive patients experienced subjective symptoms and a total nasal occlusion at various test concentrations.

Our preliminary data demonstrate, that *Basidiomycetes* may be relevant aeroallergens and may cause respiratory allergies. As demonstrated by immunoblots, *Boletus edulis*, *Coprinus comatus*, and *Pleurotus ostreatus* contain multiple allergens. Further efforts are directed at characterization of major allergenic components of *Boletus edulis*, *Coprinus comatus*, and *Pleurotus ostreatus* via molecular biology methods. The cDNA of a putative *Coprinus comatus* allergen (Cop c 1) has been isolated and is being characterized.