

# 3<sup>rd</sup> International Conference and Exhibition on Clinical & Cellular Immunology

September 29-October 01, 2014 DoubleTree by Hilton Baltimore-BWI Airport, USA

## An extract of the medicinal mushroom *Agaricus blazei* Murill can protect against allergy

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*Agaricus blazei* Murill (AbM) is an edible Brazilian mushroom that has been used in traditional medicine for a range of diseases. It has been shown to have anti-infection and anti-tumor properties in the mouse, which are due to induction of Th1 responses. On the other hand, IgE-mediated allergy is induced by a Th2 response. Since according to the Th1/Th2 paradigm an increased Th1 response may promote a reduced Th2 response, the aim was to examine whether AbM had anti-allergy effects. A mouse model for allergy was employed, in which the mice were immunized s.c. with the model allergen ovalbumin (OVA). Additionally, the animals were given a mushroom extract, AndoSan, mainly (82%) containing AbM, but also *Hericium erinaceum* (15%) and *Grifola frondosa* (3%), or PBS p.o. either a day before or 19 days after the immunization. The mice were sacrificed on day 26, and anti-OVA IgE (Th2 response) and IgG2a (Th1 response) antibodies were examined in serum and Th1, Th2 and Treg cytokines in spleen cells cultures. It was found that the AndoSan extract both when given either before or after OVA immunization reduced the levels of anti-OVA IgE, but not IgG2a, in the mice. There was a tendency to reduced Th2 relative to Th1 cytokine levels in the AndoSan groups.

### Biography

Geir Hetland is MD, PhD, from University of Tromsø, Norway, and also American ECFMG graduate. He did his Postdoctoral studies at The Scripps Research Institute, (1991-1993) when he was awarded the Fogarty International Award. He became Specialist in Immunology and Transfusion Medicine in 1995. He has studied and published on immunomodulatory and medicinal properties of mushrooms for over 15 years at The Norwegian Institute of Public Health and at Oslo University Hospital, where he is Senior Consultant and Professor of Immunology. He is also Co-founder of Immunopharma, which aims at developing the *Agaricus blazei*-based extract, AndosanTM, into add-on hospital medicine.

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