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Identification of immunogenic components of *Aspergillus fumigatus* for vaccine development

Aspergillus fumigatus is the most important air-borne fungal pathogen. In recent years, it became evident that certain unknown components of *A. fumigatus* apparently lead to protection against invasive aspergillosis in a mouse infection model. Until now, it remains to be shown whether the protection is due to a B cell response or rather T cell response.

Furthermore, the components of *A. fumigatus* triggering this response have not been identified.

The proposed project will investigate, which morphotypes (spore, mycelium) promote an immune response and which protein antigens contribute to this host reaction. The immunological properties of selected protein antigens will be further investigated in murine models of Invasive Aspergillosis (8-cells, T-cells). In collaboration with the Charité (Berlin) the T-cell response against IA of Cystic Fibrosis patients will be characterized.

Publications

Blango MG, Pschibul A, Riviuccio F, Krüger T, Rafiq M, Jia L, Zheng T, Goldmann M, Voltersen V, LiJ, Panagiotou P, Kniemeyer O, Brakhage AA (2020) The dynamic surface proteomes of allergenic fungal conidia *J Proteome Res* 19(5), 2092-2104. [Details](#) [Open Access](#)

Schmidt F, Thywißen A, Goldmann M, Cunha C, Cseresnyés Z, Schmidt H, Rafiq M, Galiani S, Gräler MH, Chamilos G, Lacerda JF, Campos A, Eggeling C, Figge MT, Heinekamp T, Filler SG, Carvalho A, Brakhage AA (2020) Flotillin-Dependent Membrane Microdomains Are Required for Functional Phagolysosomes against Fungal Infections. *Cell Rep* 32(7), 108017. [Details](#) [PubMed](#)

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Doctoral Disputation

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