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Measuring interacellular pH during the apoptosis induction and inhibition regarding the *Aspergillus fumigatus* infection

Aspergillus fumigatus is a common environmental fungus which can act as an opportunistic pathogen within immunocompromised individuals. Formerly it has been shown in our group that melanized *A. fumigatus* has bilinear effect on the host cell by manipulating the immune defense system. As the infectious agent and upon macrophage phagocytosis it can lead the cell into death phase, on the other hand it can interfere with the apoptotic cascades to inhibit macrophage apoptosis.

Similarly to the other cell events, apoptosis is a total pH-dependent event, therefore investigating the pH changes within an apoptotic cell and their correlation to the *A. fumigatus* infection can provide further insights into the molecular mechanism beneath. As melanin remarkably can trap free radicals and neutralize unpaired electrons, exploring its role in changing the pH levels of host cell vs. apoptotic host cell is interesting.

In my project, the gradual changes of pH within apoptotic cells which are hosting *A. fumigatus* conidia are being monitored in the single cell level.

Publications

Mohebbi S, Erfurth F, Hennersdorf P, Brakhage AA, Saluz HP (2016) Hyperspectral Imaging Using Intracellular Spies: Quantitative Real-Time Measurement of Intracellular Parameters *In Vivo* during Interaction of the Pathogenic Fungus *Aspergillus fumigatus* with Human Monocytes. *PLoS One* 11(10), e0163505. [Details](#) [PubMed](#)

Supervisor

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Start of PhD

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Doctoral Disputation

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