

***Candida*: Platelet interaction and platelet activity *in vitro*.**

Eberl C, Speth C, Jacobsen ID, Hermann M, Hagleitner M, Deshmukh H, Ammann CG, Lass-Flörl C, Rambach G (2018) *Candida*: Platelet interaction and platelet activity *in vitro*. *J Innate Immun* 11(1), 52-62.

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Abstract

Over the last 2 decades, platelets have been recognized as versatile players of innate immunity. The interaction of platelets with fungal pathogens and subsequent processes may critically influence the clinical outcome of invasive mycoses. Since the role of platelets in *Candida* infections is poorly characterized and controversially discussed, we studied interactions of human platelets with yeast cells, (pseudo-)hyphae, biofilms and secretory products of human pathogenic *Candida* species applying platelet rich plasma and a whole blood model. Incubation of *Candida* with platelets resulted in moderate mutual interaction with some variation between different species. The rate of platelets binding to -*Candida* (pseudo-) hyphae and candidal biofilm was comparably low as that to the yeast form. *Candida*-derived secretory products did not affect platelet activity - neither stimulatory nor inhibitory. The small subset of platelets that bound to *Candida* morphotypes was consequently activated. However, this did not result in reduced growth or viability of the different *Candida* species. A whole blood model simulating *in vivo* conditions confirmed platelet activation in the subpopulation of *Candida*-bound platelets. Thus, the inability of platelets to

efficiently react on Candida presence might favor fungal survival in the blood and contribute to high morbidity of Candida sepsis.

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