

Devillers, A., Courjol, F., Fradin, C., Coste, A., Poulain, D., Pipy, B., Bernardes, ES. and Jouault, T. (2013) Deficient beta-mannosylation of *Candida albicans* phospholipomannan affects the proinflammatory response in macrophages. *Plos One*;8:e84771.

Candida albicans produces a complex glycosphingolipid called phospholipomannan (PLM), which is present on the cell-wall surface of yeast and shed upon contact with host cells. The glycan moiety of PLM is composed of β -mannosides with degrees of polymerization up to 19 in *C. albicans* serotype A. PLM from serotype B strains displays a twofold decrease in the length of the glycan chains. In this study we compared the proinflammatory activities of PLMs purified from *C. albicans* serotype A and serotype B strains and from a *bmt6* Δ mutant of *C. albicans*, whose PLM is composed of short truncated oligomannosidic chain. We found that PLMs activate caspase-1 in murine macrophage cell line J774 independent of the glycan chain length although IL-1 β secretion is more intense with long glycan chain. None of the tested PLMs stimulate ROS production, indicating that caspase-1 activation may occur through a ROS-independent pathway. On the other hand, only long-chain oligomannosides present on PLM from serotype A strain (PLM-A) are able to induce TNF- α production in macrophages, a property that is not affected by blocking endocytosis through latrunculin A treatment. Finally, we demonstrate that soluble and not cell surface-bound galectin-3, is able to potentiate PLM-A-induced TNF- α production in macrophages. PLMs from *C. albicans* serotype B and from *bmt6* Δ mutant are not able to induce TNF- α production and galectin-3 pretreatment does not interfere with this result. In conclusion, we show here that PLMs are able to evoke a proinflammatory state in macrophage, which is in part dependent on their glycosylation status. Long-glycan chains favor interaction with soluble galectin-3 and help amplify inflammatory response.