

VESICULAR POLYSACCHARIDE EXPORT IN *CRYPTOCOCCUS*
NEOFORMANS

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Cryptococcus neoformans is an opportunistic fungus that causes a life-threatening infectious disease in the central nervous system. Glucuronoxylomannan (GXM), the major capsular component of *C. neoformans*, is a well known virulence factor. The polysaccharide is transported to the fungal cell surface and secreted to the extracellular milieu by still unknown mechanisms. Here we demonstrate by transmission electron microscopy and serological methods that *C. neoformans* produces extracellular vesicles containing GXM. The vesicles present bilayered membranes containing sterols and glucosylceramide, as determined by lipid analysis by thin layer chromatography and electrospray ionization mass spectrometry. A correlation between vesicle secretion and capsule growth was suggested, although the vesicles were also detected in acapsular mutants. *C. neoformans* presented mechanisms to release GXM from isolated vesicles to further incorporate the polysaccharide into its cell surface. These results establish an association between secretory vesicles, capsule growth and the trans-cell wall secretion of macromolecules in *C. neoformans*, demonstrating a new cell biology mechanism by which virulence factors and other structures could be released to the extracellular environment.