



## **Role of Matrix Construction and Destruction in *Candida* Biofilm Drug Resistance**

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Fungal *Candida species* pathogens commonly form device biofilms protected from antifungal drugs and the immune system. Much of the drug-resistance phenotype is linked to drug-sequestration by the biofilm extracellular matrix. The *Candida* matrix composition is polymeric and includes a unique mannan-glucan complex which is critical for the resistance phenomenon. Recent studies demonstrate that much of this matrix shield is delivered and assembled by biofilm distinct exosome cargo components which is genetically controlled by the ESCRT pathway. A consensus community cargo core glycome and proteome have been demonstrated to confer cooperative protective function from antifungal therapy across common *Candida* species. The vesicle matrix trafficking pathway is targeted by a newly described antifungal, turbinmicin, which exhibits broad spectrum anti-biofilm properties via inhibition of extracellular matrix delivery and assembly. Preclinical in vitro and in vivo models of turbinmicin therapy suggest promise as a biofouling agent. Further exploration of extracellular vesicle cargo function is likely to further our mechanistic understanding of biofilm community biology.