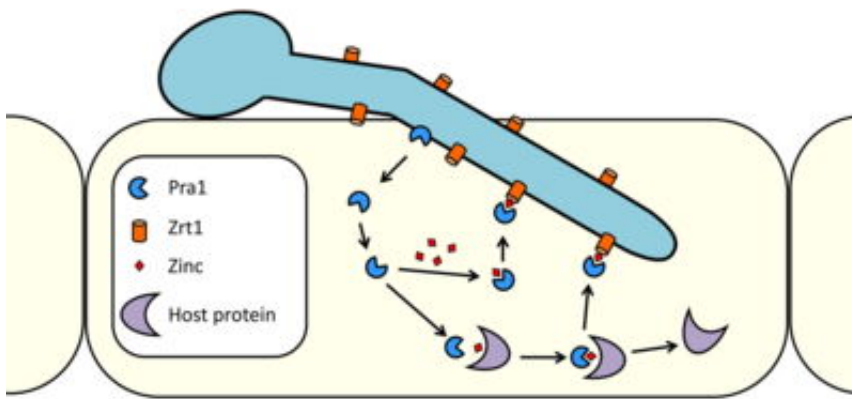


Nutrient acquisition in infections

In order to survive and replicate within the host, pathogens, such as pathogenic *Candida* species, need to obtain nutrients during infections. The host, on the other hand, attempts to withhold these nutrients from the pathogen as much as possible (“nutritional immunity”). A molecular tug-of-war starts, where both sides try to sequester essential micronutrients, for example iron or zinc, and get hold of carbon and nitrogen sources. The outcome of any infection is in large parts determined by this struggle, and understanding the mechanisms behind it will help finding novel ways to fight pathogens.

We are interested in the regulation of the fungal response to low micro- and macronutrient levels, which will be encountered by *Candida* cells in the host. Iron is an essential metal for almost all organisms and iron acquisition within a host is a prerequisite for any type of infection. For this reason, we are investigating the iron uptake systems, and their regulation, in both *C. albicans* and *C. glabrata*. Zinc, as a central cofactor in many proteins, is of similar importance, and our research focuses on the zinc acquisition systems *Candida* species have at their disposal. Finally, as an example of a macronutrient which fungi need to grow, we are investigating the nitrogen sources used by *C. albicans* during infections.



A fungal zincophore system. Invasive *C. albicans* hyphae secrete a zinc-binding protein, Pra1, which sequesters this essential metal from host cells before reassociating with the fungus via a

cognate receptor, Zrt1.