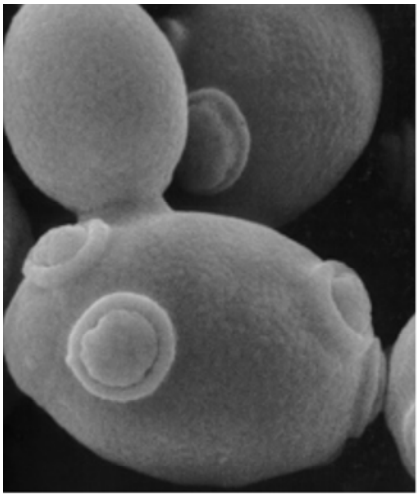
How Do Nanoparticles Get Into Cells?

Environmental and human exposure to nanomaterials is expected to continue to increase in proportion to the rapid growth of the nanotechnology industry. Learning how such materials interact with cells and whether such interactions are harmful or benign is therefore a topic of great interest and urgency. Using the common bread yeast (figure) as a model cell, Dr. Alan Bakalinsky has analyzed conditions and genes that can make a gold nanoparticle relatively harmless or toxic. This particular nanoparticle appears to enter yeast through a channel normally used to take up nutrients necessary for growth. For unknown reasons, the gold particles were found to be relatively harmless to growing cells, but more toxic to non-growing cells. Because this type of nutrient channel is present in a wide variety of organisms, these results are expected to be relevant to the fate and impact of nanomaterials in the natural environment.



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