

Study: How an internal organelle doubles

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Yale University scientists have found a mechanism that regulates the way an internal organelle, the Golgi apparatus, duplicates as cells prepare to divide.

Graham Warren, professor of cell biology, and colleagues at Yale study *Trypanosoma brucei*, the parasite that causes Sleeping Sickness. As with many parasites, it is exceptionally streamlined and has only one of each internal organelle, making it ideal for studying processes of more complex organisms that have many copies in each cell.

When thinking about how cells divide, doubling and separating DNA in chromosomes is often the focus. But equally important is the way a cell prepares its internal organelles for distribution. Warren studies the Golgi complex, a membrane compartment in the cytoplasm that delivers newly made proteins to different membranes in the cell.

"Basal bodies in particular and centrosomes in general have been implicated in the biogenesis of a number of membrane-bound organelles," said Warren. "It prompted us to study further their role in Golgi duplication."

Warren's group has identified a new cellular structure, distinct from the basal body, involved in the duplication of the Golgi apparatus and defined by a highly-conserved protein, Centrin2.

The research appears in the journal Science Express.

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