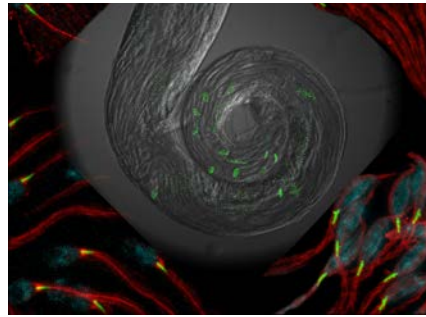




A Novel Atypical Sperm Centriole is Functional During Fly and Human fertilization



Our life started as a single cell (the zygote) that was produced when a sperm fertilized an egg. This cell contained all the information to create an adult made from trillions of cells. Most of these adult cells must have two structures known as the centrioles, which are essential for our body's development and physiology. How the zygote got its first two centrioles is a mystery and is the focus of our research. It is known that the mother's egg does not provide centrioles, so the origin of all the centrioles in our body appears to be from the father's sperm. However, the sperm seems to have only one centriole, so where does the second centriole come from? Using fruit flies as a model animal, we have discovered that the sperm has a new type of centriole. This centriole structure is so small and different from the canonical centriole that it was missed in the past. We, therefore, refer to it as an atypical centriole. We hypothesized that a similar atypical centriole structure is found in the human sperm and recently found that this is the case. This atypical centriole forms by remodeling the typical centriole during sperm formation. The study of the atypical sperm centriole is significant as this atypical centriole may provide explanations to infertile couples with unexplained fertility difficulties that have no treatment for their infertility, miscarriages and for the origin of birth defects.

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Host: Dr. Julie Brill

Date: Friday, Nov. 2, 2018

Time: 1:30 PM

Place: PGCRL 2nd Floor, 686 Bay St.
Event Room 1 (02.9320)