

http://www.biomedcentral.com/news/20050311/01

Primakoff added that no one has worked out a rapid screening method to identify proteins involved in the fusion process, which makes its study particularly hard. "Now we can start thinking about the mechanism of how this protein acts and formulate models on how the fusion process might occur."

"This paper will provide a jolt of energy to the field," said Richard Schultz of the University of Pennsylvania, who did not participate in the study. "Now there's a candidate molecule that is out there that might help us understand better how membranes actually fuse. I think it'll generate a lot of excitement in the field. Schultz, who wrote a related News and Views article, pointed to the potential of Izumo as a target for non-hormonal contraception, based on Okabe's finding that human sperm also contains Izumo and that when exposed to the antibody, sperm becomes unable to fuse with the egg.

Okabe is expecting accompanying proteins to be involved in fusion. "We think that Izumo is not the only factor affecting fusion. We just opened the door for studying the fusion mechanism," he said. "Now we have to find other factors which are also involved in fusion, using Izumo and CD9."

Links for this article

N. Inoue et al., "The immunoglobulin superfamily protein Izumo is required for sperm to fuse with eggs," *Nature*, 434:234-8, March 10, 2005. http://www.nature.com/

Masaru Okabe http://www.asiaandro.com/journal/board/masaru.htm

M. Okabe et al., "Capacitation-related changes in antigen distribution on mouse sperm heads and its relation to fertilization rate in vitro," *J Reprod Immunol*, 11:91-100, June 1987.

[PubMed Abstract]

K. Miyado et al., "Requirement of CD9 on the egg plasma membrane for fertilization," *Science*, 287:321-4, January 14, 2000. [PubMed Abstract]

F. Le Naour et al., "Severely reduced female fertility in CD9-deficient mice," *Science*, 287:319-21, January 14, 2000. [PubMed Abstract]

Paul Primakoff http://som.ucdavis.edu/departments/anatomy/faculty/primakoff.htm

C. Wallace, "Respiratory burst' enzyme found," *The Scientist*, December 8, 2004. http://www.biomedcentral.com/news/20041208/01

Richard M. Schultz http://www.med.upenn.edu/camb/faculty/db/schultz.html

R. Schultz, C. Williams, "Sperm–egg fusion unscrambled," *Nature*, 434:152-3, March 10, 2005. http://www.nature.com/



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