

The cell dynamics of sexual reproduction in foraminifera *Spirillina vivipara*

*Yukiko Nagai^{1,2}, Remi Tsubaki³, Nanami Kishigami², Takashi Toyofuku^{2,4}

1. National Museum of Nature and Science of Tokyo, 2. Japan Agency for Marine-earth Science and Technology, 3. The University Museum, The University of Tokyo, 4. Tokyo University of Marine Science and Technology

Foraminifera performs both asexual and sexual reproduction. In asexual reproduction, it has been reported that the cytoplasm of one foraminifer into 10 to more than 1000 individuals and proliferates. However, foraminifera proliferated many cases by only asexual reproduction in culture experiments. Therefore, information about sexual reproduction is limited. In sexual reproduction, many foraminifers form zoospores and release them to the outside. It has been reported that the released zoospores cross each other and become new individuals. In other benthic foraminifera, there are known species in which 2 to 3 foraminiferal cells are mixed and sexually reproduced.

In this study, we observed cell dynamics of sexual reproduction in the foraminifer *Spirillina vivipara*. This species grows a tubular spirally shell with cytoplasmic growth. It is known that *S. vivipara* grows rapidly and changes generation rapidly enough to divide from the mother cell and become reproductive in a few days (Myers, 1936). In our observations, it was observed that the generation changes while repeating asexual reproduction and sexual reproduction in about 5 to 14 days, so in this study, we described cell dynamics of the sexual reproduction of *S. vivipara* in detail.

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