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[\[Molecular Biology\] NTOU Identified Germ Cells and Somatic Cells in Coral Bodies for the First Time in the World](#)
[Molecular Biology] NTOU Identified Germ Cells and Somatic Cells in Coral Bodies for the First Time in the World
([Chinese Version](#))

CNA, RTI & newtalk.tw (2012/08/29) In an NSC press conference on August 29, National Taiwan Ocean University (NTOU) presented the findings of a research team led by the university's president Ching-Fong CHANG on coral development and reproduction. The research result contributed by the team took the lead in the world unveiling the mechanism of sexual reproduction of scleractinian coral, the understanding of which has opened a heavy door to factitious establishment of coral populations. First of all, the team for the first time in the world found an identifiable marker gene that can help distinguish germ cells and somatic cells in coral bodies, following which, moreover, the team succeeded in developing an antibody and a method to ascertain the early germ cells and the specific location of coral development during both of the breeding season and the non-breeding season. The findings yield better understanding about the cell development of coral bodies, and the research report has been published in the July 27 issue of PLoS One.

The so-called rain forest of the ocean, coral reefs are underwater structures made from calcium carbonate secreted by corals and consist of many polyps that cluster in groups. In response to the decreasing coral coverage, Taiwan tried to restore the corals for a few decades. The main means of restoration are inefficient clonal fragmentation and annual sexual reproduction.

As the result of evolution, coral bodies have no distinct organs and the somatic cells and the germ cells are intermingled together, so we can not obtain the information about the germ cells and their distribution in coral bodies by separating it from somatic cells via traditional histological analysis. According to Ching-Fong CHANG, vasa gene, which determines germ cells, is widely used as marker gene for germ cells in both vertebrates and invertebrates, which means as long as the vasa gene can be identified, the location of the germ cells can be ascertained.

The research team first collected the information about the germ cells in coral bodies by means of biopsy and immunohistochemistry. Then the team succeeded in selecting and colonizing the vasa gene of coral germ cells, producing an antibody, and locating the specific venue of germ cells' development. This was a significant breakthrough in the studies of corals, which do not have sexual organs.

Besides, the team also found for the first time that the early germ cells exist in the whole reproduction cycle and they continue the reproduction in turn once they are stimulated by certain signals. Ching-fong CHANG said, this discovery is not easy, for corals do not have sex organs. He continued, the findings bring forth much understanding about the reproduction mechanism of corals and they points out several promising directions and possible methods to activate the development of coral germ cells.

CHANG said, in the future the team will try to specify the factors or hormones relating to the development of coral germ cells. The goal is to develop methods for artificial coral propagation. If the development hormones are identified, the methods to accelerate the development of coral germ cells or to promote the emission of sperms and ova may be developed. This will largely benefit the restoration of coral reefs.

Related Website:

<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0041569>

Further Information:

[CNA 2012/08/29](#) (Chinese)

[RTI 2012/08/29](#) (Chinese)

[Newtalk.tw 2012/08/29](#) (Chinese)

[National Science Council International Cooperation Sci-Tech Newsbrief](#)

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