

**【Abstract of 2009 Grant – in – Aid for Scientific Research on Innovative Areas
(Research in a proposed research area)】**

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| Title of project | Elucidating Common Mechanisms of Allogeneic Authentication: Mechanisms of Sexual Reproduction Shared by Animals and Plants |
| Head Investigator Name | SAWADA Hitoshi., Nagoya University, Graduate School of Science, Professor |
| Abstract of Research Project Term of Project: 2009–2013 | <p>Sexual reproduction is achieved by both gamete recognition (allorecognition) and fusion between allogeneic cells (membrane fusion), which elicit genetic diversity in the next generation. In this project, the above two processes in sexual reproduction are designated “allogeneic authentication” as an integrated term.</p> <p>The allogeneic authentication mechanisms have been thought to be highly diverse in animals and plants. However, we recently found that the self-sterile mechanism (allorecognition) in a hermaphroditic ascidian is very similar to those found in flowering plants and that a sperm protein (GCS1) functioning in gamete fusion in flowering plants is present in marine invertebrates, which led us to propose that the common core mechanisms in sexual reproduction exist in animals and plants. Therefore, we generated a novel research project elucidating the common mechanisms, which are essential for sexual reproduction (or allogeneic authentication) in animals and plants.</p> |