

## Accelerator Applications Research Division Beam Mutagenesis Group

### 1. Abstract

This group promotes biological applications of ion beams from RI Beam Factory (RIBF). Ion Beam Breeding Team studies various biological effects of fast heavy ions and develops new technology to breed plants and microbes by heavy-ion irradiations. Plant Genome Evolution Research Team choose baker's yeast and the legume *Lotus japonicus* as model systems to characterize genomic mutations using the population genomics approach with robust molecular biology and bioinformatics techniques.

### 2. Major Research Subjects

- (1) Biological effects of fast heavy ions
- (2) Molecular nature of DNA alterations induced by heavy-ion irradiation
- (3) Research and development of heavy-ion breeding
- (4) Genomics-based approach to revolutionize the mutagenesis in plants and microbes

### 3. Summary of Research Activity

Summary of research activities of the two teams are given in the sections of each team.

## Members

### Director

Tomoko ABE

### Senior Visiting Scientist

Yutaka ARIMOTO