

## **Abstract**

To compare the distribution of storage proteins in low-glutelin rice seed with that in other cultivars having normal protein compositions, immunofluorescence labeling with specific antibodies was applied to visualize the distribution of storage proteins in endosperm tissues. The endosperm tissues from five cultivars were reacted with anti-prolamin and anti-glutelin antibodies, and then observed by light microscopy and confocal laser scanning microscopy (CLSM). In low-glutelin rice, using microscopic analysis, a large proportion of storage proteins was observed in the endosperm tissue of 70% polished rice. To determine the localization of two types of protein bodies in endosperm tissues, images of the distribution of the type I protein body (PB-I) and the type II protein body (PB-II) were obtained by CLSM. The CLSM images showed that, in low-glutelin rice, prolamin which accumulates in PB-I remains in the center of 70% polished rice grains despite the elimination of 30% of the outer layer of brown rice grains. However, the other cultivars mostly contained glutelin which accumulates in PB-II and is distributed throughout the endosperm tissues. This shows that low-glutelin rice differs from the other cultivars not only in the major storage protein composition but also in the distribution of storage proteins in endosperm tissues.