

RIKEN ion beam technology used to create brewing yeast

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Three types of Japanese sake called 'Nishina Homare' produced using a new brewing yeast

Heavy ion beams produced by the RIKEN Ring Cyclotron at the RI Beam Factory have played a key part in the alcoholic beverage-brewing process.

The Radiation Biology Team at the RIKEN Nishina Center for Accelerator-Based Science, in [collaboration](#) with the Saitama Industrial Technology Center and the Saitama Sake and Shochu Makers Association, have used the ion beams to produce a new brewing yeast. The yeast is now being used to produce several brands of sake by local

brewers in Saitama prefecture, in a distinct example of RIKEN technology's practical applications in industry.

Three types of sake brewed using the new [yeast](#) were produced at three breweries in Saitama, and entered the market in November 2011. They are collectively known as 'Nishina Homare' ('in honor of Nishina'), named after Yoshio Nishina, the father of nuclear physics in Japan and one of RIKEN's most eminent scientists.

Ion beams also have applications in the generation of new plant varieties. As heavy ion beams induce mutagenesis—a process which results in a mutation—more rapidly than other breeding techniques, they are capable of generating new varieties in plants within just a few years. Using this technique, which was pioneered in Japan, Radiation Biology Team leader Tomoko Abe has already developed a number of new plant varieties, including dahlias, petunias, dianthus, salt-resistant rice and high-yield rice. The most recent variety developed by Abe's team is a new type of cherry blossom that can bloom all year round.

Provided by RIKEN

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