

## S14-5 Cooperative research on breeding of licorice

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Licorice is an important resource that is used as a crude drug, a sweetener, and a source of glycyrrhizin (GC). We have been investigating growing licorice that yields a high content of GC through selective and molecular breeding. Immunoassay has advantages for analysis of a lot of samples and from an ecological respect. Anti-GC monoclonal antibody (MAb) has been produced and applied for indirect competitive ELISA, immunochromatographic tests, and eastern blotting as screening methods. These methods show high degrees of reproducibility and accuracy as intra-, inter-assays and recovery experiments. Using these screening methods, we have begun to breed licorice with a high added value. Another approach, immunomodulation using a gene encoding the anti-GC antibody is to be conducted to increase the concentration of GC in licorice. Based on our results, we have gained support from Kyushu University and the town of Genkai in Saga Prefecture. Cooperative research into breeding licorice was launched this year. However, the cultivation of licorice is not easy in Japan because it usually grows in arid regions. However, we would like to overcome this difficulty by applying a multidisciplinary approach with researchers from the Graduate School of Engineering, Kyushu University.