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## Mapping and Characterization of genetic loci controlling salt-tolerance for breeding salt-tolerance rice in saline paddy field.

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### Summary

We analyzed quantitative trait loci (QTLs) in rice (*Oryza sativa* L.) for leaf bronzing induced by growing plants in a saline paddy field. The mapping population comprised 98 backcross-inbred lines (BILs) derived from crosses between Nipponbare, the recurrent parent, and Kasalath varieties. Fifteen of the BILs showed obvious leaf bronzing, but the parent varieties did not. We identified two QTLs for leaf bronzing: one (*qLb-3*) on the long-arm of chromosome 3, the other (*qLb-11*) on the short-arm of chromosome 11. The Kasalath allele of *qLb-3* and the Nipponbare allele of *qLb-11* were found to promote leaf bronzing. Furthermore, we clarified the interaction between the two QTLs using F<sub>2</sub> Plants derived from crosses between SL47 and SL61. In the F<sub>2</sub> plants, segregants harboring both the Kasalath *qLb-3* allele and the Nipponbare *qLb-11* allele showed leaf bronzing. These results suggest that leaf bronzing was induced by an epistatic interaction of the Kasalath *qLb-3* allele on chromosome 3 and Nipponbare *qLb-11* allele on chromosome 11.