

# FUNCTIONAL CHARACTERIZATION OF THE *OsSWEET14* GENE INVOLVED IN THE INFECTION OF BLIGHT LEAF BACTERIA IN BACTHOM 7 VARIETY RICE

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## Summary

*Xanthomonas oryzae* pv. *oryzae* (*Xoo*) causes serious bacterial leaf blight disease to many major rice cultivars, including the Bacthom 7 variety. *OsSWEET14* belongs to group III of the *OsSWEET* family encoded sugar transport proteins and seem to be one of the “susceptibility” genes for infection of *Xoo* in rice. In this study, the pathotype of 18 *Xoo* strains collected from eight provinces in North of Vietnam with Bacthom 7 genotype was evaluated. Bacthom 7 variety was very sensitive to 17/18 *Xoo* strains. The expression of Bacthom 7 *OsSWEET14* was induced by three of five representative *Xoo* strains, including XO\_52, XO\_59 and XO\_69. The DNA fragment of Bacthom 7 *OsSWEET14* promoter was isolated, cloned into the pGEM-T vector and sequenced completely. The isolated promoter showed the similarity of more than 99 % to the published *OsSWEET14* promoter sequence (AP014967.1 and CP012619.1), contained four effector binding elements (EBE), including *TalC*, *Tal5*, *PthXa3* and *AvrXa7* that reconized by the type III-secretory transcription activator-like (TAL) proteins of the *Xoo*. This research is the basis for generating bacterial leaf blight disease resistant Bacthom 7 rice variety in Vietnam.

**Keywords:** *Bacterial leaf blight disease, Bacthom 7, SWEET14, TAL, Xanthomonas oryzae.*