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Functional characterization of *piggyBac*-like elements from *Nilaparvata lugens* (Stål) (Hemiptera: *Delphacidae*)

Key words: *Nilaparvata lugens*; *piggyBac*-like elements; transposon; *NlPLE25*

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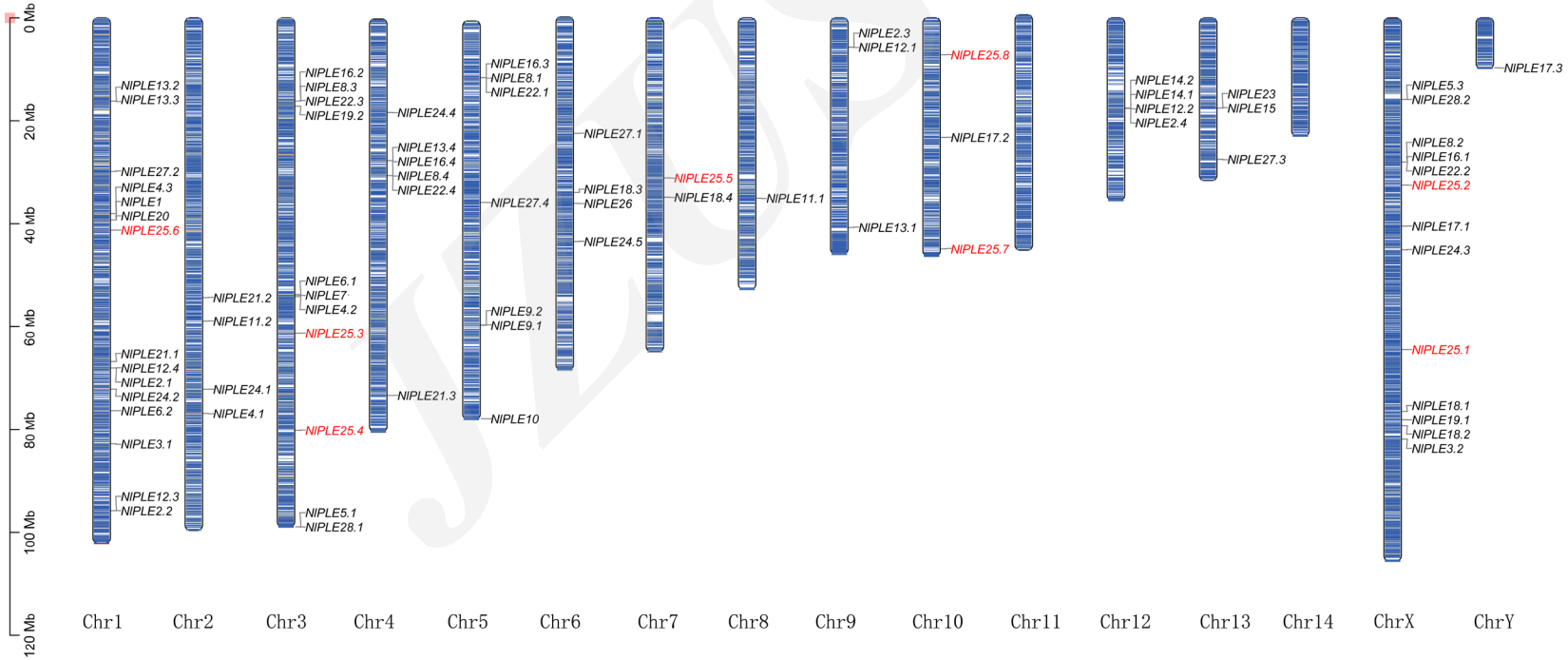
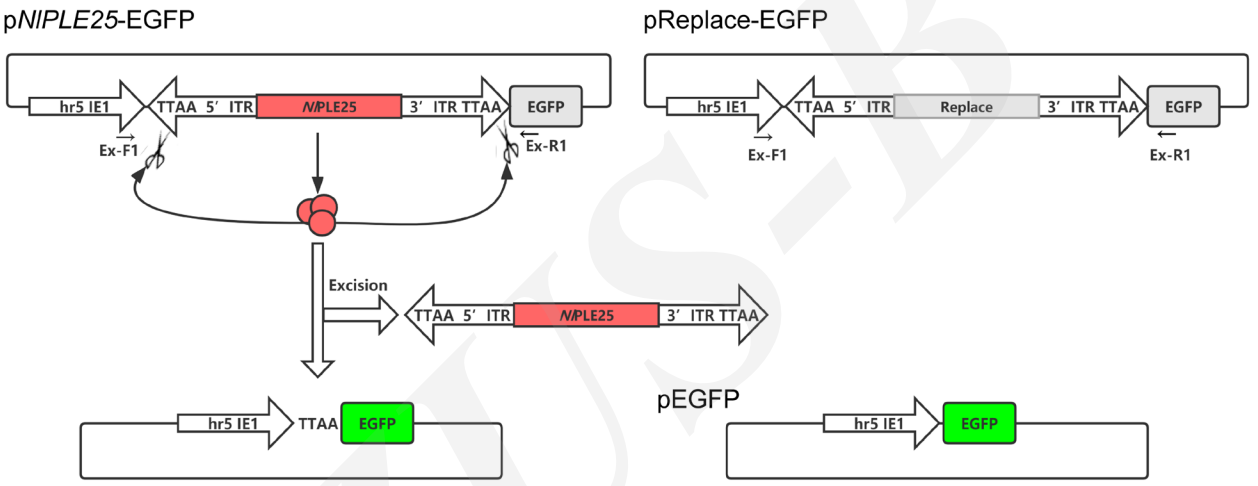
Research Summary

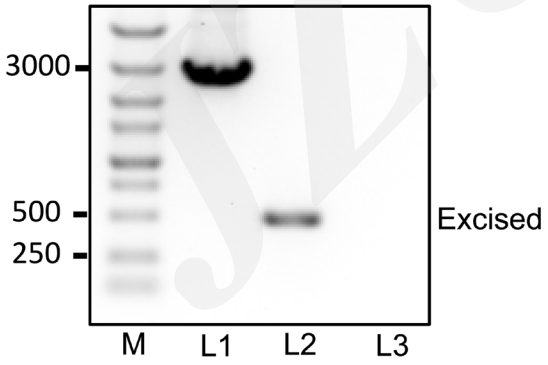
We conducted a genome-wide analysis of *PLEs* in the brown planthopper (BPH) *Nilaparvata lugens* (Stål) (Hemiptera: *Delphacidae*), and identified a total of 28 *PLE* sequences. All *N. lugens piggyBac*-like elements (*NlPLEs*) were present as multiple copies in the genome of BPH. Among the identified *NlPLEs*, *NlPLE25* had the highest copy number and it was distributed on five chromosomes.

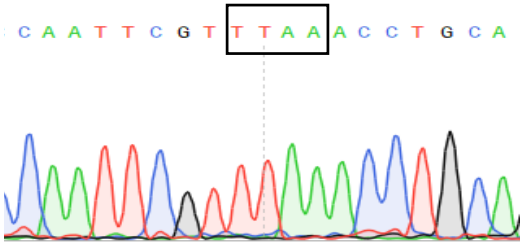


Research Summary

***N*IPLE25 transposase caused precise excision and transposition in cultured insect cells and also restored the original TTAA target sequence after excision.**

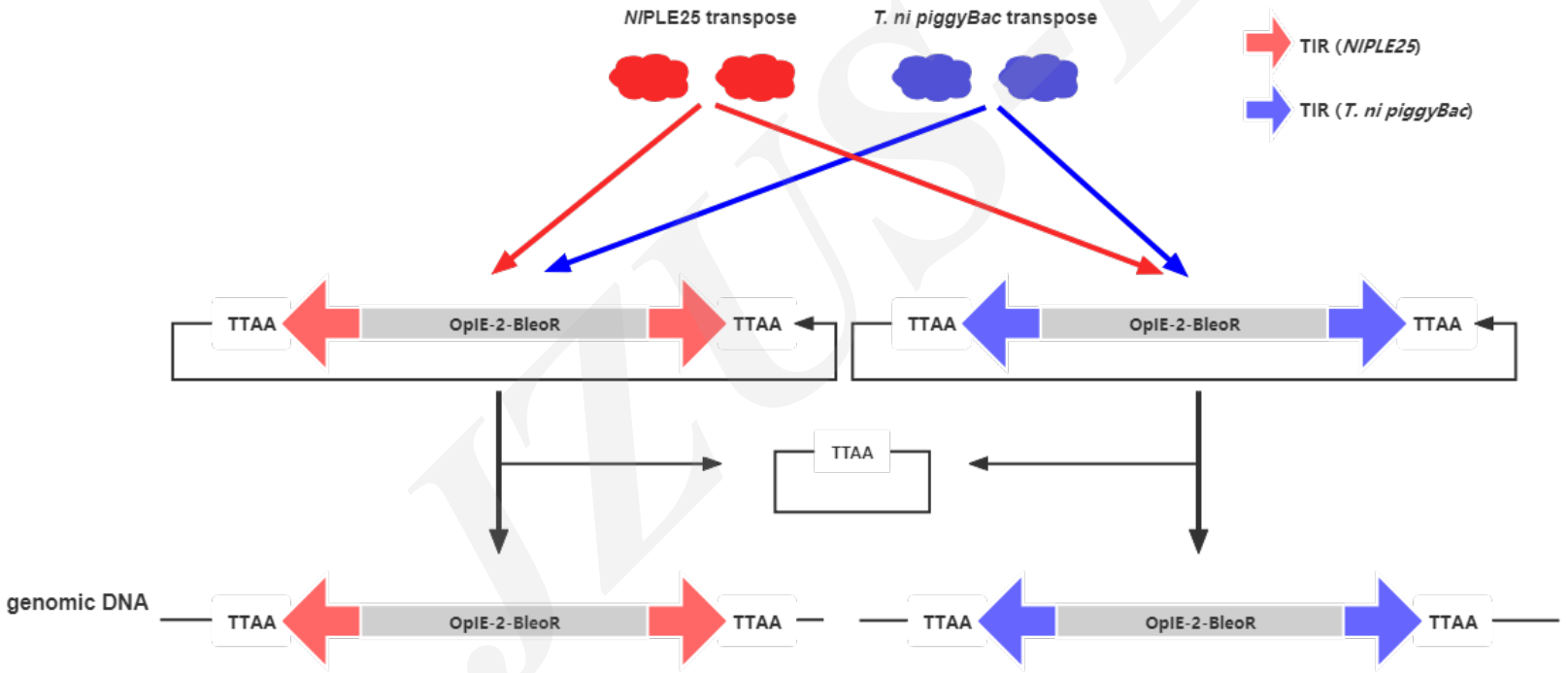






Research Summary

A cross-recognition between the *NIPLE25* transposon and the *piggyBac* transposon was also revealed in this study.



Innovation points

- **This study was the first to identify 28 *piggyBac*-like elements in the brown planthopper.**

- ***Nl*PLE25 transposase achieved precise excision and transposition in cultured insect cells. We also indicated cross-recognition between the *NlPLE25* transposon and the *piggyBac* transposon.**

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Figure 4