

# Rapid detection of red turpentine beetle (*Dendroctonus valens* LeConte) using nested PCR

**Abstract:** The red turpentine beetle (RTB), *Dendroctonus valens* LeConte (Coleoptera: Scolytidae), which is native to North America, is an invasive wood-boring insect species in China with disastrous consequences. Plant quarantine is an important method to prevent its invasion. In order to distinguish RTB from the other four closely related bark beetles, *Scolytus schevyrewi* Semenov, *Xyleborus artemcomans* Schedl, *Xyleborus interjectus* Blandford and *Blastophagus minor* Hartig, which are frequently intercepted at Chinese ports, this study developed a nested PCR assay system. The specificity of the nested PCR primers for recognizing RTB was confirmed by the failure of amplification of genomic DNA from the other four Scolytidae species. The sensitivity was approximately 40 pg of a recombinant RTB plasmid. The validity of the assay was evaluated by analyzing bark beetle samples intercepted at quarantine stations. These findings demonstrate that this is a rapid, specific molecular method for the identification of *D. valens* for the assessment of pest risk and plant quarantining.

●Key words: *Dendroctonus valens*; identification; nested PCR.

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## 研究阶段成果：

Shi Juan , **Chen Fang**, Luo You-Qing , Wang Zhuang, Xie Bing-Yan. First isolation of pine wood nematode from *Pinus tabuliformis* forests in China. Forest Pathology. (SCI, 已接收)

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