

## Synthesis and bioactivity of natural ferulic acid derivatives against *Ralstonia solanacearum* isolated from mulberry tree

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**Abstract:** Wheat bran is a by-product of wheat processing into flour, which is mainly used as feed raw materials, with low added value, resulting in a serious waste of resources. Ferulic acid is one of the main active substances in wheat bran. Ferulic acid was extracted from wheat bran by enzymatic method, ferulic acid acyl chloride was prepared by chlorination method, and then ferulic acid monoterpene ester was synthesized by esterification with seven monoterpene alcohols. The antibacterial activity of ferulic acid derivatives was studied by the inhibition rate of *Ralstonia solanacearum* from mulberry tree. The results show that wheat bran extract, phenolic acid and monoterpenol had inhibitory effect on *Ralstonia solanacearum*. The EC<sub>50</sub> values of ferulic acid, cinnamic acid, p-coumaric acid and caffeic acid to *Ralstonia solanacearum* were 0.22 mg/ml, 0.1 mg/ml, 0.24 mg/ml and 0.23 mg/ml. The antibacterial activity of monoterpenoid ferulate was better than ferulic acid. The EC<sub>50</sub> value of menthyl ferulate was 0.52 mg/L. It can be used as a potential antibacterial agent.

**Key words:** Wheat bran; Ferulic acid; Synthesis of derivatives; *Ralstonia solanacearum*.