Coagulase activation of prothrombin by staphylococcus induces the formation of fibrin deposition that facilitates the establishment of infection by Staphylococcus species. Coagulase activity is a key characteristic of Staphylococcus pseudintermedius; however, no coagulase gene or associated protein has been studied to characterize this activity. We report a recombinant protein sharing 40% similarity to Staphylococcus aureus coagulase produced from a putative S. pseudintermedius coagulase gene. Prothrombin activation by the protein was measured with a chromogenic assay using thrombin tripeptide substrate. Stronger interaction with bovine prothrombin than with human prothrombin was observed. The S. pseudintermedius coagulase protein also bound complement C3 and immunoglobulin. Recombinant coagulase facilitated the escape of S. pseudintermedius from phagocytosis, presumably by forming a bridge between opsonizing antibody, complement, and fibrinogen. Evidence from this work suggests that S. pseudintermedius coagulase has multifunctional properties that contribute to immune evasion that likely plays an important role in virulence.

**Abstract Title:** Identification, Cloning, and Characterization of *Staphylococcus pseudintermedius* Coagulase