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(54) **NUCLEIC ACIDS ENCODING FUNGAL SERINE PROTEASE**

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(58) **Field of Classification Search**

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See application file for complete search history.

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(57) **ABSTRACT**

The present invention is related to a fungal serine protease enzyme, which comprises an amino acid sequence the mature Fa_RF7182 enzyme having an amino acid sequence of SEQ ID NO: 18. The serine protease is obtainable from *Fusarium acuminatum*, more preferably from the deposited strain CBS 124084. Also disclosed are nucleic acid sequences encoding said protease, such as plasmid pALK2530 comprising the nucleotide sequence SEQ ID NO:12 deposited in *Escherichia coli* RF7803 under accession number DSM 22208 and plasmid pALK2531 comprising the full-length gene SEQ ID NO: 13 deposited in *E. coli* RF7879 under accession number DSM 22209, as well as fungal hosts, such as *Trichoderm*. Said protease is useful as an enzyme preparation applicable in detergent compositions and for treating fibers, for treating wool, for treating hair, for treating leather, for treating food or feed, or for any applications involving modification, degradation or removal of proteinaceous material.

46 Claims, 21 Drawing Sheets