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(54) Title: BACTERIAL STRAINS, GENES AND ENZYMES FOR CONTROL OF BACTERIAL DISEASES BY QUENCHING QUORUM-SENSING SIGNALS

(57) Abstract: The present invention relates to isolated nucleic acid molecules encoding an autoinducer inactivation protein, wherein the encoded protein comprises an amino acid sequence selected from the group consisting of $^{104}$HXHXDH$^{109}$~60aa~H$^{169}$~21aa~D$^{191}$ and $^{103}$HXHXDH$^{108}$~72aa~H$^{180}$~21aa~D$^{202}$, and to expression vectors and transformed plant and animal cells comprising the same. The proteins encoded by these nucleic acid molecules provide to a susceptible plant or animal increased resistance to a disease the virulence of which is regulated by autoinducers. Also provided are methods of increasing disease resistance in susceptible plants and animals.