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(57) Abstract: The present invention relates to endolysin variants comprising an endolysin to which a peptide stretch with membrane or LPS disrupting activity is fused. Moreover, the present invention relates to nucleic acid molecules encoding said modified endolysin variant, vectors comprising said nucleic acid molecules and host cells comprising either said nucleic acid molecules or said vectors. In addition, the present invention relates to a method for producing said endolysin variant. Further, the present invention relates to said modified endolysin variant for use as a medicament, in particular for the treatment or prevention of Gram-negative bacterial infections, as diagnostic means, disinfectant or as cosmetic substance. The present invention also relates to the removal or reduction or prevention of Gram-negative bacterial contamination of foodstuff, of food processing equipment, of food processing plants, of surfaces coming into contact with foodstuff, of medical devices, of surfaces in hospitals and surgeries. Furthermore, the present invention relates to the use of said endolysin variant as a diagnostic means in medicinal, food or feed or environmental diagnostic. Finally, the present invention relates to a pharmaceutical composition comprising said modified endolysin variant