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(71) Applicant (for all designated States except US): CIBA-GEIGY AG [CH/CH]; Klybeckstrasse 141, CH-4002 Basle (CH).

(72) Inventors; and

(75) Inventors/Applicants (for US only): KRAMER, Vance, Cary [US/US]; 608 Dana Court, Hillsborough, NC 27278 (US).
CURRIER, Thomas, Curtis [US/US]; 4207 Oak Hill Road, Chapel Hill, NC 27514 (US).

(74) Common Representative: CIBA-GEIGY AG; Patentabteilung, Klybeckstrasse 141, CH-4002 Basle (CH).

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(54) Title: NOVEL BACILLUS THURINGIENSIS GENES CODING TOXINS ACTIVE AGAINST LEPIDOPTERAN PESTS

(57) Abstract

The present invention is drawn to novel toxin genes purified and isolated from *Bacillus thuringiensis* var *kurstaki* and given the designations CryIE(c) and CryIE(d). The novel toxin genes encode proteins of approximately 130 kDa in size and are active against Lepidopteran insects. Also included in the invention are the proteins encoded by CryIE(c) and CryIE(d). Further disclosed are recombinant genes and proteins derived from CryIE(c) and CryIE(d). Also provided are biologically pure bacterial strains transformed with at least one of the novel toxin genes which can be used in entomocidal formulations for the control of Lepidopteran insects. Yet another aspect of the invention are plants transformed with at least one of the toxin genes or active fragments thereof, particularly where the transforming sequences have been optimized for expression in maize.