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(54) Title: MODIFIED HUMAN GRANULOCYTE-COLONY STIMULATING FACTOR AND PROCESS FOR PRODUCING SAME



G00001

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T  P  L  G  P  A  S  S  L  P  Q  S  F  L  L  K
aca ccc ctg ggc cct gcc agc tcc ctg ccc cag agc ttc ctg ctc aag

C  L  E  Q  V  R  K  I  Q  G  D  G  A  A  L  Q
tgc tta gag caa gtg agg aag atc cag ggc gat ggc gca gcg ctc cag

E  K  L  C  A  T  Y  K  L  C  H  P  E  E  L  V
gag aag ctg tgt gcc acc tac aag ctg tgc cac ccc gag gag ctg gtg

L  L  G  H  S  L  G  I  P  W  A  P  L  S  S  C
ctg ctc gga cac tct ctg ggc atc ccc tgg gct ccc ctg agc tcc tgc

P  S  Q  A  L  Q  L  A  G  C  L  S  Q  L  H  S
ccc agc cag gcc ctg cag ctg gca ggc tgc ttg agc cag ctc cat agc

G  L  F  L  Y  Q  G  L  L  Q  A  L  E  G  I  S
ggc ctt ttc ctc tac cag ggg ctc ctg cag gcc ctg gaa ggg ata tcc

P  E  L  G  P  T  L  D  T  L  Q  L  D  V  A  D
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F  A  T  T  I  W  Q  Q  M  E  E  L  G  M  A  P
ttt gcc acc acc atc tgg cag cag atg gaa gaa ctg gga atg gcc cct

A  L  Q  P  T  Q  G  A  M  P  A  F  A  S  A  F
gcc ctg cag ccc acc cag ggt gcc atg ccg gcc ttc gcc tct gct ttc

Q  R  R  A  G  G  V  L  V  A  S  H  L  Q  S  F
cag cgc cgg gca gga ggg gtc ctg gtt gct agc cat ctg cag agc ttc

L  E  V  S  Y  R  V  L  R  H  L  A  Q  P
ctg gag gtg tcg tac cgc gtt cta cgc cac ctt gcg cag ccc
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(57) Abstract: A modified human granulocyte-colony stimulating factor (hG-CSF) is produced by culturing a microorganism transformed with an expression vector comprising a gene encoding a modified hG-CSF to produce and secrete the modified hG-CSF to periplasm, said modified hG-CSF being obtained by replacing at least one of the 1st, 2nd, 3rd and 17th amino acids of wild-type hG-CSF (SEQ ID NO: 2) with other amino acid

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