

Sequence Listing 076936  
SEQUENCE LISTING

<110> WANG, Hemu

<120> HEPATITIS B TREATMENT VACCINE BASE ON INACTIVATED WHOLE  
RECOMBINANT HANSENULA POLYMORPHA CELLS WHICH EXPRESSES  
HBSAG AND HBCAG

<130> 107P001440US

<150> CN201610176389.4

<151> 2016-03-25

<160> 5

<210> 1

<211> 681

<212> DNA

<213> Artificial sequence

<220>

<223> the sequence is synthesized

<400> 1

|                                                                   |     |
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| atggagaaca tcacttcagg gtttctagga cctctcctgg tgttgcaggc gggcttcttc | 60  |
| ctgttgaccc gaatcctcac cataccgcag agtctggata gctggtggac gtctctcaac | 120 |
| tttctcggcg gctcccctgt ctgtctcggc cagaactcgc aatcccctac ctctaaccac | 180 |
| tcgccaacct cttgtcctcc aatttgtcca gggtaccgct ggatgtgtct gaggcgggtt | 240 |
| atcatttttc tcttcatctt gctcctgtgc cttatcttct tgttggtgct gcttgactat | 300 |
| cagggcatgt tgccagtctg ccctctgatc cctggatcta ctacgacttc tactggtcca | 360 |
| tgcaagacgt gcactacccc cgccaagga aactccatgt tcccctcctg ctgttgcacg  | 420 |
| aagcctaccg acggcaattg cacctgcac ccatcccat cgtcgtgggc attcgctaag   | 480 |
| tatctgtggg agtgggccag cgtcagattc tcttggctct ccttctagt gccattcgtc  | 540 |
| caatggttcg taggcctttc cccgactgtt tggctttccg ccatttggat gatgtggtat | 600 |
| tgggggccat cgctctacag cattgttagt ccttttatcc cactgctgcc cattttcttt | 660 |
| tgcccttggg tttacatcta a                                           | 681 |

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<210> 2  
 <211> 226  
 <212> PRT  
 <213> Artificial sequence

<220>  
 <223> the sequence is synthesized

<400> 2

Met Glu Asn Ile Thr Ser Gly Phe Leu Gly Pro Leu Leu Val Leu Gln  
 1 5 10 15

Ala Gly Phe Phe Leu Leu Thr Arg Ile Leu Thr Ile Pro Gln Ser Leu  
 20 25 30

Asp Ser Trp Trp Thr Ser Leu Asn Phe Leu Gly Gly Ser Pro Val Cys  
 35 40 45

Leu Gly Gln Asn Ser Gln Ser Pro Thr Ser Asn His Ser Pro Thr Ser  
 50 55 60

Cys Pro Pro Ile Cys Pro Gly Tyr Arg Trp Met Cys Leu Arg Arg Phe  
 65 70 75 80

Ile Ile Phe Leu Phe Ile Leu Leu Leu Cys Leu Ile Phe Leu Leu Val  
 85 90 95

Leu Leu Asp Tyr Gln Gly Met Leu Pro Val Cys Pro Leu Ile Pro Gly  
 100 105 110

Ser Thr Thr Thr Ser Thr Gly Pro Cys Lys Thr Cys Thr Thr Pro Ala  
 115 120 125

Gln Gly Asn Ser Met Phe Pro Ser Cys Cys Cys Thr Lys Pro Thr Asp  
 130 135 140

Gly Asn Cys Thr Cys Ile Pro Ile Pro Ser Ser Trp Ala Phe Ala Lys

145                      150                      155                      160

|            |             |             |            |            |             |  |     |
|------------|-------------|-------------|------------|------------|-------------|--|-----|
| <400>      | 3           |             |            |            |             |  |     |
| atggacatcg | atccatacaa  | ggaatttggga | gcttctgtgg | agctgctcag | cttcctgccca |  | 60  |
| tcggatTTTT | tcccttccat  | tcgagacctt  | ctcgacaccg | cctctgccct | gtatcgtgag  |  | 120 |
| gccctggagt | cgccggaaca  | ctgctcgcca  | caccatacgg | cactcaggca | ggccacctgg  |  | 180 |
| gtcggtagca | acttgggaaga | ccccgcctcg  | cgggagcttg | tagtcagtta | cgtcaatgtt  |  | 240 |
| aacatggggc | taaagatcag  | acaactcttg  | tggttccaca | tttcctgtct | tacgttcgga  |  | 300 |
| agagagaccg | ttcttgagta  | cctcgtttcc  | ttcggcgtgt | ggattcgcac | tccaccagca  |  | 360 |
| tatcgaccac | ctaacgcgcc  | aatcctgtct  | acacttcccg | aaaccactgt | tgtcagacgg  |  | 420 |
| agaggcagat | cgcctagacg  | gagaacaccc  | tcgcctcgcc | gtcgaagatc | ccagtcgccg  |  | 480 |

cgtcgcagac gttctcaatc tcgggagtct cagtgctaa

519

&lt;210&gt; 4

&lt;211&gt; 172

&lt;212&gt; PRT

&lt;213&gt; Artificial sequence

&lt;220&gt;

&lt;223&gt; the sequence is synthesized

&lt;400&gt; 4

Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Ser Val Glu Leu Leu  
1 5 10 15

Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Ile Arg Asp Leu Leu Asp  
20 25 30

Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys  
35 40 45

Ser Pro His His Thr Ala Leu Arg Gln Ala Thr Trp Val Gly Ser Asn  
50 55 60

Leu Glu Asp Pro Ala Ser Arg Glu Leu Val Val Ser Tyr Val Asn Val  
65 70 75 80

Asn Met Gly Leu Lys Ile Arg Gln Leu Leu Trp Phe His Ile Ser Cys  
85 90 95

Leu Thr Phe Gly Arg Glu Thr Val Leu Glu Tyr Leu Val Ser Phe Gly  
100 105 110

Val Trp Ile Arg Thr Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile  
115 120 125

Leu Ser Thr Leu Pro Glu Thr Thr Val Val Arg Arg Arg Gly Arg Ser  
130 135 140

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Pro Arg Arg Arg Thr Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro  
145 150 155 160

Arg Arg Arg Arg Ser Gln Ser Arg Glu Ser Gln Cys  
165 170

<210> 5  
<211> 797  
<212> DNA  
<213> Artificial sequence

<220>  
<223> the sequence is synthesized

<400> 5  
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aaactcagga attattggag cttcttgata aactgggccc ttacatctgc cttgtcaaaa 180  
ctcatattga catagtagag gacttctctt atgaacacac cattttacca ttacaggact 240  
tgcaaagaaa cacaacttca tgatTTTTga agacagaaag tttgctgata ttaggaaaca 300  
cagtcaaact acagtataag ggaggaattt atcgaacatc caagtgggcc gatatcacga 360  
atgcacacgg agtgactggc gcaggaattg ttgaaggctt taaacaggcc gcagaagaaa 420  
gtacagatga gccacgtggg cttttgatgc ttgctgagct ctcttcaaag ggatcattag 480  
ctaccggtga gtataactcaa aaaactgtgg aaatagcgaa aagcgataaa gaatttgtca 540  
ttggatttat tgcacagaga gacatgggag gtcgtgagga aggctttgac tggctgatca 600  
tgactccagg agttggttta gatgataaag gtgattctct gggccaacag tacagaactg 660  
ttgatgaagt gatgcaaaca ggaaccgatg tcattatcgt tggaagaggt ttattcggaa 720  
aaggaagaga tcctgaagtg gaagggaaga gatacagaaa tgctgggtgg gaagcttaca 780  
agcggcgcac tgcttaa 797