

SEQUENCE LISTING

<110> Agency for Science, Technology and Research
Nanyang Technological University

<120> NANOCAPSULES CARRYING CHIKUNGUNYA-ASSOCIATED PEPTIDES

<130> 9869SG3613

<160> 20

<170> PatentIn version 3.5

<210> 1

<211> 54

<212> DNA

<213> artificial

<220>

<223> E2EP3

<400> 1

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54

<210> 2

<211> 54

<212> DNA

<213> Artificial

<220>

<223> E2EP3 mutant

<400> 2

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54

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<211> 54

<212> DNA

<213> Artificial

<220>

<223> E2EP4

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54

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<211> 54
<212> DNA
<213> Artificial

<220>
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<400> 6
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<210> 7
<211> 18
<212> PRT
<213> artificial

<220>
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<400> 7

Ser Thr Lys Asp Asn Phe Asn Val Tyr Lys Ala Thr Arg Pro Tyr Leu
1 5 10 15

Ala His

<210> 8
<211> 18
<212> PRT
<213> artificial

<220>
<223> E2EP3 mutant

<400> 8

Ser Ile Lys Asp His Phe Asn Val Tyr Lys Ala Thr Arg Pro Tyr Leu
1 5 10 15

Ala His

<210> 9
<211> 18
<212> PRT
<213> Artificial

<220>
<223> E2EP4

<400> 9

Trp Gly Asn Asn Glu Pro Tyr Lys Tyr Trp Pro Gln Leu Ser Thr Asn
1 5 10 15

Gly Thr

<210> 10
<211> 18
<212> PRT
<213> artificial

<220>
<223> E2EP5

<400> 10

Leu Leu Ser Met Val Gly Met Ala Ala Gly Met Cys Met Cys Ala Arg

1 5 10 15

Arg Arg

<210> 11
<211> 19
<212> PRT
<213> artificial

<220>
<223> E2EP5 mutant

<400> 11

Leu Leu Ser Met Val Gly Val Ala Val Gly Met Cys Met Cys Ala Arg
1 5 10 15

Arg Arg Lys

<210> 12
<211> 10
<212> PRT
<213> artificial

<220>
<223> E2EP3 CV

<400> 12

Ser Thr Lys Asp Asn Phe Asn Val Tyr Lys
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<210> 13
<211> 525
<212> DNA
<213> artificial

<220>
<223> Mutated ferritin

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gagtgggatt cgcctttggc agcctttgag cacgtttacg agcatgaggt aaatgttacg	300
aagagaattc acgagcttgt tgagatggca atgcaggaaa aggactttgc aacctacaac	360
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gagaagctga ggttgattgg agaggacgcg gcggctttgc ttttccttga taaggagctt	480
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 <212> PRT
 <213> artificial

<220>
 <223> Mutated ferritin

<400> 14

Met	Ala	Ser	Ile	Ser	Glu	Lys	Met	Val	Glu	Ala	Leu	Asn	Arg	Gln	Ile
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Asn	Ala	Glu	Ile	Tyr	Ser	Ala	Tyr	Leu	Tyr	Leu	Ser	Met	Ala	Ser	Tyr
			20					25					30		

Phe	Asp	Ser	Ile	Gly	Leu	Lys	Gly	Phe	Ser	Asn	Trp	Met	Arg	Val	Gln
		35					40					45			

Trp	Gln	Glu	Glu	Leu	Met	His	Ala	Met	Lys	Met	Phe	Asp	Phe	Val	Ser
	50					55					60				

Glu	Arg	Gly	Gly	Arg	Val	Lys	Leu	Tyr	Ala	Val	Glu	Glu	Pro	Pro	Ser
65					70					75					80

Glu	Trp	Asp	Ser	Pro	Leu	Ala	Ala	Phe	Glu	His	Val	Tyr	Glu	His	Glu
				85					90					95	

Val Asn Val Thr Lys Arg Ile His Glu Leu Val Glu Met Ala Met Gln
100 105 110

Glu Lys Asp Phe Ala Thr Tyr Asn Phe Leu Gln Trp Tyr Val Ala Glu
115 120 125

Gln Val Glu Glu Glu Ala Ser Ala Leu Asp Ile Val Glu Lys Leu Arg
130 135 140

Leu Ile Gly Glu Asp Ala Ala Ala Leu Leu Phe Leu Asp Lys Glu Leu
145 150 155 160

Ser Leu Arg Gln Phe Thr Pro Pro Ala Glu Glu Glu Lys
165 170

<210> 15
<211> 525
<212> DNA
<213> artificial

<220>
<223> Wild type ferritin

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ttctcaaact ggatgagggt gcagtggcag gaggagctga tgcatgcgat gaagatgttt 180
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aagagaattc acgagcttgt tgagatggca atgcaggaaa aggactttgc aacctacaac 360
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<210> 16

<211> 173
<212> PRT
<213> artificial

<220>
<223> Wild type ferritin

<400> 16

Met Ala Ser Ile Ser Glu Lys Met Val Glu Ala Leu Asn Arg Gln Ile
1 5 10 15

Asn Ala Glu Ile Tyr Ser Ala Tyr Leu Tyr Leu Ser Met Ala Ser Tyr
20 25 30

Phe Asp Ser Ile Gly Leu Lys Gly Phe Ser Asn Trp Met Arg Val Gln
35 40 45

Trp Gln Glu Glu Leu Met His Ala Met Lys Met Phe Asp Phe Val Ser
50 55 60

Glu Arg Gly Gly Arg Val Lys Leu Tyr Ala Val Glu Glu Pro Pro Ser
65 70 75 80

Glu Trp Asp Ser Pro Leu Ala Ala Phe Glu His Val Tyr Glu His Glu
85 90 95

Val Asn Val Thr Lys Arg Ile His Glu Leu Val Glu Met Ala Met Gln
100 105 110

Glu Lys Asp Phe Ala Thr Tyr Asn Phe Leu Gln Trp Tyr Val Ala Glu
115 120 125

Gln Val Glu Glu Glu Ala Ser Ala Leu Asp Ile Val Glu Lys Leu Arg
130 135 140

Leu Ile Gly Glu Asp Lys Arg Ala Leu Leu Phe Leu Asp Lys Glu Leu
145 150 155 160

Ser Leu Arg Gln Phe Thr Pro Pro Ala Glu Glu Glu Lys

<210> 17
 <211> 31
 <212> DNA
 <213> artificial

<220>
 <223> Mutagenesis primer (forward)

<400> 17
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<210> 18
 <211> 31
 <212> DNA
 <213> artificial

<220>
 <223> Mutagenesis primer (reverse)

<400> 18
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<210> 19
 <211> 193
 <212> PRT
 <213> artificial

<220>
 <223> CVAf

<400> 19

Ser Thr Lys Asp Asn Phe Asn Val Tyr Lys Ala Thr Arg Pro Tyr Leu
 1 5 10 15

Ala His Ser Gly Gly Ala Ser Ile Ser Glu Lys Met Val Glu Ala Leu
 20 25 30

Asn Arg Gln Ile Asn Ala Glu Ile Tyr Ser Ala Tyr Leu Tyr Leu Ser
 35 40 45

Met Ala Ser Tyr Phe Asp Ser Ile Gly Leu Lys Gly Phe Ser Asn Trp

50

55

60

Met Arg Val Gln Trp Gln Glu Glu Leu Met His Ala Met Lys Met Phe
 65 70 75 80

Asp Phe Val Ser Glu Arg Gly Gly Arg Val Lys Leu Tyr Ala Val Glu
 85 90 95

Glu Pro Pro Ser Glu Trp Asp Ser Pro Leu Ala Ala Phe Glu His Val
 100 105 110

Tyr Glu His Glu Val Asn Val Thr Lys Arg Ile His Glu Leu Val Glu
 115 120 125

Met Ala Met Gln Glu Lys Asp Phe Ala Thr Tyr Asn Phe Leu Gln Trp
 130 135 140

Tyr Val Ala Glu Gln Val Glu Glu Glu Ala Ser Ala Leu Asp Ile Val
 145 150 155 160

Glu Lys Leu Arg Leu Ile Gly Glu Asp Lys Arg Ala Leu Leu Phe Leu
 165 170 175

Asp Lys Glu Leu Ser Leu Arg Gln Phe Thr Pro Pro Ala Glu Glu Glu
 180 185 190

Lys

<210> 20
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 <212> PRT
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<400> 20

Ser Thr Lys Asp Asn Phe Asn Val Tyr Lys Ser Gly Gly Ala Ser Ile

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			20					25					30		
Tyr	Ser	Ala	Tyr	Leu	Tyr	Leu	Ser	Met	Ala	Ser	Tyr	Phe	Asp	Ser	Ile
		35					40					45			
Gly	Leu	Lys	Gly	Phe	Ser	Asn	Trp	Met	Arg	Val	Gln	Trp	Gln	Glu	Glu
	50					55					60				
Leu	Met	His	Ala	Met	Lys	Met	Phe	Asp	Phe	Val	Ser	Glu	Arg	Gly	Gly
65					70					75					80
Arg	Val	Lys	Leu	Tyr	Ala	Val	Glu	Glu	Pro	Pro	Ser	Glu	Trp	Asp	Ser
				85					90					95	
Pro	Leu	Ala	Ala	Phe	Glu	His	Val	Tyr	Glu	His	Glu	Val	Asn	Val	Thr
			100					105					110		
Lys	Arg	Ile	His	Glu	Leu	Val	Glu	Met	Ala	Met	Gln	Glu	Lys	Asp	Phe
		115					120					125			
Ala	Thr	Tyr	Asn	Phe	Leu	Gln	Trp	Tyr	Val	Ala	Glu	Gln	Val	Glu	Glu
	130					135					140				
Glu	Ala	Ser	Ala	Leu	Asp	Ile	Val	Glu	Lys	Leu	Arg	Leu	Ile	Gly	Glu
145					150					155					160
Asp	Lys	Arg	Ala	Leu	Leu	Phe	Leu	Asp	Lys	Glu	Leu	Ser	Leu	Arg	Gln
				165					170					175	
Phe	Thr	Pro	Pro	Ala	Glu	Glu	Glu	Lys							
			180					185							