

SEQUENCE LISTING

<110> XL-protein GmbH
Jazz Pharmaceuticals Ireland Limited

<120> Modified L-Asparaginase

<130> AA2000 PCT S3

<150> EP 17 17 7237.9

<151> 2017-06-21

<150> US 62/523,061

<151> 2017-06-21

<150> US 15/671,086

<151> 2017-08-07

<160> 17

<170> BiSSAP 1.3

<210> 1

<211> 327

<212> PRT

<213> Dickeya chrysanthemi

<220>

<223> L-Asparaginase

<400> 1

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Met	Thr	Gly	Asp	Val	Val	Leu	Lys	Leu	Ser	Gln	Arg	Val	Asn	Glu	Leu
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Leu	Ala	Arg	Asp	Asp	Val	Asp	Gly	Val	Val	Ile	Thr	His	Gly	Thr	Asp
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Thr	Val	Glu	Glu	Ser	Ala	Tyr	Phe	Leu	His	Leu	Thr	Val	Lys	Ser	Asp
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Lys	Pro	Val	Val	Phe	Val	Ala	Ala	Met	Arg	Pro	Ala	Thr	Ala	Ile	Ser
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Lys	Gln	Ser	Arg	Gly	Arg	Gly	Val	Met	Val	Val	Leu	Asn	Asp	Arg	Ile
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Gly	Ser	Ala	Arg	Tyr	Ile	Thr	Lys	Thr	Asn	Ala	Ser	Thr	Leu	Asp	Thr
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Phe	Lys	Ala	Asn	Glu	Glu	Gly	Tyr	Leu	Gly	Val	Ile	Ile	Gly	Asn	Arg

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<220>
<223> L-Asparaginase with signal peptide

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35 40 45
Leu Ala Thr Gly Gly Thr Ile Ala Gly Ser Ala Ala Thr Gly Thr Gln
50 55 60
Thr Thr Gly Tyr Lys Ala Gly Ala Leu Gly Val Asp Thr Leu Ile Asn
65 70 75 80
Ala Val Pro Glu Val Lys Lys Leu Ala Asn Val Lys Gly Glu Gln Phe
85 90 95
Ser Asn Met Ala Ser Glu Asn Met Thr Gly Asp Val Val Leu Lys Leu
100 105 110
Ser Gln Arg Val Asn Glu Leu Leu Ala Arg Asp Asp Val Asp Gly Val
115 120 125
Val Ile Thr His Gly Thr Asp Thr Val Glu Glu Ser Ala Tyr Phe Leu
130 135 140
His Leu Thr Val Lys Ser Asp Lys Pro Val Val Phe Val Ala Ala Met
145 150 155 160
Arg Pro Ala Thr Ala Ile Ser Ala Asp Gly Pro Met Asn Leu Leu Glu
165 170 175
Ala Val Arg Val Ala Gly Asp Lys Gln Ser Arg Gly Arg Gly Val Met
180 185 190
Val Val Leu Asn Asp Arg Ile Gly Ser Ala Arg Tyr Ile Thr Lys Thr
195 200 205
Asn Ala Ser Thr Leu Asp Thr Phe Lys Ala Asn Glu Glu Gly Tyr Leu
210 215 220
Gly Val Ile Ile Gly Asn Arg Ile Tyr Tyr Gln Asn Arg Ile Asp Lys
225 230 235 240
Leu His Thr Thr Arg Ser Val Phe Asp Val Arg Gly Leu Thr Ser Leu
245 250 255
Pro Lys Val Asp Ile Leu Tyr Gly Tyr Gln Asp Asp Pro Glu Tyr Leu
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Tyr Asp Ala Ala Ile Gln His Gly Val Lys Gly Ile Val Tyr Ala Gly

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Ala	Met	Glu	Lys	Gly	Val	Val	Val	Ile	Arg	Ser	Thr	Arg	Thr	Gly	Asn
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Gly	Ile	Val	Pro	Pro	Asp	Glu	Glu	Leu	Pro	Gly	Leu	Val	Ser	Asp	Ser
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<212> DNA

<213> Dickeya chrysanthemi

<220>

<223> L-Asparaginase

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cgtggtcgtg gtgttatggt tgtgctgaat gatcgtattg gtagcgcacg ttatattacc	660
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gtttttgatg ttcgtggtct gaccagcctg ccgaaagtgg atattctgta tggttatcag	840
gatgatccgg aatatctgta tgatgcagca attcagcatg gtgtgaaagg tattgtttat	900
gcaggatatg gtgcgggtag cgttagcgtt cgtgggtatt ccggtatgcg taaagcaatg	960
gaaaaagggt ttgttgtgat tcgtagcacc cgtaccggta atggtattgt tccgcctgat	1020

gaagaactgc ctggtctggt tagcgatagc ctgaatccgg cacatgcacg tattctgctg 1080
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<210> 5
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> PA(20) peptide

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 <212> DNA
 <213> Artificial Sequence

<220>
 <223> PA(20) peptide

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<210> 7
 <211> 201
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> PA(200)-polypeptide

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 35 40 45
 Ala Ala Pro Ala Ala Pro Ala Pro Ala Ala Pro Ala Ala Ala Pro Ala
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 65 70 75 80
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<212> DNA

<213> Artificial Sequence

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<223> PA(200)-polypeptide

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<210> 9

<211> 401

<212> PRT

<213> Artificial Sequence

<220>

<223> PA(400)-polypeptide

<400> 9

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85      90      95
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115     120     125
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165     170     175
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195     200     205
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<212> DNA
<213> Artificial Sequence

<220>
<223> PA(400)-polypeptide

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 <211> 528
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Asparaginase-PA(200)-fusion protein

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 Thr Gln Thr Thr Gly Tyr Lys Ala Gly Ala Leu Gly Val Asp Thr Leu
 225 230 235 240
 Ile Asn Ala Val Pro Glu Val Lys Lys Leu Ala Asn Val Lys Gly Glu
 245 250 255
 Gln Phe Ser Asn Met Ala Ser Glu Asn Met Thr Gly Asp Val Val Leu
 260 265 270
 Lys Leu Ser Gln Arg Val Asn Glu Leu Leu Ala Arg Asp Asp Val Asp
 275 280 285
 Gly Val Val Ile Thr His Gly Thr Asp Thr Val Glu Glu Ser Ala Tyr
 290 295 300
 Phe Leu His Leu Thr Val Lys Ser Asp Lys Pro Val Val Phe Val Ala
 305 310 315 320
 Ala Met Arg Pro Ala Thr Ala Ile Ser Ala Asp Gly Pro Met Asn Leu
 325 330 335
 Leu Glu Ala Val Arg Val Ala Gly Asp Lys Gln Ser Arg Gly Arg Gly
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 Val Met Val Val Leu Asn Asp Arg Ile Gly Ser Ala Arg Tyr Ile Thr

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<211> 728

<212> PRT

<213> Artificial Sequence

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<223> Asparaginase-PA-(400)-fusion protein

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	690				695			700									
Arg	Ile	Leu	Leu	Met	Leu	Ala	Leu	Thr	Arg	Thr	Ser	Asp	Pro	Lys	Val		
705				710				715						720			
Ile	Gln	Glu	Tyr	Phe	His	Thr	Tyr										
				725													

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<211> 2317

<212> DNA

<213> Artificial Sequence

<220>

<223> Asparaginase-PA(400)-fusion protein

<400> 14

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 <213> Artificial Sequence

<220>
 <223> PA(40) peptide

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 35 40

<210> 16
 <211> 22
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> modified PA(20) peptide

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<220>
 <221> VARIANT
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 <223> Xaa = Ahx (6-aminohexanoic acid)

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 <211> 42

<212> PRT
<213> Artificial Sequence

<220>
<223> modified PA(40)-peptide

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<220>
<221> VARIANT
<222> 42
<223> Xaa = Ahx (6-aminohexanoic acid)

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Pro Ala Ala Pro Ala Ala Ala Pro Ala Ala Pro Ala Pro Ala Ala Pro
 20 25 30
Ala Ala Pro Ala Pro Ala Ala Pro Ala Xaa
 35 40