

SEQUENCE LISTING

<110> Savient Pharmaceuticals, Inc.
Hartman, Jacob
Mendelovitz, Simona

<120> A VARIANT FORM OF URATE OXIDASE AND USE THEREOF

<130> 103864-156066

<150> US 60/670,541

<151> 2005-04-11

<160> 16

<170> PatentIn version 3.3

<210> 1

<211> 36

<212> DNA

<213> Artificial Sequence

<220>

<223> Pig Liver Uricase (sense)

<400> 1

gcgcgaattc catggctcat taccgtaatg actaca

36

<210> 2

<211> 40

<212> DNA

<213> Artificial Sequence

<220>

<223> Pig Liver Uricase (antisense)

<400> 2

gcgctctaga agcttccatg gtcacagcct tgaagtcagc

40

<210> 3

<211> 35

<212> DNA

<213> Artificial Sequence

<220>

<223> Baboon (D3H) Liver Uricase (sense)

<400> 3

gcgcgaattc catggccac taccataaca actat

35

<210> 4

<211> 40

<212> DNA

<213> Artificial Sequence

<220>

<223> Baboon (D3H) Liver Uricase (antisense)

<400> 4
gcgcccattgg tctagatcac agtcttgaag acaacttcct 40

<210> 5
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> PBC-DeltaNC Uricase (sense)

<400> 5
gcgcatatga cttacaaaaa gaatgatgag gtagag 36

<210> 6
<211> 54
<212> DNA
<213> Artificial Sequence

<220>
<223> PBC-DeltaNC Uricase (antisense)

<400> 6
ccgtctagat taagacaact tcctcttgac tgtaccagta atttttccgt atgg 54

<210> 7
<211> 299
<212> PRT
<213> Artificial Sequence

<220>
<223> Pig-KS-DeltaN

<400> 7

Met Thr Tyr Lys Lys Asn Asp Glu Val Glu Phe Val Arg Thr Gly Tyr
1 5 10 15

Gly Lys Asp Met Ile Lys Val Leu His Ile Gln Arg Asp Gly Lys Tyr
20 25 30

His Ser Ile Lys Glu Val Ala Thr Thr Val Gln Leu Thr Leu Ser Ser
35 40 45

Lys Lys Asp Tyr Leu His Gly Asp Asn Ser Asp Val Ile Pro Thr Asp
50 55 60

Thr Ile Lys Asn Thr Val Asn Val Leu Ala Lys Phe Lys Gly Ile Lys
65 70 75 80

Ser Ile Glu Thr Phe Ala Val Thr Ile Cys Glu His Phe Leu Ser Ser
85 90 95

Phe Lys His Val Ile Arg Ala Gln Val Tyr Val Glu Glu Val Pro Trp
100 105 110

Lys Arg Phe Glu Lys Asn Gly Val Lys His Val His Ala Phe Ile Tyr
115 120 125

Thr Pro Thr Gly Thr His Phe Cys Glu Val Glu Gln Ile Arg Asn Gly
130 135 140

Pro Pro Val Ile His Ser Gly Ile Lys Asp Leu Lys Val Leu Lys Thr
145 150 155 160

Thr Gln Ser Gly Phe Glu Gly Phe Ile Lys Asp Gln Phe Thr Thr Leu
165 170 175

Pro Glu Val Lys Asp Arg Cys Phe Ala Thr Gln Val Tyr Cys Lys Trp
180 185 190

Arg Tyr His Gln Gly Arg Asp Val Asp Phe Glu Ala Thr Trp Asp Thr
195 200 205

Val Arg Ser Ile Val Leu Gln Lys Phe Ala Gly Pro Tyr Asp Lys Gly
210 215 220

Glu Tyr Ser Pro Ser Val Gln Lys Thr Leu Tyr Asp Ile Gln Val Leu
225 230 235 240

Thr Leu Gly Gln Val Pro Glu Ile Glu Asp Met Glu Ile Ser Leu Pro
245 250 255

Asn Ile His Tyr Leu Asn Ile Asp Met Ser Lys Met Gly Leu Ile Asn
260 265 270

Lys Glu Glu Val Leu Leu Pro Leu Asp Asn Pro Tyr Gly Lys Ile Thr
275 280 285

Gly Thr Val Lys Arg Lys Leu Ser Ser Arg Leu
290 295

<210> 8

<211> 298

<212> PRT

<213> Artificial Sequence

<220>

<223> Pig-KS-DeltaN without starting Met

<400> 8

Thr Tyr Lys Lys Asn Asp Glu Val Glu Phe Val Arg Thr Gly Tyr Gly
1 5 10 15

Lys Asp Met Ile Lys Val Leu His Ile Gln Arg Asp Gly Lys Tyr His
20 25 30

Ser Ile Lys Glu Val Ala Thr Thr Val Gln Leu Thr Leu Ser Ser Lys
35 40 45

Lys Asp Tyr Leu His Gly Asp Asn Ser Asp Val Ile Pro Thr Asp Thr
50 55 60

Ile Lys Asn Thr Val Asn Val Leu Ala Lys Phe Lys Gly Ile Lys Ser
65 70 75 80

Ile Glu Thr Phe Ala Val Thr Ile Cys Glu His Phe Leu Ser Ser Phe
85 90 95

Lys His Val Ile Arg Ala Gln Val Tyr Val Glu Glu Val Pro Trp Lys
100 105 110

Arg Phe Glu Lys Asn Gly Val Lys His Val His Ala Phe Ile Tyr Thr
115 120 125

Pro Thr Gly Thr His Phe Cys Glu Val Glu Gln Ile Arg Asn Gly Pro
130 135 140

Pro Val Ile His Ser Gly Ile Lys Asp Leu Lys Val Leu Lys Thr Thr
145 150 155 160

Gln Ser Gly Phe Glu Gly Phe Ile Lys Asp Gln Phe Thr Thr Leu Pro
165 170 175

Glu Val Lys Asp Arg Cys Phe Ala Thr Gln Val Tyr Cys Lys Trp Arg
180 185 190

Tyr His Gln Gly Arg Asp Val Asp Phe Glu Ala Thr Trp Asp Thr Val
195 200 205

Arg Ser Ile Val Leu Gln Lys Phe Ala Gly Pro Tyr Asp Lys Gly Glu
210 215 220

Tyr Ser Pro Ser Val Gln Lys Thr Leu Tyr Asp Ile Gln Val Leu Thr
225 230 235 240

Leu Gly Gln Val Pro Glu Ile Glu Asp Met Glu Ile Ser Leu Pro Asn
245 250 255

Ile His Tyr Leu Asn Ile Asp Met Ser Lys Met Gly Leu Ile Asn Lys
260 265 270

Glu Glu Val Leu Leu Pro Leu Asp Asn Pro Tyr Gly Lys Ile Thr Gly
275 280 285

Thr Val Lys Arg Lys Leu Ser Ser Arg Leu
290 295

<210> 9
<211> 897
<212> DNA
<213> Artificial Sequence

<220>
<223> Pig-KS-DeltaNA

<400> 9
atgacttaca aaaagaatga tgaggtagag tttgtccgaa ctggctatgg gaaggatatg 60
ataaaagttc tccatattca gcgagatgga aaatatcaca gcattaaaga ggtggcaact 120
acagtgaac tgactttgag ctccaaaaaa gattacctgc atggagacaa ttcagatgtc 180
atccctacag acaccatcaa gaacacagtt aatgtcctgg cgaagttcaa aggcacaaa 240
agcatagaaa cttttgctgt gactatctgt gagcatttcc tttcttctt caagcatgtc 300
atcagagctc aagtctatgt ggaagaagtt ccttggagc gttttgaaa gaatggagtt 360
aagcatgtcc atgcatttat ttatactcct actggaacgc acttctgtga ggttgaacag 420
ataaggaatg gacctccagt cattcattct ggaatcaaag acctaaaagt cttgaaaaca 480
accagtctg gctttgaagg attcatcaag gaccagttca ccacctccc tgaggtgaag 540
gaccggtgct ttgccacca agtgactgc aaatggcgct accaccaggg cagagatgtg 600
gactttgagg ccacctggga cactgttagg agcattgtcc tgcagaaatt tgctgggccc 660
tatgacaaag gcgagtactc gccctctgtc cagaagacac tctatgacat ccaggtgctc 720
accctgggccc aggttctctga gatagaagat atggaaatca gcctgccaaa tattcactac 780
ttaaacatag acatgtccaa aatgggactg atcaacaagg aagaggtctt gctaccttta 840
gacaatccat atggaaaaat tactggtaca gtcaagagga agttgtcttc aagactg 897

<210> 10
<211> 894
<212> DNA
<213> Artificial Sequence

<220>

<223> Pig-KS-DeltaN without starting ATG

<400> 10

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aaagttctcc atattcagcg agatggaaaa tatcacagca ttaaagaggt ggcaactaca      120
gtgcaactga ctttgagctc caaaaaagat tacctgcatg gagacaattc agatgtcatc      180
cctacagaca ccatcaagaa cacagttaat gtcttggcga agttcaaagg catcaaaagc      240
atagaaactt ttgctgtgac tatctgtgag catttccttt cttccttcaa gcatgtcatc      300
agagctcaag tctatgtgga agaagttcct tggaagcggt ttgaaaagaa tggagtttaag      360
catgtccatg catttattta tactcctact ggaacgcact tctgtgaggt tgaacagata      420
aggaatggac ctccagtcac tcattctgga atcaaagacc taaaagtctt gaaaacaacc      480
cagtctggct ttgaaggatt catcaaggac cagttcacca cctccctga ggtgaaggac      540
cgggtgctttg ccaccaagt gtactgcaaa tggcgctacc accagggcag agatgtggac      600
tttgaggcca cctgggacac tgtaggagc attgtcctgc agaaatttgc tgggccctat      660
gacaaaggcg agtactcgcc ctctgtccag aagacactct atgacatcca ggtgctcacc      720
ctggggccagg ttcttgagat agaagatatg gaaatcagcc tgccaaatat tcactactta      780
aacatagaca tgtccaaaat gggactgac aacaaggaag aggtcttgct acctttagac      840
aatccatatg gaaaaattac tggtagagtc aagaggaagt tgtcttcaag actg          894
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<210> 11

<211> 304

<212> PRT

<213> Sus scrofa

<400> 11

```
Met Ala His Tyr Arg Asn Asp Tyr Lys Lys Asn Asp Glu Val Glu Phe
1              5              10              15
```

```
Val Arg Thr Gly Tyr Gly Lys Asp Met Ile Lys Val Leu His Ile Gln
20              25              30
```

```
Arg Asp Gly Lys Tyr His Ser Ile Lys Glu Val Ala Thr Ser Val Gln
35              40              45
```

```
Leu Thr Leu Ser Ser Lys Lys Asp Tyr Leu His Gly Asp Asn Ser Asp
50              55              60
```

```
Val Ile Pro Thr Asp Thr Ile Lys Asn Thr Val Asn Val Leu Ala Lys
65              70              75              80
```

Phe Lys Gly Ile Lys Ser Ile Glu Thr Phe Ala Val Thr Ile Cys Glu
85 90 95

His Phe Leu Ser Ser Phe Lys His Val Ile Arg Ala Gln Val Tyr Val
100 105 110

Glu Glu Val Pro Trp Lys Arg Phe Glu Lys Asn Gly Val Lys His Val
115 120 125

His Ala Phe Ile Tyr Thr Pro Thr Gly Thr His Phe Cys Glu Val Glu
130 135 140

Gln Ile Arg Asn Gly Pro Pro Val Ile His Ser Gly Ile Lys Asp Leu
145 150 155 160

Lys Val Leu Lys Thr Thr Gln Ser Gly Phe Glu Gly Phe Ile Lys Asp
165 170 175

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

Val Tyr Cys Lys Trp Arg Tyr His Gln Gly Arg Asp Val Asp Phe Glu
195 200 205

Ala Thr Trp Asp Thr Val Arg Ser Ile Val Leu Gln Lys Phe Ala Gly
210 215 220

Pro Tyr Asp Lys Gly Glu Tyr Ser Pro Ser Val Gln Lys Thr Leu Tyr
225 230 235 240

Asp Ile Gln Val Leu Thr Leu Gly Gln Val Pro Glu Ile Glu Asp Met
245 250 255

Glu Ile Ser Leu Pro Asn Ile His Tyr Leu Asn Ile Asp Met Ser Lys
260 265 270

Met Gly Leu Ile Asn Lys Glu Glu Val Leu Leu Pro Leu Asp Asn Pro
275 280 285

Tyr Gly Arg Ile Thr Gly Thr Val Lys Arg Lys Leu Thr Ser Arg Leu
290 295 300

<210> 12
<211> 296
<212> PRT

<213> Artificial Sequence

<220>

<223> PBC-DeltaNC

<400> 12

Met Thr Tyr Lys Lys Asn Asp Glu Val Glu Phe Val Arg Thr Gly Tyr
1 5 10 15

Gly Lys Asp Met Ile Lys Val Leu His Ile Gln Arg Asp Gly Lys Tyr
20 25 30

His Ser Ile Lys Glu Val Ala Thr Thr Val Gln Leu Thr Leu Ser Ser
35 40 45

Lys Lys Asp Tyr Leu His Gly Asp Asn Ser Asp Val Ile Pro Thr Asp
50 55 60

Thr Ile Lys Asn Thr Val Asn Val Leu Ala Lys Phe Lys Gly Ile Lys
65 70 75 80

Ser Ile Glu Thr Phe Ala Val Thr Ile Cys Glu His Phe Leu Ser Ser
85 90 95

Phe Lys His Val Ile Arg Ala Gln Val Tyr Val Glu Glu Val Pro Trp
100 105 110

Lys Arg Phe Glu Lys Asn Gly Val Lys His Val His Ala Phe Ile Tyr
115 120 125

Thr Pro Thr Gly Thr His Phe Cys Glu Val Glu Gln Ile Arg Asn Gly
130 135 140

Pro Pro Val Ile His Ser Gly Ile Lys Asp Leu Lys Val Leu Lys Thr
145 150 155 160

Thr Gln Ser Gly Phe Glu Gly Phe Ile Lys Asp Gln Phe Thr Thr Leu
165 170 175

Pro Glu Val Lys Asp Arg Cys Phe Ala Thr Gln Val Tyr Cys Lys Trp
180 185 190

Arg Tyr His Gln Gly Arg Asp Val Asp Phe Glu Ala Thr Trp Asp Thr
195 200 205

Val Arg Ser Ile Val Leu Gln Lys Phe Ala Gly Pro Tyr Asp Lys Gly
210 215 220

Glu Tyr Ser Pro Ser Val Gln Lys Thr Leu Tyr Asp Ile Gln Val Leu
225 230 235 240

Ser Leu Ser Arg Val Pro Glu Ile Glu Asp Met Glu Ile Ser Leu Pro
245 250 255

Asn Ile His Tyr Phe Asn Ile Asp Met Ser Lys Met Gly Leu Ile Asn
260 265 270

Lys Glu Glu Val Leu Leu Pro Leu Asp Asn Pro Tyr Gly Lys Ile Thr
275 280 285

Gly Thr Val Lys Arg Lys Leu Ser
290 295

<210> 13
<211> 295
<212> PRT
<213> Artificial Sequence

<220>
<223> PBC-DeltaNC without starting Met

<400> 13

Thr Tyr Lys Lys Asn Asp Glu Val Glu Phe Val Arg Thr Gly Tyr Gly
1 5 10 15

Lys Asp Met Ile Lys Val Leu His Ile Gln Arg Asp Gly Lys Tyr His
20 25 30

Ser Ile Lys Glu Val Ala Thr Thr Val Gln Leu Thr Leu Ser Ser Lys
35 40 45

Lys Asp Tyr Leu His Gly Asp Asn Ser Asp Val Ile Pro Thr Asp Thr
50 55 60

Ile Lys Asn Thr Val Asn Val Leu Ala Lys Phe Lys Gly Ile Lys Ser
65 70 75 80

Ile Glu Thr Phe Ala Val Thr Ile Cys Glu His Phe Leu Ser Ser Phe
85 90 95

Lys His Val Ile Arg Ala Gln Val Tyr Val Glu Glu Val Pro Trp Lys
100 105 110

Arg Phe Glu Lys Asn Gly Val Lys His Val His Ala Phe Ile Tyr Thr

115

120

125

Pro Thr Gly Thr His Phe Cys Glu Val Glu Gln Ile Arg Asn Gly Pro
 130 135 140

Pro Val Ile His Ser Gly Ile Lys Asp Leu Lys Val Leu Lys Thr Thr
 145 150 155 160

Gln Ser Gly Phe Glu Gly Phe Ile Lys Asp Gln Phe Thr Thr Leu Pro
 165 170 175

Glu Val Lys Asp Arg Cys Phe Ala Thr Gln Val Tyr Cys Lys Trp Arg
 180 185 190

Tyr His Gln Gly Arg Asp Val Asp Phe Glu Ala Thr Trp Asp Thr Val
 195 200 205

Arg Ser Ile Val Leu Gln Lys Phe Ala Gly Pro Tyr Asp Lys Gly Glu
 210 215 220

Tyr Ser Pro Ser Val Gln Lys Thr Leu Tyr Asp Ile Gln Val Leu Ser
 225 230 235 240

Leu Ser Arg Val Pro Glu Ile Glu Asp Met Glu Ile Ser Leu Pro Asn
 245 250 255

Ile His Tyr Phe Asn Ile Asp Met Ser Lys Met Gly Leu Ile Asn Lys
 260 265 270

Glu Glu Val Leu Leu Pro Leu Asp Asn Pro Tyr Gly Lys Ile Thr Gly
 275 280 285

Thr Val Lys Arg Lys Leu Ser
 290 295

<210> 14

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<223> PBC-DeltaNC (Fragment 44-56 of PBC-DeltaNC)

<400> 14

Ala Thr Thr Val Gln Leu Thr Leu Ser Ser Lys Lys Asp
 1 5 10

<210> 15
 <211> 936
 <212> DNA
 <213> Papio hamadryas (hamadryas baboon)

<400> 15
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 ccgaactggc tatgggaagg atatggtaaa agttctccat attcagcgag atggaaaata 120
 tcacagcatt aaagaggtgg caacttcagt gcaacttact ctgagttcca aaaaagatta 180
 cctgcatgga gataattcag atatcatccc tacagacacc atcaagaaca cagttcatgt 240
 cttggcaaaag ttttaagggaa tcaaaagcat agaagccttt ggtgtgaata tttgtgagta 300
 ttttctttct tcttttaacc atgtaatccg agctcaagtc tacgtggaag aaatcccttg 360
 gaagcgtctt gaaaagaatg gagttaagca tgtccatgca ttatttcaca ctccactgg 420
 aacacacttc tgtgaagttg aacaactgag aagtggaccc cccgtcatta cttctggaat 480
 caaagacctc aagggtcttg aaacaacaca gtctggattt gaagggttca tcaaggacca 540
 gttcaccacc ctccctgagg tgaaggaccg atgctttgcc acccaagtgt actgcaagtg 600
 gcgctaccac cagtgcaggg atgtggactt cgaggctacc tggggcacca ttcgggacct 660
 tgtcttgagg aaatttgctg ggcctatga caaaggcgag tactcacctt ctgtgcagaa 720
 gacctctat gatatccagg tgctctcctt gagccgagtt cctgagatag aagatatgga 780
 aatcagcctg ccaaacattc actacttcaa tatagacatg tccaaaatgg gtctgatcaa 840
 caaggaagag gtcttgctgc cattagacaa tccatatgga aaaattactg gtacagtcaa 900
 gaggaagttg tcttcaagac tgtgacattg tggcca 936

<210> 16
 <211> 304
 <212> PRT
 <213> Papio hamadryas (hamadryas baboon)

<400> 16

Met Ala Asp Tyr His Asn Asn Tyr Lys Lys Asn Asp Glu Leu Glu Phe
 1 5 10 15

Val Arg Thr Gly Tyr Gly Lys Asp Met Val Lys Val Leu His Ile Gln
 20 25 30

Arg Asp Gly Lys Tyr His Ser Ile Lys Glu Val Ala Thr Ser Val Gln
 35 40 45

Leu Thr Leu Ser Ser Lys Lys Asp Tyr Leu His Gly Asp Asn Ser Asp
 50 55 60

Ile Ile Pro Thr Asp Thr Ile Lys Asn Thr Val His Val Leu Ala Lys
65 70 75 80

Phe Lys Gly Ile Lys Ser Ile Glu Ala Phe Gly Val Asn Ile Cys Glu
85 90 95

Tyr Phe Leu Ser Ser Phe Asn His Val Ile Arg Ala Gln Val Tyr Val
100 105 110

Glu Glu Ile Pro Trp Lys Arg Leu Glu Lys Asn Gly Val Lys His Val
115 120 125

His Ala Phe Ile His Thr Pro Thr Gly Thr His Phe Cys Glu Val Glu
130 135 140

Gln Leu Arg Ser Gly Pro Pro Val Ile Thr Ser Gly Ile Lys Asp Leu
145 150 155 160

Lys Val Leu Lys Thr Thr Gln Ser Gly Phe Glu Gly Phe Ile Lys Asp
165 170 175

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

Val Tyr Cys Lys Trp Arg Tyr His Gln Cys Arg Asp Val Asp Phe Glu
195 200 205

Ala Thr Trp Gly Thr Ile Arg Asp Leu Val Leu Glu Lys Phe Ala Gly
210 215 220

Pro Tyr Asp Lys Gly Glu Tyr Ser Pro Ser Val Gln Lys Thr Leu Tyr
225 230 235 240

Asp Ile Gln Val Leu Ser Leu Ser Arg Val Pro Glu Ile Glu Asp Met
245 250 255

Glu Ile Ser Leu Pro Asn Ile His Tyr Phe Asn Ile Asp Met Ser Lys
260 265 270

Met Gly Leu Ile Asn Lys Glu Glu Val Leu Leu Pro Leu Asp Asn Pro
275 280 285

Tyr Gly Lys Ile Thr Gly Thr Val Lys Arg Lys Leu Ser Ser Arg Leu
290 295 300