

<110> CJ CheilJedang Corporation  
 <120> MICROORGANISM PRODUCING PURINE NUCLEOTIDES AND METHOD FOR PRODUCING  
 PURINE NUCLEOTIDES USING THE SAME  
 <130> OPA22030  
 <150> KR 10-2021-0065740  
 <151> 2021-05-21  
 <160> 13  
 <170> KoPatentIn 3.0  
 <210> 1  
 <211> 499  
 <212> PRT  
 <213> Artificial Sequence  
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 <223> PitA  
  
 <400> 1  
 Met Leu His Leu Phe Ala Gly Leu Asp Leu His Thr Gly Leu Leu Leu  
 1 5 10 15  
 Leu Leu Ala Leu Ala Phe Val Leu Phe Tyr Glu Ala Ile Asn Gly Phe  
 20 25 30  
 His Asp Thr Ala Asn Ala Val Ala Thr Val Ile Tyr Thr Arg Ala Met  
 35 40 45  
 Arg Ser Gln Leu Ala Val Val Met Ala Ala Val Phe Asn Phe Leu Gly  
 50 55 60  
 Val Leu Leu Gly Gly Leu Ser Val Ala Tyr Ala Ile Val His Met Leu  
 65 70 75 80  
 Pro Thr Asp Leu Leu Leu Asn Met Gly Ser Ser His Gly Leu Ala Met  
 85 90 95  
 Val Phe Ser Met Leu Leu Ala Ala Ile Ile Trp Asn Leu Gly Thr Trp  
 100 105 110  
 Tyr Phe Gly Leu Pro Ala Ser Ser Ser His Thr Leu Ile Gly Ala Ile  
 115 120 125  
 Ile Gly Ile Gly Leu Thr Asn Ala Leu Met Thr Gly Thr Ser Val Val  
 130 135 140

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Ala | Leu | Asn | Ile | Pro | Lys | Val | Leu | Ser | Ile | Phe | Gly | Ser | Leu | Ile | 145 | 150 | 155 | 160 |
| Val | Ser | Pro | Ile | Val | Gly | Leu | Val | Phe | Ala | Gly | Gly | Leu | Ile | Phe | Leu | 165 | 170 | 175 |     |
| Leu | Arg | Arg | Tyr | Trp | Ser | Gly | Thr | Lys | Lys | Arg | Ala | Arg | Ile | His | Leu | 180 | 185 | 190 |     |
| Thr | Pro | Ala | Glu | Arg | Glu | Lys | Lys | Asp | Gly | Lys | Lys | Lys | Pro | Pro | Phe | 195 | 200 | 205 |     |
| Trp | Thr | Arg | Ile | Ala | Leu | Ile | Leu | Ser | Ala | Ile | Gly | Val | Ala | Phe | Ser | 210 | 215 | 220 |     |
| His | Gly | Ala | Asn | Asp | Gly | Gln | Lys | Gly | Ile | Gly | Leu | Val | Met | Leu | Val | 225 | 230 | 235 | 240 |
| Leu | Ile | Gly | Val | Ala | Pro | Ala | Gly | Phe | Val | Val | Asn | Met | Asn | Ala | Thr | 245 | 250 | 255 |     |
| Gly | Tyr | Glu | Ile | Thr | Arg | Thr | Arg | Asp | Ala | Ile | Asn | Asn | Val | Glu | Ala | 260 | 265 | 270 |     |
| Tyr | Phe | Glu | Gln | His | Pro | Ala | Leu | Leu | Lys | Gln | Ala | Thr | Gly | Ala | Asp | 275 | 280 | 285 |     |
| Gln | Leu | Val | Pro | Ala | Pro | Glu | Ala | Gly | Ala | Thr | Gln | Pro | Ala | Glu | Phe | 290 | 295 | 300 |     |
| His | Cys | His | Pro | Ser | Asn | Thr | Ile | Asn | Ala | Leu | Asn | Arg | Leu | Lys | Gly | 305 | 310 | 315 | 320 |
| Met | Leu | Thr | Thr | Asp | Val | Glu | Ser | Tyr | Asp | Lys | Leu | Ser | Leu | Asp | Gln | 325 | 330 | 335 |     |
| Arg | Ser | Gln | Met | Arg | Arg | Ile | Met | Leu | Cys | Val | Ser | Asp | Thr | Ile | Asp | 340 | 345 | 350 |     |
| Lys | Val | Val | Lys | Met | Pro | Gly | Val | Ser | Ala | Asp | Asp | Gln | Arg | Leu | Leu | 355 | 360 | 365 |     |
| Lys | Lys | Leu | Lys | Ser | Asp | Met | Leu | Ser | Thr | Ile | Glu | Tyr | Ala | Pro | Val | 370 | 375 | 380 |     |
| Trp | Ile | Ile | Met | Ala | Val | Ala | Leu | Ala | Leu | Gly | Ile | Gly | Thr | Met | Ile | 385 | 390 | 395 | 400 |
| Gly | Trp | Arg | Arg | Val | Ala | Thr | Thr | Ile | Gly | Glu | Lys | Ile | Gly | Lys | Lys |     |     |     |     |

|                                                                 |     |     |     |     |     |
|-----------------------------------------------------------------|-----|-----|-----|-----|-----|
|                                                                 | 405 |     | 410 |     | 415 |
| Gly Met Thr Tyr Ala Gln Gly Met Ser Ala Gln Met Thr Ala Ala Val |     |     |     |     |     |
|                                                                 | 420 |     | 425 |     | 430 |
| Ser Ile Gly Leu Ala Ser Tyr Thr Gly Met Pro Val Ser Thr Thr His |     |     |     |     |     |
|                                                                 | 435 |     | 440 |     | 445 |
| Val Leu Ser Ser Ser Val Ala Gly Thr Met Val Val Asp Gly Gly Gly |     |     |     |     |     |
|                                                                 | 450 |     | 455 |     | 460 |
| Leu Gln Arg Lys Thr Val Thr Ser Ile Leu Met Ala Trp Val Phe Thr |     |     |     |     |     |
| 465                                                             |     | 470 |     | 475 | 480 |
| Leu Pro Ala Ala Val Leu Leu Ser Gly Gly Leu Tyr Trp Leu Ser Leu |     |     |     |     |     |
|                                                                 | 485 |     | 490 |     | 495 |
| Gln Phe Leu                                                     |     |     |     |     |     |

<210> 2  
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 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> pitA

|                                                                     |     |
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| <400> 2                                                             |     |
| atgctacatt tgtttgctgg cctggatttg cataccgggc tgttattatt gcttgcactg   | 60  |
| gcttttgtgc tgttctacga agccatcaat ggtttccatg acacagccaa cgccgtggca   | 120 |
| accgttatct ataccgcgc gatgcgttct cagctcgccg tggttatggc ggcggtattc    | 180 |
| aactttttgg gtgttttgct gggtggtctg agtgttgctt atgccattgt gcatatgctg   | 240 |
| ccgacggatc tgctgcttaa tatgggatcg tctcatggcc ttgccatggt gttctctatg   | 300 |
| ttgctggcgg cgattatctg gaacctgggt acctgggtact ttggtttacc tgcattccagc | 360 |
| tctcatagc tgattggcgc gatcatcggg attgggttaa ccaatgcgtt gatgaccggg    | 420 |
| acgtcagtgg tggatgcact caatatcccg aaagtattaa gtattttcgg ttctctgac    | 480 |
| gtttccccta ttgtcggcct ggtgtttgct ggcgggtctga ttttcttgct gcgtcgctac  | 540 |
| tggagcggca ccaagaaacg cgcccgtatc cacctgaccc cagcggagcg tgaaaagaaa   | 600 |

|                                                                    |      |
|--------------------------------------------------------------------|------|
| gacggcaaga aaaagccgcc gttctggacg cgtattgcgc tgatcctttc cgctatcggc  | 660  |
| gtggcgtttt cgcacggcgc gaacgatggc cagaaaggca ttggtctggc tatgttggt   | 720  |
| ttgattggcg tcgcgccagc aggcttcgtg gtgaacatga atgccactgg ctacgaaatc  | 780  |
| acccgtaccc gtgatgccat caacaacgtc gaagcttact ttgagcagca tcctgcgctg  | 840  |
| ctcaaacagg ctaccggtgc tgatcagtta gtaccggctc cggaagctgg cgcaacgcaa  | 900  |
| cctgcggagt tccactgcc a tccgtcgaat accattaacg cgctcaaccg cctgaaaggt | 960  |
| atgttgacca ccgatgtgga aagctacgac aagctgtcgc ttgatcaacg tagccagatg  | 1020 |
| cgccgcatta tgctgtgcgt ttctgacact atcgacaaag tggatgaagat gcctggcgtg | 1080 |
| agtgtgacg atcagcgcct gttgaagaaa ctgaagtccg acatgcttag caccatcgag   | 1140 |
| tatgcaccgg tgtggatcat catggcggtc gcgctggcgt taggtatcgg tacgatgatt  | 1200 |
| ggctggcgcc gtgtggcaac gactatcggc gagaaaatcg gtaagaaagg catgacctac  | 1260 |
| gctcagggga tgtctgcccc gatgacggcg gcagtgtcta tcggcctggc gagttatacc  | 1320 |
| gggatgccgg tttccactac tcacgtactc tcctcttctg tcgcggggac gatggtggta  | 1380 |
| gatggtggcg gcttacagcg taaaaccgtg accagcattc tgatggcctg ggtgtttacc  | 1440 |
| cttccggctg cggctactgct ttccggcggg ctgtactggc tctccttgca gttcctgtaa | 1500 |
|                                                                    | 1500 |

<210> 3  
 <211> 301  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> CJ1 promoter

|                                                                    |     |
|--------------------------------------------------------------------|-----|
| <400> 3                                                            |     |
| caccgcgggc ttattccatt acatggaatg accaggaatg gcagggaatg cgacgaaatt  | 60  |
| gactgttgtc gggagcttct gatccgatgc tgccaaccag gagagaaaaat aatgacatgt | 120 |
| gcaggcacgc tggatgagctg gagatttatg atctcaagta ccttttttct tgcactcgag | 180 |

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| ggggctgagt gccagaatgg ttgctgacac caggttgagg ttggtacaca ctcaccaatc | 240 |
| ctgccgtcgc gggcgctgc gtggaacata aaccttgagt gaaaccaat ctaggagatt   | 300 |
| a                                                                 | 301 |

<210> 4  
 <211> 30  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> fepBdel-A-F

|                                  |    |
|----------------------------------|----|
| <400> 4                          |    |
| cccaagcttc cggtgttcag aatcgctccg | 30 |

<210> 5  
 <211> 40  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> fepBdel-A-R

|                                             |    |
|---------------------------------------------|----|
| <400> 5                                     |    |
| gcggccgcaa aggactagtc ctccggcatt cagtcaggtc | 40 |

<210> 6  
 <211> 56  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> fepBdel-B-F

|                                                               |    |
|---------------------------------------------------------------|----|
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| ctagtccttt gcggccgccc attccgccct tcaaccttcc gcctagatta cttctc | 56 |

<210> 7  
 <211> 32  
 <212> DNA  
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<220>  
 <223>     fepBdel-B-R

<400>     7  
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<210>     8  
 <211>     49  
 <212>     DNA  
 <213>     Artificial Sequence

<220>  
 <223>     pCJ1-pitA-A-F

<400>     8  
 ttcgacctga ctgaatgccg gaggaaccgc gggcttattc cattacatg 49

<210>     9  
 <211>     46  
 <212>     DNA  
 <213>     Artificial Sequence

<220>  
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<400>     9  
 caaacaaatg tagcatttaa tctcctagat tgggtttcac tcaagg 46

<210>     10  
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<400>     10  
 acccaatcta ggagattaaa tgctacattt gtttgctggc ctg 43

<210>     11  
 <211>     43

<212> DNA  
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<220>  
<223> pCJ1-pitA-B-R

<400> 11  
cggaagggtg aaggcggatt acaggaactg caaggagagc cag 43

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<211> 21  
<212> DNA  
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<220>  
<223> fepBdel-check-F

<400> 12  
gacctgactg aatgccggag g 21

<210> 13  
<211> 21  
<212> DNA  
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<220>  
<223> fepBdel-check-R

<400> 13  
ggaagggtga aggcggagt g 21