|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Protein** | **Organism** | **Uniprot ID** | **N-terminal only** | **Undefined** | **Adenylation state(A-state)** | **Thioesterificationstate (T-state)** |
| 2,3-dihydroxybenzoate- AMP ligase | *Acinetobacter baumannii* | A0A0Q1N003 | 3O82, 3O83,3O84, 3U16,3U17 |   |   |   |
| ABBFA\_003403 | *Acinetobacterbaumannii* | A0A0X1KH98 |   | 4ZXH, 4ZXI |   |   |
| 4-Cholrobenzoyl- CoA ligase | *Alcaligenes sp.AL3007* | Q8GN86 |   |   | 1T5H, 1T5D,2QVX, 2QVY,2QVZ, 2QW0,3CW8, 3DLP | 3CW9 |
| Blue ShiftedLuciferase | *Amydetes vivianii* | A0A3F2YLV6 |   | 6AAA |   |   |
| 2-hydroxyisobutyryl-CoA synthetase | *Aquincola tertiaricarbonis* | I3VE75 |   | 6HDW, 6HDX, 6HDY,6HE0, 6HE2 |   |   |
| 4-coumarate-CoAligase 1 | *Arabidopsis thaliana* | Q42524 | 3TSY |   |   |   |
| Oxalate-CoA Ligase | *Arabidopsis thaliana* | Q9SMT7 |   |   | 5IE0 |   |
| Long-chain fatty acid-CoA ligase | *Archaeoglobus fulgidus* (strain ATCC49558) | O30147 |   | 3G7S |   |   |
| D-alanine-D-alanyl carrier proteinligase | *Bacillus cereus* (strain ATCC 14579) | Q81G39 |   |   | 3DHV, 3FCC, 3FCE |   |
| PheA | *Bacillus migulanus* | P0C061 |   |   | 1AMU |   |
| 2-succinyl benzoate-CoA ligase | *Bacillus subtilis*(strain 168) | P23971 |   | 5BUQ | 5BUR, 5BUS | 5X8F |
| DhbE | *Bacillus subtilis*(strain 168) | P40871 |   |   | 1MDF, 1MD9,1MDB |   |
| DltA | *Bacillus subtilis*(strain 168) | P39581 |   |   |   | 3E7W, 3E7X |
| SrfA-C | *Bacillus subtilis*(strain 168) | Q08787 |   |   | 2VSQ |   |
| Phenylacetate-coenzyme A ligase | *Bacteroidesthetaiotaomicron* | Q8AAN6 |   | 4RVN |   | 4RVO, 4R1M, 4R1L |
| LgrA | *Brevibacillusparabrevis* | Q70LM7 | 5ES6, 5ES7, 5JNF,6MFY, 6MFZ | 5ES5, 5ES9, 6MFX,6MFW, 6MG0 |   | 5ES8 |
| TycA | Brevibacillusparabrevis | P09095 | 5N81, 5N82 |   |   |   |
| Acyl-CoASynthetase | *Brucella canis* | A9MB96 |   | 5U2A |   |   |
| Phenylacetate- coenzyme A ligase | *Burkholderia cenocepacia* (strainATCC BAA-245) | B4E7B5 |   | 2Y27, 2Y4N |   |   |
| Phenylacetate- coenzyme A ligase | *Burkholderia cenocepacia* (strainATCC BAA-245) | B4EL89 |   |   |   | 2Y4O |
| ObiF1 | *Burkholderia diffusa* | A0A5H1ZR44 |   | 6N8E |   |   |
| Bile acid-coenzymeA ligase | *Clostridium scindens* | P19409 | 4LGC |   |   |   |
| Acetyl-CoA Synthetase | *Cryptococcus neoformans* var.grubii serotype A | J9VFT1 |   | 5VPV | 5K85, 5U29, 5K8F,5IFI, 5VPV |   |
| Dshi\_0825 | *Dinoroseobactershibae* | A8LRC0 |   |   |   | 5GXD |
| Acyl-CoA synthetase | *Dyadobacterfermentans* | C6W5A4 |   | 4GS5 |   |   |
| Txo1 | *Eleftheria terrae* | A0A0B5GUD2 | 6OYF, 6OZV,6P4U | 6P1J |   |   |
| EhpF | *Enterobacteragglomerans* | Q8GPH0 | 3L2K |   |   |   |
| 3-hydroxyacyl-CoAdehydrogenase | *Erythrobacter sp.*NAP1 | A3WE14 |   |   |   | 6EQO |
| 2-succinyl benzoate-CoA ligase | *Escherichia coli*(strain K12) | P37353 |   |   | 5C5H, 6NJ0 |   |
| EntE | *Escherichia coli*(strain K12) | P10378 |   |   |   | 6IYK, 6IYL |
| EntE+EntB Fusion | *Escherichia coli*(strain K12) | P0ADI4+P10378 |   |   |   | 3RG2, 4IZ6 |
| EntF | *Escherichia coli*(strain K12) | P11454 |   |   |   | 5T3D, 5JA1, 5JA2 |
| EcFAAL | *Escherichia coli*O6:H1 | A0A0H2VDD9 |   |   | 3PBK |   |
| Nonribosomalpeptide synthetase | *Geobacillus sp.*Y4.1MC1 | UPI0001B0E66C |   | 5U89 |   |   |
| ACSM2A | *Homo sapiens* | Q08AH3 |   |   | 3C5E, 3DAY, 3GPC | 2WD9, 2VZE, 3EQ6,3B7W |
| AGF18\_11095 | *Klebsiella oxytoca* | A0A2U4DY99 | 6VHT, 6VHU,6VHW, 6VHX,6VHZ6 |   | 6VHV | 6VHY |
| Luciferase | *Lampyristurkestanicus* | Q5UFR2 | 3QYA, 4M46 |   |   |   |
| LpFAAL | *Legionellapneumophila* | Q5ZTD3 |   | 3KXW, 3LNV |   |   |
| Luciferase | *Luciola cruciata* | P13129 |   |   | 2D1Q, 2D1R,2D1S, 2D1T |   |
| Fatty acid-CoAligase | *Marinactinosporathermotolerans* | R4R1U5 |   |   | 6H1B, 6SQ8 |   |
| MA\_2912 | *Methanosarcina acetivorans* (strainATCC 35395) | Q8TLW1 |   |   |   | 3ETC |
| McyG | *Microcystisaeruginosa* PCC 7806 | A8YJW1 |   |   | 4R0M |   |
| TioS+TioT fusion | Micromonospora sp.ML1 | Q333U7+Q333U6 |   |   |   | 5WMM |
| CAR AdenGR01\_22995 | *Mycobacteriumchelonae* | A0A0E3TT64 |   | 6OZ1 |   |   |
| MsFAAL32 | *Mycobacteriummarinum* | B2HMK0 |   |   | 5EY9 |   |
| MbtA | *Mycobacteriumsmegmatis* | A0R0V0 |   | 5KEI |   |   |
| MsFAAL32 | *Mycobacteriumsmegmatis* | A0R618 | 5D6N |   | 5D6J, 5EY8, 5ICR |   |
| FAAL28 | *Mycobacteriumtuberculosis* H37Rv | P9WQ59 | 3E53, 3T5A |   |   |   |
| FACL13 | *Mycobacteriumtuberculosis* H37Rv | P9WQ37 | 3T5B, 3T5C,5ZRN | 3R44 |   |   |
| FadD10 | *Mycobacteriumtuberculosis* H37Rv | P9WQ55 |   | 4IR7, 4ISB |   |   |
| FadD32 | *Mycobacteriumtuberculosis* H37Rv | O53580 |   |   | 5HM3 |   |
| Nonribosomalpeptide synthase SidN | *Neotyphodium lolii* | K7NCP5 | 3ITE |   |   |   |
| 4-coumarate-CoAligase 2 | *Nicotiana tabacum* | O24146 |   | 5U95 | 5BSM, 5BSW | 5BSR, 5BST, 5BSU,5BSV |
| Carboxylic AcidReductase | *Nocardia iowensis* | Q6RKB1 |   | 5MSC, 5MSD |   |   |
| Benzoate-CoA ligase | *Paraburkholderia xenovorans* (strainLB400) | Q13WK3 |   |   | 2V7B |   |
| Luciferase | *Photinus pyralis* | P08659 | 3IEP, 3IER, 3IES,3RIX | 1LCI, 1BA3, 5DV9 | 4G36, 6SQ8, 5KYT,5KYV, 6Q2M | 4G37 |
| ApnA A1 | *Planktothrix rubescens* NIVA-CYA18 | G0WVH3 | 4D4H |   |   | 4D4G, 4D4I, 4D56,4D57 |
| 4-coumarate:CoAligase | *Populus tomentosa* | Q941M3 |   | 3A9U |   | 3A9V |
| PA0996 | *Pseudomonasaeruginosa PAO1* | Q9I4X3 | 5OE3, 5OE4,5OE5, 5OE6 |   |   |   |
| PA1221 | *Pseudomonasaeruginosa* PAO1 | Q9I4B7 |   |   |   | 4DG8, 4DG9 |
| PltF+PltL coupled | *Pseudomonasfluorescens* | Q4KCY5+Q4KCZ1 |   |   |   | 6O6E |
| Benzoate-CoA Ligase | *Rhodopseudomonas palustris* | Q93TK0 |   |   |   | 4EAT, 4RLF, 4RLQ,4RM2, 4RM3, 4RMN,4ZJZ |
| Long-chain fattyacid-CoA ligase | *Rhodopseudomonaspalustris* | Q6NAE3 | 3IVR |   |   |   |
| Malonyl CoAsynthetase | *Rhodopseudomonaspalustris* | Q6ND88 |   | 4FUQ, 4FUT, 4GXQ,4GXR |   |   |
| SL1157\_2728 | *Ruegerialacuscaerulensis* | D0CPY8 |   | 6IHK, 6IJB |   |   |
| Acetyl-CoAsynthetase | *Saccharomycescerevisiae* | Q01574 |   |   | 1RY2 |   |
| Acetyl-CoA synthetase | *Salmonella typhimurium* | Q8ZKF6 |   |   |   | 1PG3, 1PG4, 2P2F,2P20, 2P2B, 2P2J,2P2M, 2P2Q, 5JRH |
| Carboxylic AcidReductase | *Segniliparus rugosus*ATCC BAA-974 | E5XP76 |   | 5MST, 5MSW |   | 5MSS |
| 2-succinyl benzoate-CoA ligase | *Staphylococcusaureus* (strain N315) | P63526 |   | 3IPL |   |   |
| Anthranilate-CoAligase | *Stigmatellaaurantiaca* | F3Y661 |   |   | 4WV3 |   |
| D-alanine-D-alanylcarrier protein ligase | *Streptococcuspyogenes* serotype M6 | Q5XBN5 |   | 3L8C, 3LGX |   |   |
| Malonyl-CoA Ligase | *Streptomyces coelicolor* (strainATCC BAA-471) | Q9L0A2 |   |   |   | 3NYQ, 3NYR |
| CahJ | Streptomyces gandocaensis | A0A140DJY3 |   |   |   | 5WM2, 5WM3,5WM4, 5WM5,5WM6, 5WM7 |
| VinN | *Streptomyceshalstedii* | Q76KY2 | 3WVN, 3WV5,3WV4 |   |   |   |
| Acetoacetyl-CoASynthetase 1 | *Streptomyces lividans*TK24 | D6EQU8 |   |   | 4WD1 |   |
| PtmA2 | *Streptomycesplatensis* |   |   | 5E7Q, 5UPQ |   |   |
| CmiS6 | *Streptomyces* spMJ635-86F5 | X5IJ97 | 5JJP |   |   |   |
| Thr1 | *Streptomyces sp.* | H6SG27 |   |   | 5N9X, 5N9W |   |
| IdnL1 | *Streptomyces* sp.ML694-90F3 | A0A077KT11 |   |   |   | 5JJQ |
| IdnL7 | *Streptomyces sp.*ML694-90F3 | A0A077KUW8 |   | 6AKD |   |   |
| CytC1 | *Streptomyces* sp.NBRC 110028 | UPI0006E2E4D2 |   | 3VNR, 3VNS, 3VNQ |   |   |
| Fatty acyl-CoA synthetase | *Thermus thermophilus* (strainHB8) | Q5SKN9 |   | 1ULT |   | 1V25, 1V26 |
| EntF | *Vibrio cholerae*serotype O1 | Q9KRQ7 |   |   |   | 4OXI |
| Luciferase-like enzyme AMP-CoA-ligase | *Zophobas atratus* | A0A0R4I967 | 4W8O |   |   |   |