**Supplementary Table 1**

|  |  |
| --- | --- |
| **Genbank assembly accession** | **Strain** |
| GCF\_003205815.1\_ASM320581v1 | P. sp. R2A2 |
| GCF\_005844005.1\_ASM584400v1 | P. stutzeri PheN2 |
| GCA\_901420285.1\_33962\_A02 | P. stutzeri NCTC11607 |
| GCF\_004793985.1\_ASM479398v1 | P. stutzeri CM14 |
| GCF\_004683755.1\_ASM468375v1 | P. stutzeri AK6 |
| GCF\_004359495.1\_ASM435949v1 | P. stutzeri ATCC 17588 |
| GCF\_900638035.1\_55147\_C01 | P. stutzeri NCTC10475 |
| GCF\_900636845.1\_44858\_G01 | P. stutzeri NCTC10450 |
| GCF\_003965105.1\_ASM396510v1 | P. stutzeri PS\_001 |
| GCF\_003952685.1\_ASM395268v1 | P. stutzeri KGS-8 |
| GCF\_003952645.1\_ASM395264v1 | P. stutzeri KGS-2 |
| GCF\_003047145.2\_ASM304714v2 | P. stutzeri SGAir0442 |
| GCF\_003940985.1\_ASM394098v1 | P. stutzeri PS\_050 |
| GCF\_003940545.1\_ASM394054v1 | P. stutzeri PS\_066 |
| GCF\_003940515.1\_ASM394051v1 | P. stutzeri PS\_087 |
| GCF\_003940495.1\_ASM394049v1 | P. stutzeri PS\_133 |
| GCF\_003936745.1\_ASM393674v1 | P. stutzeri PS\_075 |
| GCF\_003936675.1\_ASM393667v1 | P. stutzeri PS\_234 |
| GCF\_003936705.1\_ASM393670v1 | P. stutzeri PS\_131 |
| GCF\_003936715.1\_ASM393671v1 | P. stutzeri PS\_110 |
| GCF\_003936145.1\_ASM393614v1 | P. stutzeri PS\_027 |
| GCF\_003936125.1\_ASM393612v1 | P. stutzeri PS\_072 |
| GCF\_003936075.1\_ASM393607v1 | P. stutzeri PS\_125 |
| GCF\_003936085.1\_ASM393608v1 | P. stutzeri PS\_128 |
| GCF\_003936055.1\_ASM393605v1 | P. stutzeri PS\_134 |
| GCF\_003936035.1\_ASM393603v1 | P. stutzeri PS\_130 |
| GCF\_003935935.1\_ASM393593v1 | P. stutzeri PS\_197 |
| GCF\_003936025.1\_ASM393602v1 | P. stutzeri PS\_138 |
| GCF\_003935965.1\_ASM393596v1 | P. stutzeri PS\_151 |
| GCF\_003935955.1\_ASM393595v1 | P. stutzeri PS\_211 |
| GCF\_003935925.1\_ASM393592v1 | P. stutzeri PS\_167 |
| GCF\_003935625.1\_ASM393562v1 | P. stutzeri PS\_377 |
| GCF\_003935565.1\_ASM393556v1 | P. stutzeri PS\_257 |
| GCF\_003935575.1\_ASM393557v1 | P. stutzeri PS\_366 |
| GCF\_003935545.1\_ASM393554v1 | P. stutzeri PS\_376 |
| GCA\_003410115.1\_ASM341011v1 | P. stutzeri ATCC 17587 |
| GCF\_900455625.1\_57940\_C02 | P. stutzeri NCTC10473 |
| GCF\_003255915.1\_ASM325591v1 | P. stutzeri CM |
| GCA\_003243385.1\_ASM324338v1 | P. stutzeri S2\_003\_000\_R2\_15 |
| GCF\_003047145.1\_ASM304714v1 | P. stutzeri SGAir0442 |
| GCF\_003008495.1\_ASM300849v1 | P. stutzeri 1W1-1A |
| GCF\_003001655.1\_ASM300165v1 | P. stutzeri DW2-1 |
| GCF\_002909485.1\_ASM290948v1 | P. stutzeri 24a13 |
| GCF\_002891015.1\_ASM289101v1 | P. stutzeri DSM 50238 |
| GCF\_002890995.1\_ASM289099v1 | P. stutzeri 28a3 |
| GCF\_002890955.1\_ASM289095v1 | P. stutzeri ST27MN3 |
| GCF\_002890935.1\_ASM289093v1 | P. stutzeri DNSP21 |
| GCF\_002890915.1\_ASM289091v1 | P. stutzeri 24a75 |
| GCF\_002890895.1\_ASM289089v1 | P. stutzeri 4C29 |
| GCF\_002890875.1\_ASM289087v1 | P. stutzeri DSM 17088 |
| GCF\_002890855.1\_ASM289085v1 | P. stutzeri CCUG 36651 |
| GCF\_002890835.1\_ASM289083v1 | P. stutzeri CCUG 44592 |
| GCF\_002890795.1\_ASM289079v1 | P. stutzeri KC |
| GCF\_002843895.1\_ASM284389v1 | P. stutzeri DSM 50227 |
| GCA\_002501025.1\_ASM250102v1 | P. stutzeri UBA7897 |
| GCA\_002500775.1\_ASM250077v1 | P. stutzeri UBA7844 |
| GCA\_002500675.1\_ASM250067v1 | P. stutzeri UBA7861 |
| GCA\_002500285.1\_ASM250028v1 | P. stutzeri UBA7847 |
| GCA\_002487265.1\_ASM248726v1 | P. stutzeri UBA4963 |
| GCA\_002484325.1\_ASM248432v1 | P. stutzeri UBA7613 |
| GCA\_002484245.1\_ASM248424v1 | P. stutzeri UBA7617 |
| GCA\_002484035.1\_ASM248403v1 | P. stutzeri UBA7627 |
| GCA\_002483925.1\_ASM248392v1 | P. stutzeri UBA7633 |
| GCA\_002483545.1\_ASM248354v1 | P. stutzeri UBA7652 |
| GCA\_002482365.1\_ASM248236v1 | P. stutzeri UBA7711 |
| GCA\_002482335.1\_ASM248233v1 | P. stutzeri UBA7713 |
| GCA\_002479445.1\_ASM247944v1 | P. stutzeri UBA7511 |
| GCA\_002479285.1\_ASM247928v1 | P. stutzeri UBA7538 |
| GCA\_002477745.1\_ASM247774v1 | P. stutzeri UBA7601 |
| GCA\_002477385.1\_ASM247738v1 | P. stutzeri UBA7458 |
| GCA\_002476945.1\_ASM247694v1 | P. stutzeri UBA7516 |
| GCA\_002473225.1\_ASM247322v1 | P. stutzeri UBA7241 |
| GCA\_002472825.1\_ASM247282v1 | P. stutzeri UBA7250 |
| GCA\_002471085.1\_ASM247108v1 | P. stutzeri UBA7343 |
| GCA\_002455935.1\_ASM245593v1 | P. stutzeri UBA6631 |
| GCA\_002455815.1\_ASM245581v1 | P. stutzeri UBA6635 |
| GCA\_002455775.1\_ASM245577v1 | P. stutzeri UBA6639 |
| GCA\_002455715.1\_ASM245571v1 | P. stutzeri UBA6643 |
| GCA\_002455635.1\_ASM245563v1 | P. stutzeri UBA6649 |
| GCA\_002454635.1\_ASM245463v1 | P. stutzeri UBA6702 |
| GCA\_002453575.1\_ASM245357v1 | P. stutzeri UBA6752 |
| GCA\_002453425.1\_ASM245342v1 | P. stutzeri UBA6760 |
| GCA\_002452485.1\_ASM245248v1 | P. stutzeri UBA6822 |
| GCA\_002451325.1\_ASM245132v1 | P. stutzeri UBA6892 |
| GCA\_002451245.1\_ASM245124v1 | P. stutzeri UBA6896 |
| GCA\_002449475.1\_ASM244947v1 | P. stutzeri UBA6826 |
| GCA\_002440565.1\_ASM244056v1 | P. stutzeri UBA6275 |
| GCA\_002440495.1\_ASM244049v1 | P. stutzeri UBA6287 |
| GCA\_002439525.1\_ASM243952v1 | P. stutzeri UBA6279 |
| GCA\_002439185.1\_ASM243918v1 | P. stutzeri UBA6312 |
| GCA\_002438285.1\_ASM243828v1 | P. stutzeri UBA6301 |
| GCA\_002438105.1\_ASM243810v1 | P. stutzeri UBA6318 |
| GCA\_002435225.1\_ASM243522v1 | P. stutzeri UBA6501 |
| GCA\_002434545.1\_ASM243454v1 | P. stutzeri UBA6548 |
| GCA\_002434415.1\_ASM243441v1 | P. stutzeri UBA6556 |
| GCA\_002434325.1\_ASM243432v1 | P. stutzeri UBA6559 |
| GCA\_002433525.1\_ASM243352v1 | P. stutzeri UBA6599 |
| GCA\_002432785.1\_ASM243278v1 | P. stutzeri UBA5840 |
| GCA\_002432185.1\_ASM243218v1 | P. stutzeri UBA5863 |
| GCA\_002432145.1\_ASM243214v1 | P. stutzeri UBA5865 |
| GCA\_002430985.1\_ASM243098v1 | P. stutzeri UBA5929 |
| GCA\_002430265.1\_ASM243026v1 | P. stutzeri UBA5963 |
| GCA\_002429975.1\_ASM242997v1 | P. stutzeri UBA5981 |
| GCA\_002429895.1\_ASM242989v1 | P. stutzeri UBA5985 |
| GCA\_002425655.1\_ASM242565v1 | P. stutzeri UBA5562 |
| GCA\_002425495.1\_ASM242549v1 | P. stutzeri UBA5569 |
| GCA\_002424945.1\_ASM242494v1 | P. stutzeri UBA5597 |
| GCA\_002423335.1\_ASM242333v1 | P. stutzeri UBA6125 |
| GCA\_002421085.1\_ASM242108v1 | P. stutzeri UBA5649 |
| GCA\_002420805.1\_ASM242080v1 | P. stutzeri UBA5661 |
| GCA\_002419865.1\_ASM241986v1 | P. stutzeri UBA5710 |
| GCA\_002419855.1\_ASM241985v1 | P. stutzeri UBA5711 |
| GCA\_002419685.1\_ASM241968v1 | P. stutzeri UBA5719 |
| GCA\_002418345.1\_ASM241834v1 | P. stutzeri UBA5790 |
| GCA\_002415415.1\_ASM241541v1 | P. stutzeri UBA5140 |
| GCA\_002415305.1\_ASM241530v1 | P. stutzeri UBA5029 |
| GCA\_002414315.1\_ASM241431v1 | P. stutzeri UBA5117 |
| GCA\_002413985.1\_ASM241398v1 | P. stutzeri UBA5137 |
| GCA\_002403755.1\_ASM240375v1 | P. stutzeri UBA4749 |
| GCA\_002403535.1\_ASM240353v1 | P. stutzeri UBA4758 |
| GCA\_002392215.1\_ASM239221v1 | P. stutzeri UBA3873 |
| GCA\_002392165.1\_ASM239216v1 | P. stutzeri UBA3876 |
| GCA\_002392095.1\_ASM239209v1 | P. stutzeri UBA3879 |
| GCA\_002392045.1\_ASM239204v1 | P. stutzeri UBA3882 |
| GCA\_002391985.1\_ASM239198v1 | P. stutzeri UBA3885 |
| GCA\_002389895.1\_ASM238989v1 | P. stutzeri UBA4391 |
| GCA\_002389165.1\_ASM238916v1 | P. stutzeri UBA4480 |
| GCA\_002389115.1\_ASM238911v1 | P. stutzeri UBA4482 |
| GCA\_002388215.1\_ASM238821v1 | P. stutzeri UBA4529 |
| GCA\_002388145.1\_ASM238814v1 | P. stutzeri UBA4533 |
| GCA\_002388065.1\_ASM238806v1 | P. stutzeri UBA4537 |
| GCA\_002387945.1\_ASM238794v1 | P. stutzeri UBA4545 |
| GCA\_002387495.1\_ASM238749v1 | P. stutzeri UBA4595 |
| GCA\_002387375.1\_ASM238737v1 | P. stutzeri UBA4614 |
| GCA\_002387305.1\_ASM238730v1 | P. stutzeri UBA4547 |
| GCA\_002387205.1\_ASM238720v1 | P. stutzeri UBA4556 |
| GCA\_002387165.1\_ASM238716v1 | P. stutzeri UBA4558 |
| GCA\_002386665.1\_ASM238666v1 | P. stutzeri UBA4603 |
| GCA\_002385235.1\_ASM238523v1 | P. stutzeri UBA3963 |
| GCA\_002385035.1\_ASM238503v1 | P. stutzeri UBA3971 |
| GCA\_002384505.1\_ASM238450v1 | P. stutzeri UBA3984 |
| GCA\_002381725.1\_ASM238172v1 | P. stutzeri UBA4107 |
| GCA\_002381675.1\_ASM238167v1 | P. stutzeri UBA4113 |
| GCA\_002380885.1\_ASM238088v1 | P. stutzeri UBA4134 |
| GCA\_002380585.1\_ASM238058v1 | P. stutzeri UBA4160 |
| GCA\_002380045.1\_ASM238004v1 | P. stutzeri UBA4155 |
| GCA\_002379995.1\_ASM237999v1 | P. stutzeri UBA4163 |
| GCA\_002378825.1\_ASM237882v1 | P. stutzeri UBA3453 |
| GCA\_002378715.1\_ASM237871v1 | P. stutzeri UBA3460 |
| GCA\_002378365.1\_ASM237836v1 | P. stutzeri UBA3454 |
| GCA\_002377205.1\_ASM237720v1 | P. stutzeri UBA3517 |
| GCA\_002376625.1\_ASM237662v1 | P. stutzeri UBA3552 |
| GCA\_002375735.1\_ASM237573v1 | P. stutzeri UBA3589 |
| GCA\_002367555.1\_ASM236755v1 | P. stutzeri UBA3044 |
| GCA\_002365745.1\_ASM236574v1 | P. stutzeri UBA3094 |
| GCA\_002365475.1\_ASM236547v1 | P. stutzeri UBA3114 |
| GCA\_002365145.1\_ASM236514v1 | P. stutzeri UBA3137 |
| GCA\_002365105.1\_ASM236510v1 | P. stutzeri UBA3140 |
| GCA\_002365055.1\_ASM236505v1 | P. stutzeri UBA3146 |
| GCA\_002363465.1\_ASM236346v1 | P. stutzeri UBA3230 |
| GCA\_002363305.1\_ASM236330v1 | P. stutzeri UBA3248 |
| GCA\_002363025.1\_ASM236302v1 | P. stutzeri UBA3228 |
| GCA\_002362915.1\_ASM236291v1 | P. stutzeri UBA3235 |
| GCA\_002362885.1\_ASM236288v1 | P. stutzeri UBA3232 |
| GCA\_002362825.1\_ASM236282v1 | P. stutzeri UBA3240 |
| GCA\_002362755.1\_ASM236275v1 | P. stutzeri UBA3244 |
| GCA\_002360755.1\_ASM236075v1 | P. stutzeri UBA3349 |
| GCA\_002359175.1\_ASM235917v1 | P. stutzeri UBA2672 |
| GCA\_002358225.1\_ASM235822v1 | P. stutzeri UBA3423 |
| GCA\_002358195.1\_ASM235819v1 | P. stutzeri UBA3418 |
| GCA\_002354345.1\_ASM235434v1 | P. stutzeri UBA2699 |
| GCA\_002354255.1\_ASM235425v1 | P. stutzeri UBA2703 |
| GCA\_002352925.1\_ASM235292v1 | P. stutzeri UBA1884 |
| GCA\_002348875.1\_ASM234887v1 | P. stutzeri UBA2949 |
| GCA\_002346755.1\_ASM234675v1 | P. stutzeri UBA3023 |
| GCA\_002346465.1\_ASM234646v1 | P. stutzeri UBA3004 |
| GCA\_002345575.1\_ASM234557v1 | P. stutzeri UBA2301 |
| GCA\_002345265.1\_ASM234526v1 | P. stutzeri UBA2314 |
| GCA\_002345055.1\_ASM234505v1 | P. stutzeri UBA2326 |
| GCA\_002342105.1\_ASM234210v1 | P. stutzeri UBA2472 |
| GCA\_002341925.1\_ASM234192v1 | P. stutzeri UBA2482 |
| GCA\_002341735.1\_ASM234173v1 | P. stutzeri UBA2490 |
| GCA\_002341565.1\_ASM234156v1 | P. stutzeri UBA2499 |
| GCA\_002340215.1\_ASM234021v1 | P. stutzeri UBA2568 |
| GCA\_002340005.1\_ASM234000v1 | P. stutzeri UBA2605 |
| GCA\_002339875.1\_ASM233987v1 | P. stutzeri UBA2573 |
| GCA\_002339845.1\_ASM233984v1 | P. stutzeri UBA2580 |
| GCA\_002339675.1\_ASM233967v1 | P. stutzeri UBA2609 |
| GCA\_002338865.1\_ASM233886v1 | P. stutzeri UBA1830 |
| GCA\_002338305.1\_ASM233830v1 | P. stutzeri UBA1862 |
| GCA\_002338285.1\_ASM233828v1 | P. stutzeri UBA1864 |
| GCA\_002337885.1\_ASM233788v1 | P. stutzeri UBA1890 |
| GCA\_002337855.1\_ASM233785v1 | P. stutzeri UBA1892 |
| GCA\_002337845.1\_ASM233784v1 | P. stutzeri UBA1891 |
| GCA\_002337815.1\_ASM233781v1 | P. stutzeri UBA1893 |
| GCA\_002337765.1\_ASM233776v1 | P. stutzeri UBA1896 |
| GCA\_002337335.1\_ASM233733v1 | P. stutzeri UBA1920 |
| GCA\_002335105.1\_ASM233510v1 | P. stutzeri UBA2003 |
| GCA\_002333255.1\_ASM233325v1 | P. stutzeri UBA2056 |
| GCA\_002332925.1\_ASM233292v1 | P. stutzeri UBA2054 |
| GCA\_002332525.1\_ASM233252v1 | P. stutzeri UBA2064 |
| GCA\_002331665.1\_ASM233166v1 | P. stutzeri UBA2081 |
| GCA\_002331645.1\_ASM233164v1 | P. stutzeri UBA2080 |
| GCA\_002331415.1\_ASM233141v1 | P. stutzeri UBA2115 |
| GCA\_002325885.1\_ASM232588v1 | P. stutzeri UBA1453 |
| GCA\_002325895.1\_ASM232589v1 | P. stutzeri UBA1452 |
| GCA\_002325835.1\_ASM232583v1 | P. stutzeri UBA1455 |
| GCA\_002325585.1\_ASM232558v1 | P. stutzeri UBA1468 |
| GCA\_002325525.1\_ASM232552v1 | P. stutzeri UBA1470 |
| GCA\_002325025.1\_ASM232502v1 | P. stutzeri UBA1495 |
| GCA\_002323655.1\_ASM232365v1 | P. stutzeri UBA1502 |
| GCA\_002323015.1\_ASM232301v1 | P. stutzeri UBA1642 |
| GCA\_002322705.1\_ASM232270v1 | P. stutzeri UBA1598 |
| GCA\_002321985.1\_ASM232198v1 | P. stutzeri UBA1599 |
| GCA\_002321815.1\_ASM232181v1 | P. stutzeri UBA1637 |
| GCA\_002321095.1\_ASM232109v1 | P. stutzeri UBA1646 |
| GCA\_002321055.1\_ASM232105v1 | P. stutzeri UBA1648 |
| GCA\_002320895.1\_ASM232089v1 | P. stutzeri UBA1656 |
| GCA\_002315125.1\_ASM231512v1 | P. stutzeri UBA1804 |
| GCA\_002315115.1\_ASM231511v1 | P. stutzeri UBA1810 |
| GCA\_002314405.1\_ASM231440v1 | P. stutzeri UBA1807 |
| GCA\_002311755.1\_ASM231175v1 | P. stutzeri UBA1168 |
| GCA\_002311715.1\_ASM231171v1 | P. stutzeri UBA1171 |
| GCA\_002311095.1\_ASM231109v1 | P. stutzeri UBA1169 |
| GCA\_002307985.1\_ASM230798v1 | P. stutzeri UBA1286 |
| GCA\_002307875.1\_ASM230787v1 | P. stutzeri UBA1292 |
| GCA\_002307775.1\_ASM230777v1 | P. stutzeri UBA1300 |
| GCA\_002306155.1\_ASM230615v1 | P. stutzeri UBA1355 |
| GCA\_002306135.1\_ASM230613v1 | P. stutzeri UBA1356 |
| GCA\_002296595.1\_ASM229659v1 | P. stutzeri UBA808 |
| GCA\_002296385.1\_ASM229638v1 | P. stutzeri UBA803 |
| GCA\_002296325.1\_ASM229632v1 | P. stutzeri UBA805 |
| GCA\_002296205.1\_ASM229620v1 | P. stutzeri UBA821 |
| GCA\_002295785.1\_ASM229578v1 | P. stutzeri UBA861 |
| GCA\_002295365.1\_ASM229536v1 | P. stutzeri UBA863 |
| GCA\_002295205.1\_ASM229520v1 | P. stutzeri UBA872 |
| GCA\_002294535.1\_ASM229453v1 | P. stutzeri UBA904 |
| GCA\_002294115.1\_ASM229411v1 | P. stutzeri UBA897 |
| GCA\_002293905.1\_ASM229390v1 | P. stutzeri UBA915 |
| GCA\_002292125.1\_ASM229212v1 | P. stutzeri UBA990 |
| GCA\_002292085.1\_ASM229208v1 | P. stutzeri UBA988 |
| GCF\_002282995.1\_ASM228299v1 | P. stutzeri KMS 55 |
| GCF\_002193135.1\_ASM219313v1 | P. stutzeri 19 |
| GCF\_002093045.2\_ASM209304v2 | P. stutzeri LH-42 |
| GCF\_002093045.1\_ASM209304v1 | P. stutzeri LH-42 |
| GCF\_002027175.1\_ASM202717v1 | P. stutzeri 40D2 |
| GCF\_001996325.1\_ASM199632v1 | P. stutzeri DCP-Ps1 |
| GCF\_001705635.1\_ASM170563v1 | P. stutzeri AR9-4 |
| GCF\_001648195.1\_ASM164819v1 | P. stutzeri 273 |
| GCF\_001635435.1\_ASM163543v1 | P. stutzeri HI00D01 |
| GCF\_001575085.1\_ASM157508v1 | P. stutzeri ODKF13 |
| GCF\_000282955.1\_ASM28295v1 | P. stutzeri T13 |
| GCF\_000235745.1\_ASM23574v2 | P. stutzeri SDM-LAC |
| GCF\_000280555.1\_ASM28055v1 | P. stutzeri XLDN-R |
| GCF\_000341615.1\_PstNF13\_1.0 | P. stutzeri NF13 |
| GCF\_000327065.1\_ASM32706v1 | P. stutzeri RCH2 |
| GCF\_001294145.1\_ASM129414v1 | P. stutzeri KF716 |
| GCF\_000263395.1\_ASM26339v1 | P. stutzeri TS44 |
| GCF\_001276475.1\_ASM127647v1 | P. stutzeri C2 |
| GCF\_000237885.1\_PseStu\_1.0 | P. stutzeri CCUG 16156 |
| GCF\_000267545.1\_ASM26754v1 | P. stutzeri CCUG 29243 |
| GCF\_000279165.1\_ASM27916v1 | P. stutzeri DSM 10701 |
| GCF\_000195105.1\_ASM19510v1 | P. stutzeri DSM 4166 |
| GCF\_001064225.1\_ASM106422v1 | P. stutzeri 267\_PSTU |
| GCF\_001062345.1\_ASM106234v1 | P. stutzeri 1223\_PMEN |
| GCF\_001038645.1\_ASM103864v1 | P. stutzeri SLG510A3-8 |
| GCF\_000982865.1\_ASM98286v1 | P. stutzeri ST-9 |
| GCF\_000952685.1\_ASM95268v1 | P. stutzeri NT0128 |
| GCF\_000952205.1\_ASM95220v1 | P. stutzeri NT0124 |
| GCF\_000935215.1\_ASM93521v1 | P. stutzeri BAL361 |
| GCF\_000219605.1\_ASM21960v1 | P. stutzeri CGMCC 1.1803 |
| GCF\_000828205.1\_ASM82820v1 | P. stutzeri YC-YH1 |
| GCF\_000661915.1\_ASM66191v1 | P. stutzeri 19SMN4 |
| GCF\_000590475.1\_ASM59047v1 | P. stutzeri 28a24 |
| GCF\_000307775.2\_PseStu2.0 | P. stutzeri KOS6 |
| GCF\_000455665.1\_ASM45566v1 | P. stutzeri MF28 |
| GCF\_000416345.1\_PstB1SMN1\_1.0 | P. stutzeri B1SMN1 |
| GCF\_000013785.1\_ASM1378v1 | P. stutzeri A1501 |

**Supplementary Table 2. Sequences used to build the phylogenetic tree of dioxygenases**

|  |  |
| --- | --- |
| **Sequences obtained through blast** |  |
| **Database** | **ID sequence match** | **Percent Identity** |  |
| P. stutzeri Vs database nr | HAJ87005.1 | 99.038 |  |
| WP\_063544000.1 | 98.718 |  |
| WP\_133455780.1 | 98.718 |  |
| WP\_125869588.1 | 98.397 |  |
| WP\_110777513.1 | 98.397 |  |
| *P. stutzeri* Vs nr without *P. stutzeri* | MAL91162.1 | 97.742 |  |
| HCL15434.1 | 96.474 |  |
| CJL61736.1 | 95.513 |  |
| PNF99967.1 | 91.987 |  |
| WP\_090523539.1 | 91.346 |  |
| *P. stutzer*i GOM2 Vs *P. putida* | WP\_084857903.1 | 79.167 |  |
| WP\_079228244.1 | 76.603 |  |
| WP\_099593249.1 | 76.603 |  |
| WP\_075805444.1 | 76.603 |  |
| WP\_075044942.1 | 76.677 |  |
|  *P. stutzeri* vs without taxon Pseudomonas | CJL61736.1 | 95.513 |  |
| WP\_067383272.1 | 72.903 |  |
| WP\_067292069.1 | 72.903 |  |
| SCZ15571.1 | 75.962 |  |
| SSU86403.1 | 76.206 |  |
| WP\_076724300.1 | 59.164 |  |
| MAC21167.1 | 58.71 |  |
| WP\_022990605.1 | 57.419 |  |
| WP\_111498031.1 | 59.677 |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **Sequences of the paper Guzik et al 2012** |  |  |  |
| **ID** | **Database** | **Name** | **Organism** | **Substrate** | **Paper Reference ID** |
| Q93SY8 | Uni-prot | Catechol 1,2-dioxygenase | Acinetobacter radioresistens | catechol | AF380158 |
| Q9F103 | Uni-prot | Catechol 1,2-dioxygenase | Acinetobacter radioresistens | 4-methylcatechol | AF182166 |
| CAA85386.1 | NCBI | catechol 1,2-dioxygenase [Acinetobacter calcoaceticus] | Acinetobacter calcoaceticus | catechol | No ID |
| BAD11154.1 | NCBI | catechol 1,2-dioxygenase [Acinetobacter calcoaceticus] | Arthrobacter sp. BA-5-17 | Catechol, 3-methylcatechol, 4-methylcatechol | AB109791.1 |
| BAD11152.1 | NCBI | cis,cis-muconate cycloisomerase | Arthrobacter sp. BA-5-17 | // | NA |
| BAC16779.1 | NCBI | catechol 1,2-dioxygenase  | Burkholderia sp. TH2 | Catechol, 3-methylcatechol, 4-methylcatechol | AB035483 |
| BAC16769.1 | NCBI | catechol 1,2-dioxygenase | Burkholderia sp. TH2 | Catechol, 4-methylcatechol | AB035325 |
| AAG05895.1 | NCBI | catechol 1,2-dioxygenase | Pseudomonas aeruginosa PAO1 |   |   |
| ABS86779.1 | NCBI | catechol 1,2-dioxygenase | Pseudomonas putida | catechol | EU000396.1 |
| WP\_084166591.1 | NCBI | catechol 1,2-dioxygenase | Pseudomonas knackmussii | Catechol,3-chlorocatechol, 4-chlorocatechol, 3-methylcatechol, 4-methylcatechol | No ID |
| P96984\_RHOER | Uni-prot | catechol 1,2-dioxygenase | Rhodococcus erythropolis | catechol | D83237 |
| CAA67941.1 | NCBI | catechol 1,2-dioxygenase | Rhodococcus opacus | Catechol, 3-methylcatechol, 4-methylcatechol | X99622.1 |
| AAC38251.1 | NCBI | chlorocatechol 1,2-dioxygenase | Rhodococcus opacus | 4-chlorocatecho | AF003948.1 |
| CAD28142.1 | NCBI | chlorocatechol 1,2-dioxygenase | (plasmid) Rhodococcus opacus | 3-chlorocatechol | AJ439407.1 |
| ABS86780.1 | NCBI | catechol 1,2-dioxygenase | Stenotrophomonas maltophilia | catechol  |   |

|  |
| --- |
| **Sequences of the paper Nazmi et al. 2019 and Caglio 2009** |
| ID | Name | Organism | Reference |
| Q9F103 | CatAb | A. radioresistens | Nazmi et al. 2019-Caglio et al. 2009-Guzik |
| Q51433 | CatA C12DO | P. putida | Nazmi et al. 2019-Caglio et al. 2009 |
| A4JR51 | C12DO | B. vietnamiensis | Nazmi et al. 2019 |
| P07773.1 | C12DO | A. baylyi ASP1 | Nazmi et al. 2019-Caglio et al. 2009 |
| P11451.1 | CC12DO | P. putida | Nazmi et al. 2019-Caglio et al. 2009 |
| O67987 | CC12DO | R. opacus | Nazmi et al. 2019 |
| P95607 | CatA C12DO (Fragment) | R. opacus | Nazmi et al. 2019 |
| O33948 | CATA1, C12DO | Acinetobacter lwoffii | Caglio et al. 2009 |
| Q8G9L3 | clcA2, CC12DO | P. putida | Caglio et al. 2009 |
| O67987 | CLCA | [R. opacus | Caglio et al. 2009 |
| Q9WXC8 | CC12DO | P. putida | Caglio et al. 2009 |
| P27098.1 | CC12DO | Pseudomonas sp. P51 | Caglio et al. 2009 |
| AAQ87516.1 | Hq12DO (plasmid) | S. fredii NGR234 | Caglio et al. 2009 |
| CAA51371.1 | Hq12DO | Sphingomonas sp. | Caglio et al. 2009 |

**Supplementary Table 3**

|  |
| --- |
| **Enzymes identified using a set of enzymes involved in the degradation of xenobiotics** |
|  | EC-search | Location in genome | Percent identity |  |
| Scaffold 15 | EC\_1.14.12.10 | 1182 | 71.882 |  |  |
|  | EC\_1.14.12.10 | 1183 | 61.728 |  |  |
|  | EC\_1.3.1.25 | 1185 | 60.153 |  |  |
|  | EC\_5.5.1.1 | 1187 | 84.595 |  |  |
|  | EC\_5.3.3.4 | 1188 | 85.417 |  |  |
|  | EC\_1.13.11.1 | 1189 | 73.718 |  |  |
|  |  |  |  |  |  |
| Scaffold 14 | EC\_2.8.3.6 | 1146 | 90.769 |  |  |
|  | EC\_2.8.3.6 | 1147 | 87.589 |  |  |
|  | EC\_2.3.1.174 | 1145 | 82.045 |  |  |
|  | EC\_3.1.1.24 | 1144 | 41.27 |  |  |

|  |
| --- |
| **Supplementary Table 4. Taxonomic annotation** |
| **Method** | **Software** | **Database** | **Result\*** | **Score** | **Taxa level** |
| 16S rRNA | Blast | 16S RefSeq NCBI | *Pseudomonas stutzeri* strain ATCC 17588 (NR\_103934) | 99.803 % Identity | Species |
| Greengenes 13\_5 | *Pseudomonas stutzeri* DSM 4166 (CP002622.1) | 99.869 % Identity | Species |
| Silva SSU 132 | *Pseudomonas stutzeri* B1SMN1 (AMVM00000000.1) | 99.869 % Identity | Species |
| RDP Release 11, Update 5 | Pseudomonas stutzeri A1501 (CP000304.1) | 99.869 % Identity | Species |
| k-mer | Kraken | Kraken | *Pseudomonas* | 96.64 % sequences | Genus |
| Single Copy Markers | MetaPhlan | MetaPhlan | *Pseudomonas stutzeri* unclassified | 99.3757 % sequences | Species |

**Supplementary Table 5**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Scaffold** | **ID** | **Start** | **Stop** | **Strand** | **Function** |
| scaffold\_14 | [1144](http://rast.nmpdr.org/seedviewer.cgi?page=Annotation&feature=fig%7C6666666.294894.peg.1144) | 20091 | 19303 | - | Beta-ketoadipate enol-lactone hydrolase (EC 3.1.1.24) |
| scaffold\_14 | [1145](http://rast.nmpdr.org/seedviewer.cgi?page=Annotation&feature=fig%7C6666666.294894.peg.1145) | 21553 | 20348 | - | Beta-ketoadipyl CoA thiolase (EC 2.3.1.-) |
| scaffold\_14 | [1146](http://rast.nmpdr.org/seedviewer.cgi?page=Annotation&feature=fig%7C6666666.294894.peg.1146) | 22332 | 21550 | - | 3-oxoadipate CoA-transferase subunit B (EC 2.8.3.6); Glutaconate CoA-transferase subunit B (EC 2.8.3.12) |
| scaffold\_14 | [1147](http://rast.nmpdr.org/seedviewer.cgi?page=Annotation&feature=fig%7C6666666.294894.peg.1147) | 23189 | 22332 | - | 3-oxoadipate CoA-transferase subunit A (EC 2.8.3.6); Glutaconate CoA-transferase subunit A (EC 2.8.3.12) |
| scaffold\_14 | [1148](http://rast.nmpdr.org/seedviewer.cgi?page=Annotation&feature=fig%7C6666666.294894.peg.1148) | 23220 | 23387 | + | hypothetical protein |
| scaffold\_14 | [1149](http://rast.nmpdr.org/seedviewer.cgi?page=Annotation&feature=fig%7C6666666.294894.peg.1149) | 24207 | 23365 | - | Pca regulon regulatory protein PcaR |
|  |  |  |  |  |  |
| scaffold\_15 | [1181](http://rast.nmpdr.org/seedviewer.cgi?page=Annotation&feature=fig%7C6666666.294894.peg.1181) | 30562 | 31515 | + | benABC operon transcriptional activator BenR |
| scaffold\_15 | [1182](http://rast.nmpdr.org/seedviewer.cgi?page=Annotation&feature=fig%7C6666666.294894.peg.1182) | 31733 | 33109 | + | Benzoate 1,2-dioxygenase alpha subunit (EC 1.14.12.10) |
| scaffold\_15 | [1183](http://rast.nmpdr.org/seedviewer.cgi?page=Annotation&feature=fig%7C6666666.294894.peg.1183) | 33110 | 33598 | + | Benzoate 1,2-dioxygenase beta subunit (EC 1.14.12.10) |
| scaffold\_15 | [1184](http://rast.nmpdr.org/seedviewer.cgi?page=Annotation&feature=fig%7C6666666.294894.peg.1184) | 33609 | 34619 | + | benzoate dioxygenase, ferredoxin reductase component |
| scaffold\_15 | [1185](http://rast.nmpdr.org/seedviewer.cgi?page=Annotation&feature=fig%7C6666666.294894.peg.1185) | 34690 | 35466 | + | 1,2-dihydroxycyclohexa-3,5-diene-1-carboxylate dehydrogenase (EC 1.3.1.25) |
| scaffold\_15 | [1186](http://rast.nmpdr.org/seedviewer.cgi?page=Annotation&feature=fig%7C6666666.294894.peg.1186) | 35574 | 36920 | + | benzoate MFS transporter BenK |
| scaffold\_15 | [1187](http://rast.nmpdr.org/seedviewer.cgi?page=Annotation&feature=fig%7C6666666.294894.peg.1187) | 36948 | 38069 | + | Muconate cycloisomerase (EC 5.5.1.1) |
| scaffold\_15 | [1188](http://rast.nmpdr.org/seedviewer.cgi?page=Annotation&feature=fig%7C6666666.294894.peg.1188) | 38084 | 38374 | + | Muconolactone isomerase (EC 5.3.3.4) |
| scaffold\_15 | [1189](http://rast.nmpdr.org/seedviewer.cgi?page=Annotation&feature=fig%7C6666666.294894.peg.1189) | 38446 | 39384 | + | Catechol 1,2-dioxygenase (EC 1.13.11.1) |
| scaffold\_15 | [1190](http://rast.nmpdr.org/seedviewer.cgi?page=Annotation&feature=fig%7C6666666.294894.peg.1190) | 39523 | 40722 | + | Benzoate transport protein |
| scaffold\_15 | [1191](http://rast.nmpdr.org/seedviewer.cgi?page=Annotation&feature=fig%7C6666666.294894.peg.1191) | 40831 | 42093 | + | benzoate-specific porin |