Table S1. List of bacteria isolated from roots of *Phragmites australis* and used in this work. Accession numbers of 16S rRNA gene partial sequences are reported.

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| --- | --- | --- | --- |
| **Sampling** | **Isolate** | **Genus** | **Accession number** |
| 1 | V2 R1 | *Pantoea* | MK110895 |
| 1 | V2 R2 | *Pseudomonas* | MK110946 |
| 1 | V2 R3 | *Pantoea* | MK110896 |
| 1 | V2 R4 | *Pantoea* | MK110920 |
| 1 | V2 R5 | *Pantoea* | MK110921 |
| 1 | V2 R6 | *Pseudomonas* | MK110947 |
| 1 | V2 R7 | *Flavobacterium* | MK110948 |
| 1 | V2 R8 | *Pseudomonas* | MK110922 |
| 1 | V2 R9 | *Pseudomonas* | MK110897 |
| 1 | V2 R10 | *Pseudomonas* | MK110949 |
| 1 | V2 R12 | *Pseudomonas* | MK110898 |
| 1 | V2 R13 | *Pseudomonas* | MK110950 |
| 1 | V2 R14 | *Lelliottia* | MK110899 |
| 1 | V2 R15 | *Pantoea* | MK110959 |
| 1 | V2 R16 | *Pseudomonas* | MK110923 |
| 1 | V2 R17 | *Pseudomonas* | MK110925 |
| 1 | V2 R18 | *Pseudomonas* | MK110924 |
| 1 | V2 R19 | *Pseudomonas* | MK110960 |
| 1 | V2 R20 | *Pseudomonas* | MK110926 |
| 1 | V2 R21 | *Janthinobacterium* | MK110945 |
| 1 | V2 R22 | *Pantoea* | MK110957 |
| 1 | V2 R23 | *Pseudomonas* | MK110927 |
| 1 | V2 R24 | *Pantoea* | MK110928 |
| 1 | V1 R1 | *Bacillus* | MK110929 |
| 1 | V1 R2 | *Bacillus* | MK110930 |
| 1 | V1 R3 | *Staphylococcus* | MK110931 |
| 1 | V1 R4 | *Bacillus* | MK110932 |
| 1 | V1 R5 | *Bacillus* | MK110900 |
| 1 | V1 R6 | *Bacillus* | MK110901 |
| 1 | V1 R7 | *Pseudomonas* | MK110902 |
| 1 | V1 R8 | *Pseudomonas* | MK110933 |
| 1 | V1 R9 | *Pseudomonas* | MK110934 |
| 1 | V1 R10 | *Bacillus* | MK110935 |
| 1 | V1 R11 | *Bacillus* | MK110958 |
| 1 | V1 R12 | *Bacillus* | MK110936 |
| 1 | V1 R13 | *Bacillus* | MK110937 |
| 1 | V1 R15 | *Pseudomonas* | MK110938 |
| 1 | V1 R16 | *Pseudomonas* | MK110939 |
| 1 | V1 R17 | *Pseudomonas* | MK110940 |
| 1 | V1 R19 | *Pseudomonas* | MK110941 |
| 1 | V1 R20 | *Buttiauxella* | MK110942 |
| 1 | V1 R21 | *Pseudomonas* | MK110943 |
| 1 | H1 R2 | *Pseudomonas* | MK110903 |
| 1 | H1 R3 | *Pseudomonas* | MK110904 |
| 1 | H1 R4 | *Pseudomonas* | MK110905 |
| 1 | H1 R5 | *Pseudomonas* | MK110906 |
| 1 | H1 R6 | *Pseudomonas* | MK110907 |
| 1 | H1 R7 | *Pseudomonas* | MK110908 |
| 1 | H1 R9 | *Pseudomonas* | MK110909 |
| 1 | H1 R10 | *Pseudomonas* | MK110910 |
| 1 | H1 R13 | *Pseudomonas* | MK110911 |
| 1 | H1 R14 | *Pseudomonas* | MK110912 |
| 1 | H1 R15 | *Pseudomonas* | MK110951 |
| 1 | H1 R16 | *Pectobacterium* | MK110913 |
| 1 | H1 R17 | *Pseudomonas* | MK110914 |
| 1 | H1 R18 | *Pseudomonas* | MK110915 |
| 1 | H1 R19 | *Pseudomonas* | MK110952 |
| 1 | H1 R20 | *Pseudomonas* | MK110916 |
| 1 | H1 R21 | *Lelliottia* | MK110953 |
| 1 | H1 R22 | *Pseudomonas* | MK110917 |
| 1 | H1 R23 | *Pseudomonas* | MK110954 |
| 1 | H2 R1 | *Pseudomonas* | MK110918 |
| 1 | H2 R2 | *Pseudomonas* | MK110944 |
| 1 | H2 R3 | *Pseudomonas* | MK110961 |
| 1 | H2 R5 | *Pseudomonas* | MK110919 |
| 1 | H2 R6 | *Pseudomonas* | MK110955 |
| 1 | H2 R7 | *Stenotrophomonas* | MK110956 |

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| --- | --- | --- | --- |
| 2 | V3 R3 | *Achromobacter* | MK134509 |
| 2 | V4 R15 | *Acinetobacter* | MK134489 |
| 2 | V4 R17 | *Acinetobacter* | MK134488 |
| 2 | V4 R18 | *Acinetobacter* | MK134487 |
| 2 | V4 R20 | *Acinetobacter* | MK134486 |
| 2 | H3 R12 | *Agrobacterium* | MK134554 |
| 2 | V3 R5 | *Agrobacterium* | MK134508 |
| 2 | H4 R8 | *Bacillus* | MK134547 |
| 2 | V4 R1 | *Bacillus* | MK134496 |
| 2 | H4 R3 | *Comamonas* | MK138850 |
| 2 | V3 R13 | *Halomonas* | MK134502 |
| 2 | V3 R1 | *Idiomarina* | MK134511 |
| 2 | H3 R19 | *Microbacterium* | MK134551 |
| 2 | H3 R9 | *Microbacterium* | MK134555 |
| 2 | H3 R2 | *Pseudomonas* | MK134559 |
| 2 | H3 R3 | *Ochrobactrum* | MK134558 |
| 2 | H4 R1 | *Vibrio* | MK134549 |
| 2 | V4 R21 | *Ochrobactrum* | MK138851 |
| 2 | H3 R14 | *Pannonibacter* | MK134553 |
| 2 | H4 R22 | *Paracoccus* | MK134542 |
| 2 | H3 R4 | *Pseudomonas* | MK134557 |
| 2 | H4 R13 | *Pseudomonas* | MK134546 |
| 2 | H4 R19 | *Pseudomonas* | MK134544 |
| 2 | H4 R21 | *Pseudomonas* | MK134543 |
| 2 | H4 R23 | *Pseudomonas* | MK134541 |
| 2 | H4 R24 | *Pseudomonas* | MK134540 |
| 2 | V3 R2 | *Pseudomonas* | MK134510 |
| 2 | V3 R23 | *Pseudomonas* | MK134497 |
| 2 | V4 R13 | *Pseudomonas* | MK134490 |
| 2 | V4 R2 | *Pseudomonas* | MK134495 |
| 2 | V4 R3 | *Pseudomonas* | MK134494 |
| 2 | V4 R4 | *Pseudomonas* | MK134493 |
| 2 | V3 R16 | *Pseudoxanthomonas* | MK134499 |
| 2 | V3 R9 | *Pseudoxanthomonas* | MK134505 |
| 2 | H3 R17 | *Rheinheimera* | MK134552 |
| 2 | H3 R6 | *Rheinheimera* | MK134556 |
| 2 | H4 R18 | *Rheinheimera* | MK134545 |
| 2 | H4 R7 | *Rheinheimera* | MK134548 |
| 2 | V3 R15 | *Rheinheimera* | MK134500 |
| 2 | V3 R4 | *Rheinheimera* | MT165525 |
| 2 | V3 R7 | *Rheinheimera* | MK134507 |
| 2 | V3 R11 | *Staphylococcus* | MK134504 |
| 2 | V3 R12 | *Staphylococcus* | MK134503 |
| 2 | H3 R24 | *Thalassospira* | MK134550 |
| 2 | V3 R14 | *Thalassospira* | MK134501 |
| 2 | V3 R19 | *Thalassospira* | MK134498 |
| 2 | V3 R8 | *Thalassospira* | MK134506 |
| 2 | V4 R5 | *Pseudomonas* | MK134492 |
| 2 | V4 R7 | *Pseudomonas* | MK134491 |
| 3 | H6 R17 | *Achromobacter* | MK134518 |
| 3 | V6 R5 | *Achromobacter* | MK130934 |
| 3 | V6 R6 | *Achromobacter* | MK130935 |
| 3 | H6 R10 | *Agrobacterium* | MK134524 |
| 3 | H5 R1 | *Bacillus* | MK134539 |
| 3 | H5 R2 | *Bacillus* | MK134538 |
| 3 | H6 R20 | *Bacillus* | MK134515 |
| 3 | H6 R21 | *Bacillus* | MK138852 |
| 3 | H6 R8 | *Bacillus* | MK134526 |
| 3 | V6 R1 | *Bacillus* | MK130907 |
| 3 | V6 R2 | *Bacillus* | MK130906 |
| 3 | V6 R8 | *Bacillus* | MK130937 |
| 3 | H5 R6 | *Enterobacter* | MK134534 |
| 3 | H5 R7 | *Enterobacter* | MK134533 |
| 3 | V5 R10 | *Halomonas* | MK138853 |
| 3 | V5 R13 | *Halomonas* | MK130915 |
| 3 | V5 R15 | *Halomonas* | MK130913 |
| 3 | V5 R20 | *Halomonas* | MK130910 |
| 3 | V5 R5 | *Halomonas* | MK130921 |
| 3 | V5 R9 | *Halomonas* | MK130917 |
| 3 | H6 R22 | *Isoptericola* | MK134514 |
| 3 | V5 R14 | *Microbacterium* | MK130914 |
| 3 | H6 R19 | *Pannonibacter* | MK134516 |
| 3 | V5 R18 | *Pannonibacter* | MK130911 |
| 3 | H5 R8 | *Bacillus* | MK134532 |
| 3 | H6 R1 | *Pseudomonas* | MK134531 |
| 3 | H6 R2 | *Pseudomonas* | MK134530 |
| 3 | H6 R4 | *Pseudomonas* | MK134528 |
| 3 | V5 R1 | *Pseudomonas* | MK134485 |
| 3 | V5 R11 | *Pseudomonas* | MK138854 |
| 3 | V5 R17 | *Pseudomonas* | MK130912 |
| 3 | V5 R22 | *Pseudomonas* | MK130908 |
| 3 | V5 R6 | *Pseudomonas* | MK130920 |
| 3 | V6 R3 | *Pseudomonas* | MK130932 |
| 3 | V6 R4 | *Pseudomonas* | MK130933 |
| 3 | V6 R7 | *Pseudomonas* | MK130936 |
| 3 | H6 R23 | *Pseudoxanthomonas* | MK134513 |
| 3 | V5 R4 | *Rheinheimera* | MK130922 |
| 3 | V5 R7 | *Rheinheimera* | MK130919 |
| 3 | H6 R14 | *Rhizobium* | MK134521 |
| 3 | H6 R24 | *Rhizobium* | MK134512 |
| 3 | H5 R3 | *Stenotrophomonas* | MK134537 |
| 3 | H5 R4 | *Stenotrophomonas* | MK134536 |
| 3 | H5 R5 | *Stenotrophomonas* | MK134535 |
| 3 | H6 R12 | *Stenotrophomonas* | MK134522 |
| 3 | H6 R16 | *Stenotrophomonas* | MK134519 |
| 3 | H6 R18 | *Stenotrophomonas* | MK134517 |
| 3 | H6 R3 | *Stenotrophomonas* | MK134529 |
| 3 | H6 R9 | *Stenotrophomonas* | MK134525 |
| 3 | H6 R11 | *Thalassospira* | MK134523 |
| 3 | H6 R15 | *Thalassospira* | MK134520 |
| 3 | H6 R7 | *Thalassospira* | MK134527 |
| 3 | V5 R12 | *Thalassospira* | MK130916 |
| 3 | V5 R2 | *Pseudomonas* | MK130931 |
| 3 | V5 R21 | *Thalassospira* | MK130909 |
| 3 | V5 R3 | *Thalassospira* | MK130923 |
| 3 | V5 R8 | *Thalassospira* | MK130918 |
| 4 | V8 R2 | *Achromobacter* | MK130945 |
| 4 | V8 R21 | *Achromobacter* | MK130957 |
| 4 | V8 R23 | *Achromobacter* | MK130901 |
| 4 | V8 R3 | *Achromobacter* | MK130905 |
| 4 | H8 R5 | *Aeromonas* | MK133358 |
| 4 | H7 R23 | *Agrobacterium* | MK138868 |
| 4 | H7 R3 | *Agrobacterium* | MK138869 |
| 4 | H7 R5 | *Agrobacterium* | MK138870 |
| 4 | H7 R7 | *Agrobacterium* | MK138872 |
| 4 | H7 R9 | *Agrobacterium* | MK138874 |
| 4 | H8 R1 | *Agrobacterium* | MK138875 |
| 4 | H8 R16 | *Agrobacterium* | MK130924 |
| 4 | H8 R18 | *Agrobacterium* | MK130928 |
| 4 | H8 R3 | *Agrobacterium* | MK138881 |
| 4 | H7 R16 | *Arthrobacter* | MK138862 |
| 4 | V8R7 | *Devosia* | MK130903 |
| 4 | H7 R22 | *Flavobacterium* | MK138867 |
| 4 | H8 R12 | *Flavobacterium* | MK138878 |
| 4 | H7 R15 | *Lysobacter* | MK138861 |
| 4 | V7 R8 | *Microbacterium* | MK130939 |
| 4 | H7 R19 | *Micrococcus* | MK138863 |
| 4 | V8 R12 | *Pannonibacter* | MK130949 |
| 4 | V8 R16 | *Pannonibacter* | MK130953 |
| 4 | V8 R4 | *Pannonibacter* | MK130904 |
| 4 | H8 R10 | *Pseudomonas* | MK138876 |
| 4 | H8 R13 | *Pseudomonas* | MK138879 |
| 4 | H8 R14 | *Pseudomonas* | MK130926 |
| 4 | H8 R17 | *Pseudomonas* | MK130927 |
| 4 | H8 R19 | *Pseudomonas* | MK130929 |
| 4 | H8 R2 | *Pseudomonas* | MK138880 |
| 4 | H8 R20 | *Pseudomonas* | MK130930 |
| 4 | H8 R4 | *Pseudomonas* | MK138882 |
| 4 | H8 R6 | *Pseudomonas* | MK138883 |
| 4 | H8 R7 | *Pseudomonas* | MK138884 |
| 4 | H8 R8 | *Pseudomonas* | MK138885 |
| 4 | H8 R9 | *Pseudomonas* | MK138886 |
| 4 | V7 R13 | *Pseudomonas* | MK138887 |
| 4 | V7 R19 | *Pseudomonas* | MK130940 |
| 4 | V7 R21 | *Pseudomonas* | MK130941 |
| 4 | V7 R23 | *Pseudomonas* | MK130943 |
| 4 | V7 R9 | *Pseudomonas* | MK138889 |
| 4 | V8 R1 | *Pseudomonas* | MK130944 |
| 4 | V8 R22 | *Pseudomonas* | MK130902 |
| 4 | V8 R24 | *Pseudomonas* | MK130900 |
| 4 | V8 R8 | *Pseudomonas* | MK130946 |
| 4 | H8 R11 | *Rheinheimera* | MK138877 |
| 4 | H7 R1 | *Rhizobium* | MK138855 |
| 4 | H7 R10 | *Rhizobium* | MK138856 |
| 4 | H7 R11 | *Rhizobium* | MK138857 |
| 4 | H7 R12 | *Rhizobium* | MK138858 |
| 4 | H7 R13 | *Rhizobium* | MK138859 |
| 4 | H7 R14 | *Rhizobium* | MK138860 |
| 4 | H7 R2 | *Rhizobium* | MK138864 |
| 4 | H7 R20 | *Rhizobium* | MK138865 |
| 4 | H7 R21 | *Rhizobium* | MK138866 |
| 4 | H7 R6 | *Rhizobium* | MK138871 |
| 4 | H7 R8 | *Rhizobium* | MK138873 |
| 4 | H8 R15 | *Rhizobium* | MK130925 |
| 4 | V7 R22 | *Rhizobium* | MK130942 |
| 4 | V8 R11 | *Shinella* | MK130948 |
| 4 | V8 R13 | *Shinella* | MK130950 |
| 4 | V8 R18 | *Sphingobium* | MK130955 |
| 4 | V7 R24 | *Stenotrophomonas* | MK138888 |
| 4 | V8 R14 | *Thalassospira* | MK130951 |
| 4 | V8 R15 | *Thalassospira* | MK130952 |
| 4 | V8 R17 | *Thalassospira* | MK130954 |
| 4 | V8 R19 | *Thalassospira* | MK130956 |
| 4 | V8 R9 | *Thalassospira* | MK130947 |

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| 5 | V9 R1 | *Pseudomonas* | MT165526 |
| 5 | V9 R2 | *Pseudomonas* | MT165527 |
| 5 | V9 R4 | *Bacillus* | MT165547 |
| 5 | V9 R5 | *Flavobacterium* | MT165551 |
| 5 | V9 R6 | *Achromobacter* | MT165553 |
| 5 | V9 R7 | *Flavobacterium* | MT165552 |
| 5 | V9 R8 | *Pseudomonas* | MT165528 |
| 5 | V9 R9 | *Stenotrophomonas* | MT165529 |
| 5 | V9 R10 | *Pseudomonas* | MT165530 |
| 5 | V9 R12 | *Pseudomonas* | MT165531 |
| 5 | V9 R14 | *Pseudomonas* | MT165532 |
| 5 | V9 R16 | *Pseudomonas* | MT165533 |
| 5 | V9 R17 | *Stenotrophomonas* | MT165534 |
| 5 | V9 R18 | *Ochrobactrum* | MT165557 |
| 5 | V9 R20 | *Achromobacter* | MT165554 |
| 5 | V9 R21 | *Pseudomonas* | MT165535 |
| 5 | V9 R23 | *Pseudomonas* | MT165536 |
| 5 | V9 R24 | *Achromobacter* | MT165555 |
| 5 | H9 R1 | *Planococcus* | MT165558 |
| 5 | H9 R2 | *Pantoea* | MT165559 |
| 5 | H9 R10 | *Chryseobacterium* | MT165561 |
| 5 | H9 R12 | *Bacillus* | MT165548 |
| 5 | H9 R13 | *Chryseobacterium* | MT165562 |
| 5 | H9 R15 | *Pantoea* | MT165560 |
| 5 | H9 R16 | *Bacillus* | MT165549 |
| 5 | H9 R17 | *Chryseobacterium* | MT165563 |
| 5 | H9 R22 | *Rhizobium* | MT165564 |
| 5 | H9 R24 | *Pseudomonas* | MT165537 |
| 5 | V10 R5 | *Pseudomonas* | MT165538 |
| 5 | V10 R7 | *Paenibacillus* | MT165565 |
| 5 | V10 R9 | *Pseudomonas* | MT165539 |
| 5 | V10 R10 | *Pseudomonas* | MT165540 |
| 5 | V10 R11 | *Paenibacillus* | MT165566 |
| 5 | V10 R12 | *Stenotrophomonas* | MT165570 |
| 5 | V10 R13 | *Paenibacillus* | MT165569 |
| 5 | V10 R14 | *Paenibacillus* | MT165567 |
| 5 | V10 R15 | *Stenotrophomonas* | MT165571 |
| 5 | V10 R17 | *Paenibacillus* | MT165568 |
| 5 | V10 R18 | *Agrobacterium* | MT165578 |
| 5 | V10 R19 | *Bacillus* | MT165550 |
| 5 | V10 R22 | *Pseudomonas* | MT165541 |
| 5 | V10 R23 | *Pseudomonas* | MT165542 |
| 5 | V10 R24 | *Pseudomonas* | MT165543 |
| 5 | H10 R1 | *Stenotrophomonas* | MT165572 |
| 5 | H10 R2 | *Pseudomonas* | MT165544 |
| 5 | H10 R3 | *Pseudomonas* | MT165545 |
| 5 | H10 R7 | *Stenotrophomonas* | MT165573 |
| 5 | H10 R8 | *Pseudomonas* | MT165546 |
| 5 | H10 R10 | *Stenotrophomonas* | MT165574 |
| 5 | H10 R13 | *Achromobacter* | MT165556 |
| 5 | H10 R15 | *Stenotrophomonas* | MT165575 |
| 5 | H10 R21 | *Stenotrophomonas* | MT165576 |
| 5 | H10 R24 | *Stenotrophomonas* | MT165577 |