Supplementary Material

**Supplementary Table S1. Reference database of 59 genera and 177 species of pathogenic bacteria.**

|  |  |  |  |
| --- | --- | --- | --- |
| ***Acholeplasma*** | *Corynebacterium variabile* | *Paenibacillus lautus* | ***Sphingomonas*** |
| *Acholeplasma laidlawii* | ***Cutibacterium*** | ***Pantoea*** | Sphingomonas sp. |
| ***Acidovorax*** | ***Cytophaga*** | *Pantoea agglomerans* | ***Staphylococcus*** |
| ***Acinetobacter*** | *Cytophaga marina* | *Pantoea dispersa* | *Staphylococcus aureus* |
| *Acinetobacter baumannii* | *Cytophaga psychroiphila* | ***Photobacterium*** | *Staphylococcus epidermidis* |
| *Acinetobacter haemolytius* | ***Edwardsiella*** | *Photobacterium damselae* | ***stenotrophomonas*** |
| *Acinetobacter johnsonii* | *Edwardsiella ictaluri* | *Photobacterium ganghwense* | *stenotrophomonas maltophilia* |
| *Acinetobacter junii* | *Edwardsiella tarda，Et* | *Photobacterium jeanii* | *Stenotrophomonas rhizophila* |
| *Acinetobacter rhizosphaerae* | ***Enterobacter*** | *Photobacterium swingsii* | ***Streptococcus*** |
| *Acinetobacter venetianus* | *Enterobacter aerogenes* | ***Propionibacterium*** | *Streptococcus iniae* |
| ***Aeromonas*** | *Enterobacter asburiac* | *Propionibacterium acnes* | *Streptococcus parauberis* |
| *Aeromonas aquariorum* | *Enterobacter cancerogenus* | *Propionibacterium granulosum* | *Streptococcus suis* |
| *Aeromonas caviae* | *Enterobacter cloacae* | ***Proteus*** | ***Vibrio*** |
| *Aeromonas hydrophila* | *Enterobacter hormaechei* | *Proteus mirabilis* | *Vibrio aestuarianus* |
| *Aeromonas hydrophila (chester) Stanier* | *Enterobacter ludwigii* | *Proteus penneri* | *Vibrio alginolyticus* |
| *Aeromonas monassp* | *Enterobacter Sakazakii* | ***Pseudoalteromonas*** | *Vibrio algivorus* |
| *Aeromonas punctata* | ***Enterococcus*** | *Pseudoalteromonas espejiana* | *Vibrio anguillarum* |
| *Aeromonas salmonicida* | *Enterococcus faecalis* | *Pseudoalteromonas nigrifaciens* | *Vibrio azureus* |
| *Aeromonas schubertii* | ***Enterovibrio*** | *Pseudoalteromonas rubra* | *Vibrio brasil* |
| ***Alcaligenes*** | *Enterovibrio norvegicus* | *Pseudoalteromonas tetraodonis* | *Vibrio brasiliensis* |
| *Alcaligenes faecalis* | ***Escherichia-Shigella*** | ***Pseudomonas*** | *Vibrio campbellii* |
| ***Allomonas*** | *Escherichia coli O157:H7* | *Pseudomonas aeruginosa* | *Vibrio chagasii* |
| *Allomonas enterica* | *Escherichia vulneris* | *Pseudomonas alcaligenes* | *Vibrio cholerae* |
| ***Alteromonas*** | ***Exiguobacterium*** | *Pseudomonas anguilliseptica* | *Vibrio coralliilyticus* |
| *Alteromonas mediterranea* | ***Flavobacterium*** | *Pseudomonas fluorescens* | *Vibrio cyclitrophicus* |
| ***Anaerotruncus*** | *Flavobacterium columnare* | *Pseudomonas fragi* | *Vibrio diabolicus* |
| *Anaerotruncus colihominis* | *Flavobacterium gelidilacus* | *Pseudomonas knackmussii* | *Vibrio diazotrophicus*  |
| ***Aquitalea*** | ***Fusobacterium*** | *Pseudomonas mendocina* | *Vibrio europaeus* |
| *Aquitalea magnusonii* | *Fusobacterium equinum* | *Pseudomonas otitidi* | *Vibrio fischer* |
| ***Arcobacter*** | ***Haemophilus*** | *Pseudomonas pseudoaligenes* | *Vibrio fluvialis* |
| *Arcobacter butzleri* | *Haemophilus parahaemolyticus* | *Pseudomonas putida* | *Vibrio fortis* |
| *Arcobacter cryaerophilus* | ***Idiomarina*** | *Pseudomonas stutzeri* | *Vibrio furnissii* |
| ***Bacillus*** | *Idiomarina loihiensis* | *Pseudomonas syringae* | *Vibrio gigantis* |
| *Bacillus anthraci* | ***Klebsiella*** | *Pseudomonas veronii* | *Vibrio harveyi* |
| *Bacillus aquimaris* | *Klebsiella oxytoca* | ***Psychrobacter*** | *Vibrio hepatarius* |
| *Bacillus cereus* | *Klebsiella peneumoniae* | *Psychrobacter faecalis* | *Vibrio hispanicus* |
| *Bacillus cereus.Frankland* | *Klebsiella variicola* | ***Raoultella*** | *Vibrio ichthyoenteri* |
| *Bacillus infantis* | ***Kocuria*** | *Raoultella ornithinolytica* | *Vibrio metschnikovii* |
| *Bacillus oryzaecorticis* | *Kocuria rosea* | ***Rhodobacter*** | *Vibrio mimicus* |
| *Bacillus pumilus* | ***Legionella*** | *Rhodobacter sphaeroides* | *Vibrio mytili* |
| ***Bacteroides*** | *Legionella feeleii* | ***Riemerella*** | *Vibrio natriegens* |
| *Bacteroides caccae* | *Legionella pneumophila* | *Riemerella anatipestifer* | *Vibrio neptunius* |
| *Bacteroides eggerthii* | ***Leptotrichia*** | ***Salmonella***  | *Vibrio nigripulchritudo* |
| *Bacteroides helcogenes* | *Leptotrichia buccalis* | Salmonella sp. | *Vibrio ordalii* |
| ***Brevundimonas*** | ***Lymphocystis*** | *Salmonella enterica* | *Vibrio owensii* |
| *Brevundimonas albigilva* | ***Marinobacter*** | Salmonella enterica subsp. | *Vibrio pacinii* |
| *Brevundimonas diminuta* | *Marinobacter hydrocarbonoclasticus* | ***Serratia*** | *Vibrio parahaemolyticus* |
| *Brevundimonas vesicularis* | ***Marinobacterium*** | *Serratia liquefaciens*  | *Vibrio parahaemolyticus causing AHPND* |
| ***Citrobacter*** | *Marinobacterium stanieri* | *Serratia marcescens* | *Vibrio ponticus* |
| *Citrobacter freundii* | ***Marinomonas*** | ***Shewanella*** | *Vibrio rotiferianus* |
| *Citrobacter murliniae* | *Marinomonas basaltis* | *Shewanella baltica* | *Vibrio shilonii* |
| ***Clostridium*** | *Marinomonas rhizomae*  | *Shewanella colwelliana* | *Vibrio sinaloensis* |
| *Clostridium hiranonis* | ***Morganella*** | *Shewanella haliotis* | *Vibrio splendidus* |
| *Clostridium perfringens* | *Morganella morganii* | *Shewanella marisflav* | *Vibrio tasmaniensis* |
| *Clostridium ramosum* | ***Mycobacterium*** | *Shewanella marisflavi* | *Vibrio tubiashii* |
| *Clostridium subterminale* | *Mycobacterium fortuitum* | *Shewanella putrefaciens* | *Vibrio vulnificus* |
| ***Comamonas*** | ***Ochrobactrum*** | *Shewanella xiamenensis* | *Vibrio xiamenensis* |
| *Comamonas testosteroni* | *Ochrobactrum intermedium* | ***Shigella*** | *Vibrio splendidus* |
| ***Corynebacterium*** | ***Paenibacillus*** | Shigella sp. | *Vibrio.mimicus* |

**Supplementary Table S2.** **qPCR target genes, primer sequences and reaction conditions**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Organism** | **Target genes** | **Primers** | **5′-3′sequences** | **Target fragment length (base pairs)** | **Reaction conditions (all start with 1 cycle at 95°C for 30sec and end up with a melting curve assay from 60 to 95°C with an increment of 0.5°C for 5 sec. )** | **References** |
| *E.coli* | *uidA* gene | UAL | TGGTAATTACCGACGAAAACGGC | 212 | 45 cycles: 95°C, 5sec; 62°C, 30sec | (Maheux et al., 2009) |
| UAR |  ACGCGTGGTTACAGTCTTGCG |
| *Pseudomonas aeruginosa* | oaa gene | PA431CF | CTGGGTCGAAAGGTGGTTGTTATC | 232 | 45cycles:95°C,10sec;63°C,15sec;72°C,30sec | (Choi et al., 2013) |
| PA431CR | GCGGCTGGTGCGGCTGAGTC |
| *Vibrio alginolyticus* | *fliC* gene | *fliC* F | TCCCACAAGGACGCCATAAA | 192 | 45cycles:95°C,10sec;95°C, 5sec; 60°C, 20sec | (ZHONG et al.,2016) |
| *fliC* R | CTCCGCACGACTGCCATCTA |
| *Vibrio.spp* | 16S rRNA gene | Vib1-f | GGCGTAAAGCGCATGCAGGT | 114 | 40cycles: 95°C,15sec; 60°C, 60sec | (Thompson et al., 2004; Vezzulli et al., 2012) |
| Vib2-r | GAAATTCTACCCCCCTCTACAG |
| *Vibrio parahaemolyticus* | *trh* gene | *trh* forward | TTGCTTTCAGTTTGCTATTGGCT | 273 | 45cycles: 95°C,5sec;59°C, 45sec | (Nordstrom et al., 2007) |
| *trh* reverse | TGTTTACCGTCATATAGGCGCTT |
| *trh* probe | AGAAATACAACAATCAAAACTGA |

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