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| --- | --- | --- | --- | --- |
| **Clade** | **Species** | **Accession number**  **(SSU)** | **Origin** | **Publication** |
| I | *E. sinicus* | FJ423448 | Qingdao, China | Jiang et al., 2010a |
| *E. petzi* | KJ434104 | Arctic | Di Giuseppe et al., 2014 |
| KJ434106 | Antarctic |
| *E. huizhouensis* | MW164888 | Huizhou, China | Lian et al., 2021 |
| II | *E. warreni* | MT742131 | Punta Arenas, Chile | Valbonesi et al., 2021 |
| *E. parabalteatus* | KX516723 | Zhanjiang, China | Zhao et al., 2018 |
| FJ346568 | Qingdao, China | Yi et al., 2009 |
| *E. weissei* | MN593323 | Qingdao, China | Lian et al., 2020 |
| *E. dammamensis* | JX185743 | Arabian Gulf, Saudi Arabia | Chen et al., 2013 |
| III  III | *E. elegans* | DQ309868 | Mariager Fjord, Denmark | Julian Schwarz et al., 2007 |
| *E. wuhenensis* | MH795291 | Wuhan, China | Lian et al., 2019 |
| *E. dominicanus* | MN757874 | North Atlantic | Živaljić et al., 2020 |
| *E. estuarinus* | MF445655 | Guangzhou, China | Yan et al., 2018 |
| *E. curdsi* | KX819312 | Agrigento, Italy | Syberg-Olsen et al., 2016 |
| KX819313 | Sredny Island, Russia |
| KY855580 | Andhra Pradesh, India | - |
| *E. nobilii* | JQ003922 | Siorapaluk, Greenland | Di Giuseppe et al., 2013 |
| KP843612 | Barrow, Alaska USA | Di Giuseppe et al., 2015 |
| *E. shii* | MW164887 | Huizhou, China | Lian et al., 2021 |
| *E. raikovi* | FJ423447 | Qingdao, China | Jiang et al., 2010b |
| KX516720 | Zhanjiang, China | Zhao et al., 2018 |
| *E. bergeri* | MN593322 | Huizhou, China | Lian et al., 2020 |
| *E. qatarensis* | KU555390 | inland Sea Khor al Adaid, Qatar | Fotedar et al., 2019 |
| IV  IV  IV | *E. parawoodruffi* | FJ998025 | Qingdao, China | - |
| AF452708 |
| *E. woodruffi* | KX516657 | Shenzhen, China | Zhao et al., 2018 |
| KY855578 | Andhra Pradesh, India | - |
| LT623906 | Italy | - |
| AF452710 | Qingdao, China | - |
| JQ801445 | Putian, China | Dai et al., 2013 |
| JQ801446 |
| EF193244 | Comacchio, Italy | Fokin et al., 2008 |
| *E. aediculatus* | FR873712 | Pisa, Italy | Vannini et al., 2012 |
| FR873713 | Delhi (India) |
| AJ305253 | Stirone river, Italy | Petroni et al., 2002 |
| *E. paramieti* | OM065848 | Shanghai, China | Han et al., 2022 |
| *E. amieti* | KJ524911 | Shanghai, China | Liu et al., 2015 |
| *E. eurystomus* | EF193250 | Pisa, Italy | Fokin et al., 2008 |
| FR873716 | Vannini et al., 2012 |
| *E. patella* | EF094964 | Hakusui, Japan | Vallesi et al., 2008 |
| *E.octocarinatus* | MK411264 | Oaxaca, mexico | Méndez-Sánchez et al., 2020 |
| EF094962 | Pisa, Italy | Vallesi A. *et al*., 2008 |
| AJ310489 | Mu¨ nster, Germany | Bernhard et al., 2001 |
| *E. daidaleos* | EF690811 | Kaiserslautern, Germany | - |
| FR873718 | Pisa, Italy | Vannini et al., 2012 |
| KF887346 | Dorset, UK | - |
| AM930379 | Argyll, UK | Achilles-Day et al., 2008 |
| *E. platystoma* | MF928801 | Shenzhen, China | Lian et al., 2018 |
| MF445654 | Huizhou, China | Yan et al., 2018 |
| *E. neapolitanus* | FJ998024 | Huizhou, China | Liu et al., 2020 |
| KX516656 | Shenzhen, China | Zhao et al., 2018 |
| *E. harpa* | KX516655 | Shenzhen, China | Zhao et al., 2018 |
| HM140408 | Ulsan, Korea | - |
| AJ305252 | Bornholm, Baltic Sea | Petroni et al., 2002 |
| AJ811015 | Pisa, Italy | Vannini et al., 2005 |
| AJ811016 | Puglia, Italy |
| *E. rariseta* | MK050525 | Marine sediment, Korea | - |
| FJ423449 | Qingdao, China | Jiang et al., 2010a |
| AJ305248 | Garachico, Spain | Petroni et al., 2002 |
| V  V  V | *E. muscicola* | AJ305254 | Bagnone, Italy | Petroni et al., 2002 |
| MH795290 | Wuhan, China | Lian et al., 2019 |
| *E. lynni* | MG827339 | Delhi, India | Abraham et al., 2021 |
| *E. muscorum* | DQ661046 | Baltimore, USA | - |
| HM140407 | Ulsan, Korea | - |
| *E. novemcarinatus* | HM140402 | Ulsan, Korea | - |
| *E. encysticus* | KY855579 | Andhra Pradesh, India | - |
| KX516673 | Shenzhen, China | Zhao et al., 2018 |
| MK026950 | Dokdo, Korea | - |
| LN864512 | Saquarema, Brazil | Senra et al., 2016 |
| LT628496 | Andhra Pradesh, India | - |
| KY922820 | Wuhan, China | - |
| EF535728 | Shanghai, China | - |
| FJ346569 | Qingdao, China | Yi et al., 2009 |
| *E. foissneri* | MT742130 | Puerto Natales, Chile | Valbonesi et al., 2021 |
| *E. chongmingensis* | OM065849 | Shanghai, China | Han et al., 2022 |
| *E. indica* | MN038061 | Delhi, India | Abraham et al., 2021 |
| *E. euryhalinus* | MG994991 | Delhi, India | - |
| JF903799 | Andhra Pradesh, India | - |
| KP297363 | Pisa, Italy | - |
| KP297367 |
| KP297368 |
| *E. magnicirratus* | KX516685 | Shantou, China | Zhao et al., 2018 |
| AJ549210 | Campionna, Italy | Petroni et al., 2002 |
| AJ305250 | Caribbean Sea, Columbia | Petroni et al., 200 |
| *E.* cf*. antarcticus* | FJ998023 | Huizhou, China | Liu et al., 2020 |
| KX516668 | Shenzhen, China | Zhao et al., 2018 |
| *E. trisulcatus* | EF690810 | Kaiserslautern, Germany | - |
| *E. balteatus* | JX185744 | Arabian Gulf, Saudi Arabia | Chen et al., 2013 |
| *E. orientalis* | KX516666 | Zhanjiang, China | Zhao et al., 2018 |
| FJ875138 | Qingdao, China | Jiang et al., 2010b |
| *E. plicatum* | EF094966 | Christchurch, New Zealand | Vallesi et al., 2008 |
| *E. enigma* | LT732572 | Victoria, BC, Canada | Boscaro et al., 2019 |
| *E. alatus* | KJ434102 | Pisa, Italy | Di Giuseppe et al., 2014 |
| *E. bisulcatus* | EF094965 | Christchurch, New Zealand | Vallesi et al., 2008 |
| *E. shini* | MN593321 | Huizhou, China | Lian et al., 2020 |
| *E. focardii* | EF094960 | Antarctica | Vallesi et al., 2008 |
| *E. quinquecarinatus* | JX437136 | Mughsayl, Oman | Guella et al., 2012 |
| *E. parkei* | AJ305247 | Venezuela | Petroni et al., 2002 |
| *E. charon* | KX516686 | Qingdao, China | Zhao et al., 2018 |
| JF694043 | Huang et al., 2012 |
| KX516688 | Zhao et al., 2018 |
| FJ870078 | - |
| KX516691 | Zhao et al., 2018 |
| FJ870080 | - |
| KX516698 | Hongkong, China | Zhao et al., 2018 |
| VI  VI | *E. minuta* | KX516699 | Qingdao, China | Zhao et al., 2018 |
| EF094958 | Shetland, UK | Vallesi et al., 2008 |
| AJ305244 | Maratea, Italy | Petroni et al., 2002 |
| GU953668 | Incheon, Korea | Park et al., 2010 |
| *E. cristatus* | GU953667 | Incheon, Korea | Park et al., 2010 |
| *E. vannus* | EF094956 | Hurghada, Egypt | Vallesi et al., 2008 |
| AY361854 | Pisa, Italy | - |
| MG603631 | Incheon, Korea | Park et al., 2019 |
| KY922821 | Wuhan, China | Yuan et al., 2018 |
| AY004772 | Qingdao, China | Chen et al., 2002 |
| KX516701 | Shenzhen, China | Zhao et al., 2018 |
| *E. crasssus* | KX516710 | Shenzhen, China | Zhao et al., 2018 |
| EF094954 | Portugal | Vallesi et al., 2008 |
| HQ413693 | Incheon, Korea | Kim et al., 2011 |
| AJ305239 | Setubal, Portugal | Petroni et al., 2002 |
| AY361863 | Pisa, Italy | - |
| *E. japonicum* | ON387646 | The peter Great Gulf, japan | Mikhail et al., 2022 |

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