APÉNDICE DIGITAL 1

Origen, fuente del aislamiento y números de accesiones Genbank de secuencias nucleotídicas utilizadas para la elaboración del árbol concatenado de posicionamiento taxonómico de bacterias luminiscentes marinas

DIGITAL APPENDIX 1

Origin and source of the isolates and Genbank accession number of nucleotide sequences used for the elaboration of the taxonomic positioning concatenated tree of marine luminescent bacteria

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Nombre científico** | **Origen/fuente** | **16S ARNr** | **gyrB** | **pyrH** | **Referencia** |
| *Vibrio harveyi* CBM-784 | Cuba/agua marina | KU761562 | KU902454 | KU868079 | Delgado et al., 2017 |
| *Vibrio sagamiensis* | Japón/agua marina | AB428910 | AB428911 | AB428913 | Yoshizawa et al., 2010 |
| *Vibrio owensii* | India/coral  Australia/langosta Brasil/coral | GQ281106 | AB609127 | KJ154040 | Ravindran et al., 2013; Yoshizawa et al., 2012; Tonon et al., 2015 |
| *Vibrio alginolyticus* | ATCC 17749  China/--  CECT 521T | NR044825 | EF579672 | FM202578 | Dorsch et al., 1992; Luo & Hu, 2008; Pascual et al., 2010 |
| *Vibrio campbellii* | ATCC 25920  --/--  ATCC 25920 | NR029222 | EU130500 | EF596643 | Dorsch & Lane, 1992; Figge et al., 2011; Thompson et al., 2007 |
| *Vibrio rotiferianus* | China/intestino de molusco  --/--  --/-- | HE584776 | EU118210 | FM202572 | Jiang et al., 2013; Urbanczyk et al., 2008; Pascual et al., 2010 |
| *Vibrio harveyi* 1 | India/pargo rojo riñón  --/tiburón  --/-- | KC345010 | GQ232761 | EU130516 | Sharma et al., 2014, Zhang et al., 2011; Figge et al., 2011 |
| *Vibrio harveyi* 2 | --/estrella de mar  ATCC 14126T  --/-- | HQ449971 | DQ648280 | EF596364 | Rivera-Posada et al., 2011; Dunlap et al., 2007; Thompson et al., 2007 |
| *Vibrio harveyi* 3 | --/--  ATCC 35084  --/pez | MK391531 | EU130501 | JF739412 | Shen et al., 2017, Figge et al., 2011, Gomez-Gil et al., 2004 |
| *Vibrio harveyi* 4 | --/molusco  --/--  China/intestino de pez | KC455398 | DQ499007 | KC954173 | Chiu et al., 2007 |
| *Vibrio harveyi 5* | --/pez enfermo en estanque  --/pez enfermo en estanque  Francia/-- | HM236045 | HM224411 | JX401585 | Zhang et al., 2011; Tall et al., 2013 |
| *Photobacterium angustum* | ATCC 33975  ATCC 25915  ATCC 25915 | AY900628 | AF136383 | EF380235 | Ast & Dunlap, 2005; Urbanczyk et al., 2007 |
| *Photobacterium phosphoreum* | --/piel de salmón  ATCC 11040  --/-- | AY888019 | AY455875 | EF380239 | Ast & Dunlap, 2004; Ast & Dunlap, 2005;  Urbanczyk et al., 2007. |
| *Photobacterium leiognathi* | Taiwán/agua marina  --/órgano luminoso de pez  ATCC 25521 | KJ174504 | DQ648320 | EF380238 | Dunlap et al., 2007; Urbanczyk et al., 2007 |
| *Shewanella hanedai* | ATCC 33224  ATCC 35256 | U91589 | AF005693 | ------- | DeLong et al., 1997; Venkateswaran et al., 1999 |

ATCC: Número de Catalogo de la *American Type Culture Collection* (www.atcc.org)

CECT: Colección Española de Cultivos Tipo ([www.uv.es/uvweb/coleccion-espanola-cultivos-tipo/es/cect/catalogo-cepas/](http://www.uv.es/uvweb/coleccion-espanola-cultivos-tipo/es/cect/catalogo-cepas/))

1 El origen y la fuente de las cepas está asociado con las secuencias genéticas parciales depositadas en el genbank según el gen 16S ARNr, gyrB y pyrH, respectivamente.

ATCC: American Type Culture Collection Catalog Number (www.atcc.org)

CECT: Spanish Type Culture Collection (www.uv.es/uvweb/coleccion-espanola-cultivos-tipo/es/cect/catalogo-cepas/)

1 The origin and source of the strains is associated with the partial genetic sequences deposited in the genbank according to the 16S rRNA, gyrB and pyrH gene, respectively.

APÉNDICE DIGITAL 2

Características fenotípicas evaluadas en los cultivos de CBM-976, CBM-992 y datos de cepas de referencia de estudios previos\*

DIGITAL APPENDIX 2

Phenotypic characteristics evaluated on CBM-976, CBM-992 cultures and reference strain data from previous studies\*

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Característica | CBM-976 | CBM-992 | CBM-784\*\* | P.l | P.p | V.h | V.f | V.l | V.s | S.h | S.w |
| Oxidasa | + | + | + | + | + | + | + | + | + | + | + |
| Catalasa | + | + | + | - | + | + | + | + | + | + | + |
| Motilidad | + | + | + | + | + | + | + | + | + | + | + |
| Reducción de nitrato | + | + | + | + | + | + | + | + | + | + | + |
| Producción de indol | - | - | - | - | - | + | - | - | + | - | - |
| Test de O/F | F | F | F | F | F | F | F | F | F | O | O |
| ADH | - | - | - | + | + | - | - | - | + | - | - |
| LDC | + | + | + | - | - | + | + | + | - | - | - |
| ODC | - | - | - | - | - | + | - | - | - | - | - |
| ONPG | + | + | - | + | + | + | + | - | + | + | + |
| Utilización de citrato | - | - | - | - | - | - | - | - | + | - | - |
| Ureasa | - | - | - | - | - | - | + | - | - | - | - |
| Gelatinasa | + | + | + | - | - | + | - | - | + | + | + |
| Esculina | + | + | + | - | - | + | + | + | + | - | - |
| Amilasa | + | + | + | - | - | + | + | + | + | - | + |
| Lipasa | + | + | + | - | - | + | + | + | + | + | - |
| H2S | - | - | - | - | - | - | - | - | - | - | - |
| Voges- Proskauer | - | - | - | + | + | - | - | - | - | - | - |
| Crecimiento a temperatura: |  |  |  |  |  |  |  |  |  |  |  |
| 4 °C | - | - | - | - | + | - | - | + | + | + | + |
| 15 °C | + | + | + | + | + | + | + | + | + | + | + |
| 30 °C | + | + | + | + | + | + | + | - | + | + | + |
| 35 °C | + | + | + | + | - | + | - | - | - | - | - |
| 40 °C | + | + | + | + | - | - | - | - | - | - | - |
| Crecimiento a salinidad: |  |  |  |  |  |  |  |  |  |  |  |
| 0 % | - | - | - | - | - | - | - | - | - | - | - |
| 1 % | + | + | + | + | + | + | + | + | + | + | + |
| 3 % | + | + | + | + | + | + | + | + | + | + | + |
| 6 % | + | + | + | + | + | + | + | + | + | - | - |

P.l.: *Photobacterium leiognathi* ATCC 25521; P.p.: *Photobacterium phosphoreum* ATCC 11040; V.h.: *Vibrio harveyi* ATCC 14126; V.f.: *Vibrio fischeri* ATCC 7744; V.l.: *Vibrio logei* ATCC 29985; V.s.: *Vibrio splendidus* biovar I ATCC 33125; S.h.: *Shewanella hanedai* ATCC 33224; S.w.: *Shewanella woodyi* ATCC 51908; +: positivo; –: negativo; F: fermentativo; O: oxidativo; ADH: arginina dihidrolasa; LDC: lisina descarboxilasa; ODC: ornithina descarboxilasa; ONPG: ortho-nitrophenyl-β D-galactopiranosa.

P.l.: *Photobacterium leiognathi* ATCC 25521; P.p.: *Photobacterium phosphoreum* ATCC 11040; V.h.: *Vibrio harveyi* ATCC 14126; V.f.: *Vibrio fischeri* ATCC 7744; V.l.: *Vibrio logei* ATCC 29985; V.s.: *Vibrio splendidus* biovar I ATCC 33125; S.h. : *Shewanella hanedai* ATCC 33224; S.w.: *Shewanella woodyi* ATCC 51908; +: positive; -: negative; F: fermentative; O: oxidative; ADH: arginine dihydrolase; LDC: lysine decarboxylase; ODC: ornithine decarboxylase; ONPG: ortho-nitrophenyl-β D-galactopyranose.

\*(Makemson et al., 1997; Farto et al., 1999; Venkateswaran et al., 1999; Lunder et al., 2000; López-Caballero et al., 2002; Satomi et al., 2003; Chiu et al., 2007; Bagordo et al., 2012).

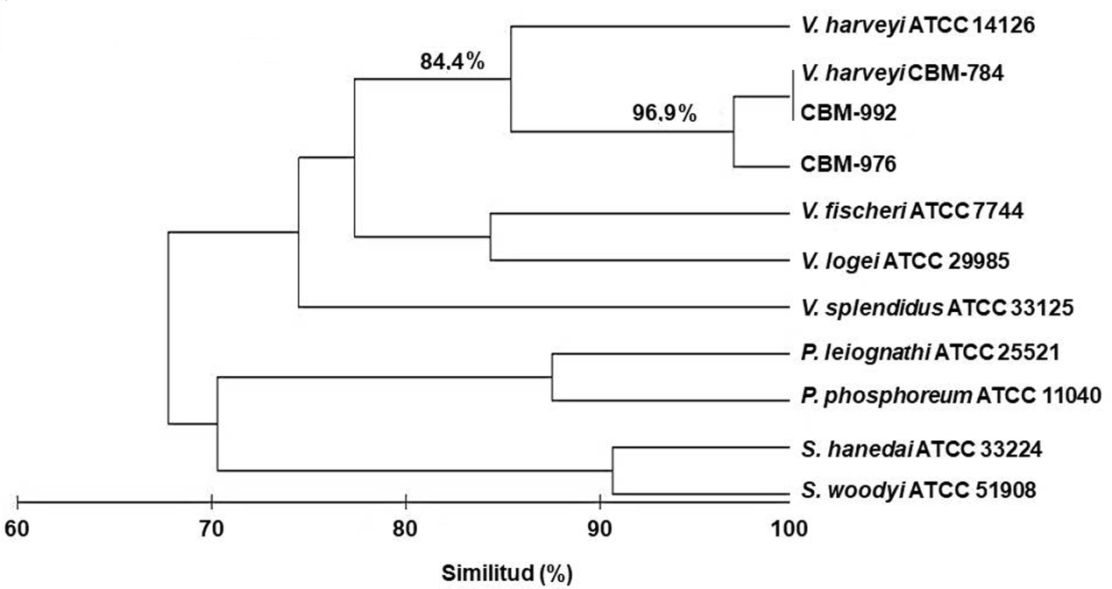
\*\* *V. harveyi* CBM-784 (Delgado et al., 2017).

APÉNDICE DIGITAL 3

Dendograma de similitud simplificado que muestra las relaciones fenotípicas entre los cultivos aislados (CBM-976 y CBM-992) y cultivos de bacterias luminiscentes de referencia (Índice de similitud de Brays-Curtis)

DIGITAL APPENDIX 3

Simplified similarity dendogram showing the phenotypic relationships between isolated cultures (CBM-976 and CBM-992) and reference luminescent bacteria cultures (Brays-Curtis similarity index)



APÉNDICE DIGITAL 4

Influencia del medio de cultivo en los valores de µ y la luminiscencia máxima de los aislados, cultivados a 28 °C, pH 7 y 160 r·min-1

DIGITAL APPENDIX 4

Influence of culture medium on µ values and maximum luminescence of the isolates, grown at 28 °C, pH 7 and 160 r.min-1

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Medio de Cultivo** | **CBM-976** | | **CBM-992** | |
| **µ**  **(h-1)** | **Lum máx\***  **(url·ml-1)** | **µ**  **(h-1)** | **Lum máx\***  **(url·ml-1)** |
| Boss | 0.46 a ± 0.02 | 6.71 a ± 0.82 | 0.51 b ± 0.01 | 5.40 a ± 2.32 |
| Chalk | 0.44 a ± 0.04 | 56.63 b ± 5.53 | 0.37 a ± 0.06 | 64.66 b ± 8.04 |
| LM | 0.50 a ± 0.01 | 111.86 c ± 10.58 | 0.57 b ± 0.03 | 114.51 c ± 10.07 |
| Zobell | 0.49 a ± 0.02 | 128.67 c ± 10.34 | 0.63 b ± 0.01 | 133.94 c ± 11.57 |

url·ml-1 (unidades relativas de luz por ml).

\* Los valores de luminiscencia máxima (Lum máx) se corresponden con las 6 h de crecimiento.

url-ml-1 (relative units of light per ml).

\* The maximum luminescence values (max Lum) correspond to the 6 h of growth.