

Tenacibaculum bernardetii: nueva especie de *Tenacibaculum* aislada a partir de salmón Atlántico cultivado en Chile

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Avendaño-Herrera R, Toranzo AE & Magariños B (2006). Tenacibaculosis infection in marine fish caused by *Tenacibaculum maritimum*: a review. *Dis Aquatic Org* 71: 255-266.

Avendaño-Herrera R, Irgang R, Sandoval C, Moreno-Lira P, Houel A, Duchaud E, Poblete-Morales M & Ilardi P (2016). Isolation, characterization and virulence potential of *Tenacibaculum dicentrarchi* in salmonid cultures in Chile. *Transb Emerg Dis* 63:121-126.

Avendaño-Herrera R, Olsen AB, Saldarriaga-Córdoba M, Colquhoun DJ, Reyes V, Rivera-Bohle J, Duchaud E & Irgang R (2022a). Isolation, identification, virulence potential and genomic features of *Tenacibaculum piscium* isolates recovered from Chilean salmonids. *Transb Emerg Dis* 69(5): e3305-e3315

Avendaño-Herrera R, Saldarriaga-Córdoba M, Irgang R (2022b). Draft genome sequence of *Tenacibaculum ovolyticum* To-7Br, recovered from a farmed Atlantic salmon (*Salmo salar*). *Microbiol Res Announ* 11(7):e0025422.

Avendaño-Herrera R, Saldarriaga-Córdoba M, Irgang R (2023). *Tenacibaculum bernardetii* sp. nov., isolated from Atlantic salmon (*Salmo salar*) cultured in Chile. *Int J Syst Evol Microbiol* (DOI: 10.1099/ijsem.0.006102).

Bridel S, Olsen AB, Nilsen H, Bernardet JF, Achaz G, Avendaño-Herrera R, Duchaud E (2018). Comparative genomics of *Tenacibaculum dicentrarchi* and "*Tenacibaculum finnmarkense*" highlights intricate evolution of fish-pathogenic species. *Gen Biol Evol* 10:452-457.

Chun J, Oren A, Ventosa A, Christensen H, Arahal DR, y col. (2018). Proposed minimal standards for the use of genome data for the taxonomy of prokaryotes. *Int J Syst Evol Microbiol* 68:461-466.

Olsen AB, Nilsen H, Sandlund N, Mikkelsen H, Sørum H & Colquhoun DJ (2011). *Tenacibaculum* sp. associated with winter ulcers in seareared Atlantic salmon *Salmo salar*. *Dis Aquatic Org* 94:189-199.

Olsen AB, Powell J, Siah A, Colquhoun DJ & Avendaño-Herrera R (2019). Tenacibaculosis. En: Brun E, Rodríguez JF, Macdonald A, editors. Technical report: an overview of emerging diseases in salmonid farming industry. Guelph: Aqua Global technical Services Elanco Canada Ltd., Research Park Center. 43-51 p.

Mabrok M, Algammal AM, Sivaramasamy E, Hetta HF, Atwah B, Alghamdi S, Fawsy A, Avendaño-Herrera R, Rodkhum C (2023) Tenacibaculosis caused by *Tenacibaculum maritimum*: Updated knowledge of this marine bacterial fish pathogen. *Front Cell Infect Microbiol* 12:1068000.

Meier-Kolthoff JP, Auch AF, Klenk H-P, Göker M. (2013). Genome sequence-based species delimitation with confidence intervals and improved distance functions. *BMC Bioinformatics* 14:60.

Nowlan JP, Lumsden JS & Russell S (2021). Quantitative PCR for *Tenacibaculum dicentrarchi* and *T. finnmarkense*. *J Fish Dis* 44:655-659.

Småge, S. B., Brevik, Ø. J., Duesund, H., Ottem, K. F., Watanabe, K., & Nylund, A. (2016). *Tenacibaculum finnmarkense* sp. nov., a fish pathogenic bacterium of the family Flavobacteriaceae isolated from Atlantic salmon. *Antonie Van Leeuwenhoek*, 109:273-285.

Suzuki M (2015). Genus *Tenacibaculum*. En: *Bergey's Manual of Systematics of Archae and Bacteria*, online. John Wiley & Sons, Inc. in association with Bergey's Manual Trust.

Suzuki M, Nakagawa Y, Harayama S & Yamamoto S (2001) Phylogenetic analysis and taxonomic study of marine Cytophaga-like bacteria: proposal for *Tenacibaculum* gen. nov. with *Tenacibaculum maritimum* comb. nov. and *Tenacibaculum ovolyticum* comb. nov., and description of *Tenacibaculum mesophilum* sp. nov. and *Tenacibaculum amyolyticum* sp. nov. *Int J Syst Evol Microbiol* 51: 1639-1652

Valdés S, Irgang R, Barros MC, Ilardi P, Saldarriaga-Córdoba M, Rivera-Bohle J, Madrid E, Gajardo-Córdova J & Avendaño-Herrera R (2021). First report and characterization of *Tenacibaculum maritimum* isolates recovered from rainbow trout (*Oncorhynchus mykiss*) farmed in Chile. *J Fish Dis* 44: 1481-1490.

Wakabayashi H, Hikida M & Masumura K (1986). *Flexibacter maritimus* sp. nov., a pathogen of marine fishes. *Int J Syst Evol Microbiol* 36: 396-398.

Wilson, Douglas M & Dunn V (2019). First identification in Tasmania of fish pathogens *Tenacibaculum dicentrarchi* and *T. soleae* and multiplex PCR for these organisms and *T. maritimum*. *Dis Aquatic Org* 136:219-226.