Phylogenetic analysis of nitratireductor sp. YT3402 isolated from the Yerliköy Saltern, İskilip-Çorum

Demet Tatar
Hitit University, Turkey

Statement of the Problem: The genus nitratireductor was first discovered by Labbé et al. (2004) to accommodate species of the family Phyllobacteriaceae of the Alphaproteobacteria that were Gram-negative, oxidase- and catalase-positive and capable of reducing nitrate to nitrite (Yu et al., 2016). The aim of this study is to carry out phylogenetic analysis of Nitratireductor sp. YT3402 isolated from the Yerliköy Saltern located near Çorum province.

Methodology & Theoretical Orientation: Nitratireductor sp. YT3402, was picked after 4 weeks of incubation at 28˚C on Starch-Casein Agar containing 3 % (w/v) NaCl. Genomic DNA isolation was performed by Pitcher et al. (1989). The 16S rRNA gene was amplified by PCR using universal primers 27f and 1525r. Phylogenetic analyses were performed by using three different algorithms with MEGA 7 software.

Findings: YT3402 shared the highest 16S rRNA gene sequence similarity with Nitratireductor pacificus pht-3BT (97.23 %).

Conclusion & Significance: When the numerical and molecular data analysis is complete, Nitratireductor sp. YT3402 strain is likely to be a novel species belonging to the genus Nitratireductor.

Recent Publications

1. Lai Q, Yu Z, Wang J, Zhong H, Sun F, Wang L, Wang B, Shao Z (2011) Nitratireductor pacificus sp. nov., isolated from a pyrene-degrading consortium. Int. J. Syst. Evol. Microbiol. 61:1386-91.
2. Lai Q, Yu Z, Yuan J, Sun F, Shao Z (2011) Nitratireductor indicus sp. nov., isolated from deep-sea water. Int. J. Syst. Evol. Microbiol. 61: 295-8.
3. Jang GI, Hwang CY, Cho BC (2011) Nitratireductor aquimarinus sp. nov., isolated from a culture of the diatom Skeletonema costatum, and emended description of the genus Nitratireductor. Int. J. Syst. Evol. Microbiol. 61:2676-81.
4. Manickam N, Pareek S, Kaur I, Singh NK, Mayilraj S (2012) Nitratireductor lucknowense sp. nov., a novel bacterium isolated from a pesticide contaminated soil. Antonie Van Leeuwenhoek 101:125-31.
5. Pan XC, Geng S, Mei R, Wang YN, Cai H, Liu XY, Tang YQ, Nie Y, Ye SY, Wu XL (2014) Nitratireductor shengliensis sp. nov., Isolated from an Oil-Polluted Saline Soil. Curr. Microbiol. 69: 561-6.

Biography

Demet Tatar completed her Ph.D. in 2014 at Ondokuz Mayıs University and She has been teaching staff at Hitit University since 2015. She has published 14 papers in reputed journal. She works in the field of molecular bacterial systematics.

demettatar@hitit.edu.tr

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