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Pubblicazioni:

John, M.S., Nagoth, J.A., Ramasamy, K.P., Ballarini, P., Mozzicafreddo, M., Mancini, A., Telatin, A., Liò, P., Giuli, G., Natalello, A., Miceli, C., Pucciarelli, S. Horizontal gene transfer and silver nanoparticles production in a new *Marinomonas* strain isolated from the Antarctic psychrophilic ciliate *Euplotes focardii*. (2020) *Scientific Reports*, 10 (1), art. no. 10218, .

Vallesi, A., Pucciarelli, S., Buonanno, F., Fontana, A., Mangiagalli, M. Bioactive molecules from protists: Perspectives in biotechnology (2020) *European Journal of Protistology*, 75, art. no. 125720, .

Mancini, A., Pucciarelli, S. Antibiotic activity of the antioxidant drink effective Microorganism-X (EM-X) extracts against common nosocomial pathogens: an in vitro study (2020) *Natural Product Research*, 34 (11), pp. 1575-1580.

Faktorová, D., Nisbet, R.E.R., Fernández Robledo, J.A., Casacuberta, E., Sudek, L., Allen, A.E., Ares, M., Jr, Aresté, C., Balestreri, C., Barbrook, A.C., Beardslee, P., Bender, S., Booth, D.S., Bouget, F.-Y., Bowler, C., Breglia, S.A., Brownlee, C., Burger, G., Cerutti, H., Cesaroni, R., Chiurillo, M.A., Clemente, T., Coles, D.B., Collier, J.L., Cooney, E.C., Coyne, K., Docampo, R., Dupont, C.L., Edgcomb, V., Einarsson, E., Elustondo, P.A., Federici, F., Freire-Beneitez, V., Freyria, N.J., Fukuda, K., García, P.A., Girguis, P.R., Gomia, F., Gornik, S.G., Guo, J., Hampl, V., Hanawa, Y., Haro-Contreras, E.R., Hehenberger, E., Highfield, A., Hirakawa, Y., Hopes, A., Howe, C.J., Hu, I., Ibañez, J., Irwin, N.A.T., Ishii, Y., Janowicz, N.E., Jones, A.C., Kachale, A., Fujimura-Kamada, K., Kaur, B., Kaye, J.Z., Kazana, E., Keeling, P.J., King, N., Klobutcher, L.A., Lander, N., Lassadi, I., Li, Z., Lin, S., Lozano, J.-C., Luan, F., Maruyama, S., Matute, T., Miceli, C., Minagawa, J., Moosburner, M., Najle, S.R., Nanjappa, D., Nimmo, I.C., Noble, L., Novák Vanclová, A.M.G., Nowacki, M., Nuñez, I., Pain, A., Piersanti, A., Pucciarelli, S., et al. Publisher Correction: Genetic tool development in marine protists: emerging model organisms for experimental cell biology (*Nature Methods*, (2020), 17, 5, (481-494), 10.1038/s41592-020-0796-x) (2020) *Nature Methods*, 17 (5), p. 551.

John, M.S., Nagoth, J.A., Ramasamy, K.P., Mancini, A., Giuli, G., Natalello, A., Ballarini, P., Miceli, C., Pucciarelli, S. Synthesis of bioactive silver nanoparticles by a *Pseudomonas* strain associated with the antarctic psychrophilic protozoan *Euplotes focardii* (2020) *Marine Drugs*, 18 (1), art. no. 38, .

Mancini, A., Pucciarelli, S., Lombardi, F.E., Barocci, S., Pauri, P., Lodolini, S. Differences between Community - and Hospital - acquired urinary tract infections in a tertiary care hospital (2020) *The new microbiologica*, 43 (1), pp. 17-21.

Mangiagalli, M., Lapi, M., Maione, S., Orlando, M., Brocca, S., Pesce, A., Barbiroli, A., Camilloni, C., Pucciarelli, S., Lotti, M., Nardini, M. The co-existence of cold activity and thermal stability in an Antarctic GH42 β -galactosidase relies on its hexameric quaternary arrangement (2020) FEBS Journal, .

Ramasamy, K.P., Telatin, A., Mozzicafreddo, M., Miceli, C., Pucciarelli, S. Draft genome sequence of a new *Pseudomonas* sp. Strain, ef1, Associated with the Psychrophilic Antarctic Ciliate *Euplotes focardii* (2019) Microbiology Resource Announcements, 8 (41), art. no. e00867-19, .

Petchidurai, G., Nagoth, J.A., John, M.S., Sahayaraj, K., Murugesan, N., Pucciarelli, S. Standardization and quantification of total tannins, condensed tannin and soluble phlorotannins extracted from thirty-two drifted coastal macroalgae using high performance liquid chromatography (2019) Bioresource Technology Reports, 7, art. no. 100273, .

Syed, T., Batool, U., Aslam, M., Noreen, Z., Farheen, I., Gondal, A., Usman Shah, S.M., Pucciarelli, S., Bokhari, H. Bioremediation and decontamination potential of flagellate *Poteriospumella* sp. (2019) Bioremediation Journal, 23 (3), pp. 142-153.

Pischedda, A., Ramasamy, K.P., Mangiagalli, M., Chiappori, F., Milanese, L., Miceli, C., Pucciarelli, S., Lotti, M. Antarctic marine ciliates under stress: superoxide dismutases from the psychrophilic *Euplotes focardii* are cold-active yet heat tolerant enzymes (2018) Scientific Reports, 8 (1), art. no. 14721, .

Mancini, A., Eyassu, F., Conway, M., Occhipinti, A., Liò, P., Angione, C., Pucciarelli, S. CiliateGEM: An open-project and a tool for predictions of ciliate metabolic variations and experimental condition design (2018) BMC Bioinformatics, 19, art. no. 442, .

Mancini, A., La Vigna, G., Pucciarelli, S., Lombardi, F.E., Barocci, S. A three-year study entailing molecular characterization and epidemiology of *Clostridium difficile* in an Italian tertiary care hospital (2018) Infezioni in Medicina, 26 (3), pp. 204-209.

Lobanov, A.V., Heaphy, S.M., Turanov, A.A., Gerashchenko, M.V., Pucciarelli, S., Devaraj, R.R., Xie, F., Petyuk, V.A., Smith, R.D., Klobutcher, L.A., Atkins, J.F., Miceli, C., Hatfield, D.L., Baranov, P.V., Gladyshev, V.N. Position-dependent termination and widespread obligatory frameshifting in *Euplotes* translation (2017) Nature Structural and Molecular Biology, 24 (1), pp. 61-68.

Yang, G., Yao, H., Mozzicafreddo, M., Ballarini, P., Pucciarelli, S., Miceli, C. Rational engineering of a cold-adapted α -amylase from the Antarctic ciliate *Euplotes focardii* for simultaneous improvement of thermostability and catalytic activity (2017) Applied and Environmental Microbiology, 83 (13), art. no. e00449-17, .

Juganson, K., Mortimer, M., Ivask, A., Pucciarelli, S., Miceli, C., Orupõld, K., Kahru, A. Mechanisms of toxic action of silver nanoparticles in the protozoan *Tetrahymena thermophila*: From gene expression to phenotypic events (2017) Environmental Pollution, 225, pp. 481-489.

Mangiagalli, M., Bar-Dolev, M., Tedesco, P., Natalello, A., Kaleda, A., Brocca, S., de Pascale, D., Pucciarelli, S., Miceli, C., Bravslavsky, I., Lotti, M. Cryo-protective effect of an ice-binding protein derived from Antarctic bacteria (2017) FEBS Journal, 284 (1), pp. 163-177.

Angione, C., Liò, P., Pucciarelli, S., Can, B., Conway, M., Lotti, M., Bokhari, H., Mancini, A., Sezerman, U., Telatin, A. Bioinformatics challenges and potentialities in studying extreme environments (2016) Lecture Notes in Computer

Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), 9874 LNCS, pp. 205-219.

Pucciarelli, S., Devaraj, R.R., Mancini, A., Ballarini, P., Castelli, M., Schrollhammer, M., Petroni, G., Miceli, C. Microbial Consortium Associated with the Antarctic Marine Ciliate *Euplotes focardii*: An Investigation from Genomic Sequences (2015) *Microbial Ecology*, 70 (2), pp. 484-497.

Ferro, D., Bakiu, R., De Pittà, C., Boldrin, F., Cattalini, F., Pucciarelli, S., Miceli, C., Santovito, G. Cu,Zn Superoxide Dismutases from *Tetrahymena thermophila*: Molecular Evolution and Gene Expression of the First Line of Antioxidant Defenses. (2015) *Protist*, 166 (1), pp. 131-145.

Chiellini, C., Gori, R., Tiezzi, A., Brusetti, L., Pucciarelli, S., D'Amato, E., Chiavola, A., Sirini, P., Lubello, C., Petroni, G. Ozonation effects for excess sludge reduction on bacterial communities composition in a full-scale activated sludge plant for domestic wastewater treatment (2014) *Environmental Technology (United Kingdom)*, 35 (12), pp. 1462-1469.

Taffi, M., Paoletti, N., Liò, P., Pucciarelli, S., Marini, M. Bioaccumulation modelling and sensitivity analysis for discovering key players in contaminated food webs: The case study of PCBs in the Adriatic Sea (2014) *Ecological Modelling*, 306, pp. 205-215.

Taffi, M., Paoletti, N., Angione, C., Pucciarelli, S., Marini, M., Liò, P. Bioremediation in marine ecosystems: A computational study combining ecological modeling and flux balance analysis (2014) *Frontiers in Genetics*, 5 (SEP), art. no. 319, .

Pucciarelli, S., Chiappori, F., Devaraj, R.R., Yang, G., Yu, T., Ballarini, P., Miceli, C. Identification and analysis of two sequences encoding ice-binding proteins obtained from a putative bacterial symbiont of the psychrophilic Antarctic ciliate *Euplotes focardii*. (2014) *Antarctic Science*, 26 (5), pp. 491-501.

Ghazal, P., Corsi, M., Roth, A., Faggioni, F., Corti, C., Merlo Pick, E., Pucciarelli, S., Ciccocioppo, R., Ubaldi, M. Paradoxical response to the sedative effects of diazepam and alcohol in C57BL/6J mice lacking the neuropeptide S receptor (2014) *Peptides*, 61, pp. 107-113.

Gentekaki, E., Kolisko, M., Boscaro, V., Bright, K.J., Dini, F., Di Giuseppe, G., Gong, Y., Miceli, C., Modeo, L., Molestina, R.E., Petroni, G., Pucciarelli, S., Roger, A.J., Strom, S.L., Lynn, D.H. Large-scale phylogenomic analysis reveals the phylogenetic position of the problematic taxon *Protocruzia* and unravels the deep phylogenetic affinities of the ciliate lineages (2014) *Molecular Phylogenetics and Evolution*, 78 (1), pp. 36-42.

Yang, G., Yang, G., Aprile, L., Turturo, V., Pucciarelli, S., Pucciarelli, S., Miceli, C. Characterization and comparative analysis of psychrophilic and mesophilic alpha-amylases from *Euplotes* species: A contribution to the understanding of enzyme thermal adaptation (2013) *Biochemical and Biophysical Research Communications*, 438 (4), pp. 715-720.

Yang, G., De Santi, C., De Pascale, D., Pucciarelli, S., Pucciarelli, S., Miceli, C. Characterization of the first eukaryotic cold-adapted patatin-like phospholipase from the psychrophilic *Euplotes focardii*: Identification of putative determinants of thermal-adaptation by comparison with the homologous protein from the mesophilic *Euplotes crassus* (2013) *Biochimie*, 95 (9), pp. 1795-1806.

Pucciarelli, S., Chiappori, F., Sparvoli, D., Milanese, L., Miceli, C., Melki, R. Tubulin folding: The special case of a beta-tubulin isotype from the Antarctic psychrophilic ciliate *Euplotes focardii* (2013) *Polar Biology*, 36 (12), pp. 1833-1838.

Pucciarelli, S., Ballarini, P., Sparvoli, D., Barchetta, S., Yu, T., Detrich III, H.W., Miceli, C. Distinct functional roles of β -Tubulin isoforms in microtubule arrays of *Tetrahymena thermophila*, a model single-celled organism

(2012) PLoS ONE, 7 (6), art. no. e39694, .

Chiappori, F., Pucciarelli, S., Merelli, I., Ballarini, P., Miceli, C., Milanesi, L. Structural thermal adaptation of β -tubulins from the Antarctic psychrophilic protozoan *Euplotes focardii* (2012) *Proteins: Structure, Function and Bioinformatics*, 80 (4), pp. 1154-1166.

Yu, T., Barchetta, S., Pucciarelli, S., La Terza, A., Miceli, C. A Novel Robust Heat-inducible Promoter for Heterologous Gene Expression in *Tetrahymena thermophila* (2012) *Protist*, 163 (2), pp. 284-295.

Pucciarelli, S., La Terza, A., Ballarini, P., Barchetta, S., Yu, T., Marziale, F., Passini, V., Methé, B., Detrich III, H.W., Miceli, C. Molecular cold-adaptation of protein function and gene regulation: The case for comparative genomic analyses in marine ciliated protozoa (2009) *Marine Genomics*, 2 (1), pp. 57-66.

Marziale, F., Pucciarelli, S., Ballarini, P., Melki, R., Uzun, A., Ilyin, V.A., Detrich III, H.W., Miceli, C. Different roles of two γ -tubulin isoforms in the cytoskeleton of the Antarctic ciliate *Euplotes focardii*: Remodelling of interaction surfaces may enhance microtubule nucleation at low temperature (2008) *FEBS Journal*, 275 (21), pp. 5367-5382.

Pucciarelli, S., Buonanno, F., Pellegrini, G., Pozzi, S., Ballarini, P., Miceli, C. Biomonitoring of Lake Garda: Identification of ciliate species and symbiotic algae responsible for the "black-spot" bloom during the summer of 2004 (2008) *Environmental Research*, 107 (2), pp. 194-200.

Barchetta, S., La Terza, A., Ballarini, P., Pucciarelli, S., Miceli, C. Combination of two regulatory elements in the *Tetrahymena thermophila* HSP70-1 gene controls heat shock activation (2008) *Eukaryotic Cell*, 7 (2), pp. 379-386.

Joachimiak, E., Pucciarelli, S., Barchetta, S., Ballarini, P., Kaczanowska, J., Miceli, C. Cell Cycle-dependent Expression of γ -Tubulin in the Amicronuclear Ciliate *Tetrahymena pyriformis* (2007) *Protist*, 158 (1), pp. 39-50.

Pucciarelli, S., Parker, S.K., Detrich III, H.W., Melki, R. Characterization of the cytoplasmic chaperonin containing TCP-1 from the Antarctic fish *Notothenia coriiceps* (2006) *Extremophiles*, 10 (6), pp. 537-549.

2

Pucciarelli, S., Marziale, F., Di Giuseppe, G., Barchetta, S., Miceli, C. Ribosomal cold-adaptation: Characterization of the genes encoding the acidic ribosomal P0 and P2 proteins from the Antarctic ciliate *Euplotes focardii* (2005) *Gene*, 360 (2), pp. 103-110.

Bedini, R., Pucciarelli, S., Gatta, R., Nannelli, A., Miceli, C. HSP70 gene expression in sipunculids: A new biomarker for monitoring marine deposits (2004) *Chemistry and Ecology*, 20 (SUPPL. 1), pp. S345-S352.

Pucciarelli, S., Miceli, C., Melki, R. Heterologous expression and folding analysis of a β -tubulin isotype from the Antarctic ciliate *Euplotes focardii* (2002) *European Journal of Biochemistry*, 269 (24), pp. 6271-6277.

Pucciarelli, S., Miceli, C. Characterization of the cold-adapted α -tubulin from the psychrophilic ciliate *Euplotes focardii* (2002) *Extremophiles*, 6 (5), pp. 385-389.

Wirz, A., Pucciarelli, S., Miceli, C., Tongiorgi, P., Balsamo, M. Novelty in Phylogeny of Gastrotricha: Evidence from 18S rRNA Gene (1999) *Molecular Phylogenetics and Evolution*, 13 (2), pp. 314-318.

Pucciarelli, S., Ballarini, P., Miceli, C. Cold-adapted microtubules: Characterization of tubulin posttranslational modifications in the antarctic ciliate *Euplotes focardii* (1997) *Cell Motility and the Cytoskeleton*, 38 (4), pp. 329-340.