Program	Program NUCLEU PN 09-13 02 10
Project title (ENG):	**Detection of antibiotic resistance profile of the bacterial strains from deltaic aquatic ecosystems**
Project title (RO):	Determinarea profilului de rezistenta la antibiotic al tulpinilor bacteriene din ecosistemele acvatice deltaice
Duration	2013-2015
Team Leader	Alina Roxana Catrangiu (Banciu)
Summary (short description) ENG	The project is based on the qualitative and quantitative monitoring of fecal pollution indicators from surface waters. The St. Gheorghe Branch fom the south-east of Danube Delta was chosen as reference area. The surface water samples were monthly collected from 11 control sections and they were quantitatively assessed for the microbiological contamination with fecal bacteria: total coliform bacteria, faecal coliform bacteria and enterococci. The strains were isolated and tested for virulence factors and for antiobiotic resistance. To identify the genes that determine the microorganisms resistant to antibiotics, the bacterial strains resistant to the β-lactams were selected and subjected to DNA extraction used in PCR technique. The high pathogenicity and virulence potential detected by fecal pollution indicators in the surface water indicated an impressive capacity to acquire and transmit the genetic characters that define the antibiotic resistance mechanisms. The study performed in the Danube Delta, on Sf. Gheoghe Branch emphasized both natural and acquired antibiotics resistances of pottentialy pathogenic bacteria.
Summary (short description) RO	Proiectul s-a bazat pe monitorizarea cantitativa si calitativa a indicatorilor de poluare fecala din apele de suprafata. Ca areal de referinta s-a ales Bratul Sf. Gheorghe din zona de sud-est a Deltei Dunarii. Probele de apa de suprafata au fost prelevate lunar din 11 puncte de control, apoi au fost cantitativ analizate pentru contaminarea microbiologica cu bacterii fecale: bacterii coliforme totale, bacterii coliforme fecale si enterococci. Tulpinile bacteriene au fost isolate si supuse testelor de evidentiere a factorilor de virulenta si de rezistenta la antibiotice. Pentru a identifica genele care determina rezistenta microorganismelor la antibiotic, au fost selectate tulpinile bacteriene rezistente la β-lactamice si supuse extractiei AND utilizat ulterior in tehnica PCR. Protentialul inalt de patogenitate si virulenta determinat de indicatorii de poluare fecala in aapa de suprafata a indicat impresionanta capacitate a microorganismelor de a dobandi si transmite caracterele genetice care definesc mecanismele de rezistenta la antibiotice
Dissemination of results	
PhD Thesis – Title RO, ENG	Determinarea potentialului patogenic microbian al Deltei Dunarii, Alina Catrangiu, 2015 Detection of microbial pathogenic potential of the Danube Delta
Full-paper ISI	**Alina Catrangiu**, Daniela Niculescu, Irina Lucaciu, Carmen Chifiriuc, Grigore Mihaescu, *"Virulence factors of gram negative bacteria isolated from natural aquatic ecosystems*" –Journal of Environmental Protection and Ecology Vol. 16, no. 1/2015.
	A. (Catrangiu) Banciu, D. Niculescu, M. Nita-Lazar, I. Lucaciu, C. Stoica, G. Mihaescu, Potentially pathogenic and antibiotic resistant bacteria in the danube delta aquatic ecosystem, Journal of Environmental Protection and Ecology Vol. 17, no. 1/2016.

Full-paper BDI	**Alina Catrangiu**, Daniela Niculescu, Irina Lucaciu, Catalina Stoica, Carmen Chifiriuc, Grigore Mihaescu, Microbial population dynamics in deltaic aquatic ecosystems – case study on Sfantu Gheorghe Branch, RomAqua nr. 8/2014
Conferences (platform, poster, abstract / full-paper	**Alina Catrangiu**, Daniela Niculescu, Irina Lucaciu, Carmen Chifiriuc, Grigore Mihăescu, Profilul de rezistenţă la antibiotice la tulpini bacteriene izolate din ecosistemele acvtatice deltaice - Sesiunea Ştiinţifică Studenţească a Facultăţii de Biologie – Ediţia 2013, 31 mai 2013, Bucuresti, Romania, Prezentare orala, publicare rezumat in Book of abstracts, pag. 49.
	Alina Catrangiu, Irina Lucaciu, Carmen Chifiriuc, Grigore Mihăescu, Influenţa temperaturii şi valorii pH asupra densităţii microbiene şi profilului de rezistenţă la antibiotice a unor tulpini izolate din ecosistemul acvatic deltaic - Sesiunea Ştiinţifică Studenţească a Facultăţii de Biologie – Ediţia 2014, mai 2014, București, România, prezentare orală, publicare Book of abstracts, pag. 49.
	Alina Catrangiu, Daniela Niculescu, Irina Lucaciu, Catalina Stoica, Carmen Chifiriuc, Grigore Mihaescu, Microbial population dynamics in deltaic aquatic ecosystems – case study on sfantu gheorghe branch – Simpozionul Internațional Mediul și Industria, 29-30 octombrie 2013, București, România, prezentare orală, publicare lucrare extenso in "The Environment and the Industry" 2013 (ISSN 2344-2898), pag.150-156.
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