Program	**Program NUCLEU PN-16-25 01 03**
Project title (ENG):	**Detection of adaptive biomarkers induced in microorganisms by the toxic effect of pharmaceutical compounds**
Project title (RO):	**Evidentierea biomarkerilor de adaptare la nivel transcriptional si translational ca urmare a expunerii microorganismelor la actiunea toxica indusa de substantele farmaceutice**
Duration	2016-2017
Team Leader	Researcher biol. Mihai Nita-Lazar
Summary (short description) ENG	Pharmaceutical active compounds (PhACs) have a toxic effect on biota and especially on bacterial populations by inhibiting their biological processes (essentials or not). If an essential biological pathway is affected, the bacteria enter in an apoptosis-like process inhibiting their growth and multiplication. Sometimes, bacteria adapt to the stress factors such as PhACs by induction of adaptive biomarkers at transcriptional and translational levels. A rapid detection of these adaptive biomarkers by modern biochemical and molecular biological technics allows an efficient monitoring of the toxic effect of PhACs as well as pinpointing the type and location of the affected biological path.
Summary (short description) RO	Substantele farmaceutice induc un efect toxic asupra biotei si, in special, asupra populatiilor bacteriene prin blocarea unor cai biologice esentiale sau nu supravietuirii acestora. In cazul blocarii unor cai biologice esentiale supravietuirii, bacteriile intra intr-o faza finala de tipul apoptozei, prin care cresterea si diviziunea sunt inhibate ajungand inevitabil la moarte. In alte cazuri, bacteriile (si organismele in general) se pot adapta / supravietui la factorii de stress (in cazul de fata la actiunea toxica a substantelor farmaceutice) prin inducerea unor biomarkeri adaptativi, care se exprima la nivel transcriptional si translational. Detectarea rapida, prin metode moderne de biochimie si biologie moleculara, a acestor biomarkeri de adaptare permite monitorizarea toxicitatii substantelor farmaceutice, indicand totodata tipul si calea biologica afectata.
Dissemination of results	
Full-paper ISI	**Nita-Lazar M**., Gheorghe S., Anghelache A., Banciu A., Stoica C. and Lucaciu I. (2016) Modulation of the bacterial defense mechanisms by various chemical structures. Rev. Chim., **67**, 1454-1457
Conferences (platform, poster, abstract / full-paper	**Nita-Lazar M**., Gheorghe S., Anghelache A., Banciu A., Stoica C. and Lucaciu I. Modulation of the bacterial defense mechanisms by various chemical structures. International Symposium «The Environment and The Industry» - SIMI, 13-14 October, 2016, Bucharest, Romania.