

## HORIZON 2020 - Partner Profile Form Expression of Interest

### 1) ORGANISATION INFORMATION

<b>Organisation name (English)</b>	<b>Ruđer Bošković Institute</b>
<b>Organisation name (Croatian)</b>	<b>Institut Ruđer Bošković</b>
<b>Organisation acronym (English)</b>	<b>IRB</b>
<b>Organisation acronym (Croatian)</b>	<b>IRB</b>
<b>Organisation address</b>	<b>Bijenička cesta 54 10000 Zagreb Croatia</b>
<b>Organisation website</b>	<b><a href="http://www.irb.hr/eng">http://www.irb.hr/eng</a></b>
<b>Type of organisation (Enterprise, SME, Academic, Research institute, Public body, Other - specify)</b>	<b>research institute</b>
<b>Department/Unit/ Laboratory</b>	<b>Division of Physical Chemistry</b>
<b>Contact person (incl. Title)</b>	<b>Dr. Marija Luić</b>
<b>Position (Function)</b>	<b>Head of the Laboratory for chemical and biological crystallography</b>
<b>Telephone number</b>	<b>+385 1 456 1119</b>
<b>Fax number</b>	<b>+385 1 456 1119</b>
<b>E-mail address</b>	<b><a href="mailto:marija.luic@irb.hr">marija.luic@irb.hr</a></b>

### Description of the organisation (up to 500 characters)

The Ruđer Bošković Institute (IRB) is regarded as Croatia's leading scientific institute in the natural and biomedical sciences as well as marine and environmental research, owing to its size, scientific productivity, international reputation in research, and the quality of its scientific personnel and research facilities. The IRB is the leading and internationally most competitive Croatian institute by virtue of its participation in international research projects, such as for example EC FP5-7 programs.

### Description of the department/unit/laboratory (up to 500 characters)

Research teams of the Division of physical chemistry have expertise and exceptional research productivity in chemical kinetics, structural chemistry, spectroscopy, theoretical chemistry, modeling of substance properties as well as physical and chemical processes, risk assessment, and structural and chemical analyses. Several research teams have applied their expertise and extended research activities into various areas of the biosciences.

## 2) SPECIFIC INTEREST (Call, Topic) and EXPERTISE OFFERED

### Relevant topic(s) in the Work Programme (Thematic area, Call, Topic)

Sustainable Food Security

**Topic SFS-15-2014: Proteins of the future**

H2020-SFS-2014-2Sub call of: H2020-SFS-2014-2015

### Description of the expertise offered related to the topic (up to 1000 characters)

Using kinetic and crystallographic approaches, our research team (chemists, physicists, crystallographers, biochemists, molecular biologists) has obtained a good working knowledge of the catalytic mechanism (at molecular level) of the enzymes including lipases, esterases, peptidases, phosphorylases, aminoacyl-tRNA synthetases, and DNA binding proteins. With our accumulated knowledge, experience and skills we can easily cope with the task of investigating any protein of interest for the project-topic *Proteins of the future*. Our research activities include cloning, purification, biochemical characterization of the recombinant enzymes (WT and mutated variants), the determination of kinetic parameters, and crystallization and 3D-structure elucidation by X-ray crystallography methods. Correlations of structure and function of proteins including thermodynamics parameters of protein-ligand and protein-protein interactions by calorimetric procedures are of our interest. Bioinformatics analysis of protein and genome sequences together with data processing and integration are parts of our expertise.

### Keywords describing the expertise offered related to the topic (up to 10 words)

X-ray crystallography of biological macromolecules, molecular genetics, bioinformatics

**Experience in previous Framework Programmes (participation in projects)  
(Thematic area, Call, Topic, Project full title & acronym, Role in the project)**

none

**Experience of cooperation with the industry - incl. SMEs  
(Programme, Thematic area, Project full title & acronym, Type of cooperation)**

none

**I agree to have this partner profile (expression of interest) published and shared**

**YES**