

Strategic Research Agenda: Health Research Priorities for Croatia

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Croatian health research policy framework

2006 “Science and Technology Policy”, Action Plan 2007-2010

9 long-term priorities:

1. Basic knowledge-driven research,
2. Environment protection and economic development of karst regions: Adriatic sea, coast and islands,
3. Agriculture, biotechnology, food,
4. **Health**,
5. Information and communication technology,
6. Nanoscience, new materials, building and new production processes,
7. Energy, alternative and renewable energy sources, traffic and safety,
8. Social and humanistic sciences, Croatian identity,
9. Social integration, learning and education, life-long

2006 “Science and Technology Policy”, Action Plan 2007-2010

4 short-term priorities:

1. Environment (Adriatic sea, coast and islands, karst regions),
2. **Health** (food, agriculture, biotechnology, social aspect of health),
3. Energy and materials (alternative and renewable energy sources, bio-nanomaterials),
4. Croatian identity (Croatian contribution to culture, religion, art and science, Croatian language).

National agencies relevant for research in health research sector:

Agency for Science and Higher Education

Croatian Standards Institute

Croatian Accreditation Agency

Croatian Institute of Technology – HIT Ltd.

Business Innovation Centre of Croatia – BICRO Ltd.

Agency for Adult Education

State Intellectual Property Office

Agency for Drugs and Medicinal Products

Agency for the Quality and Accreditation in Health Care

National expert bodies related to the health research sector :

Technological Council

National Bologna Follow-Up Group

National Higher Education Council

National Science Council

Croatian Innovation System Council

Council for Scientific Work and Higher Education

Funding

Council for Ethics in Science and Higher Education

Activities at the national level related to health research:

1. Mediterranean Institute for Life Sciences, since 2006 investment of € 4.5 million by the Ministry of Science

2. Membership in European Molecular Biology Laboratory, since 2006

The “Brain-Gain” programme of the Ministry of Science, Education and Sports to repatriate Croatian scientists living abroad: 62 returned since 2004, 15 in health research

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Ministry of Health and Social Care – regulation of clinical research trials:

Overview available from The EFGCP Report on The Procedure for the Ethical Review of Protocols for Clinical Research Projects in Europe, Croatia, update: March 2008,

[http://www.efgcp.be/Downloads/EFGCPReportFiles/Flow%20Chart%20Croatia%20\(revised\)%2008-03-01.pdf](http://www.efgcp.be/Downloads/EFGCPReportFiles/Flow%20Chart%20Croatia%20(revised)%2008-03-01.pdf)

The laws or regulations applying to an application for conducting a clinical trial:

Law 71/07 of 9 July 2007 – Law about drugs

rule 121/07 of 26 November 2007 about clinical trials and good clinical practice.

Ministry of Health and Social Care – regulation of clinical research trials:

Single national body for evaluating clinical trial applications, appointed by the Minister of Health

Translation of EC documents available:

„Note for Guidance on Good Clinical Practice“
(CPMP/ICH/135/95)

„Clinical Investigation of Medicinal Products in the Paediatric Population“ (CPMP/ICH/2711/99)

Funds for health research from major funding bodies in Croatia, 2007-2008:

Euros

Ministry of Science, Education and Sports (research grants)	5.171.466,67
National Foundation for Science, Higher Education and Technological Development of the Republic of Croatia	784.455,60
Croatian Institute of Technology	671.680,00
Unity Through Knowledge Fund	1.466.666,67
Total	5.412.331,16

Human resources for health research in 2006*:

Number of PhD students graduated	68†
Total number of R&D personnel	2976
% women in total No. R&D personnel	57.7
Total No. employees on a Full-Time-Equivalent (FTE) basis	1410,9
Total number of researchers	2473
% women in total number of researchers	52.1
Total number of researchers on a FTE basis	1144.3
Number of researchers with Ph.D. degree or higher	1361

Number of researchers with Ph.D. degree or

Overview of health research activities

Number of and funds for on-going projects in “Biomedicine and Health” from the Ministry of Science, Education and Sports

Number of projects	569
Number of programs	66
Total funds	5.171.466,67€

Number of and funds for on-going projects in “Biomedicine and Health” from the Ministry of Science, Education and Sports

Euros

Scientific standards for use of medicinal products	278.800,00 (5,39%)
Brain research	548.800,00 (10,61%)
Tumour research	768.533,33 (14,86%)
Human infective diseases (7,95%)	411.333,33
Cardiovascular diseases (4,54%)	234.800,00
Chronic diseases	721.200,00 (13,95%)
Public health (13,72%)	709.333,33
Transplantation of genes and tissues	368.000,00

On-going projects in “Biomedicine and Health” from the Ministry of Science, Education and Sports

Funds for individual projects low, because of high number of projects receiving funds.

Range:

from 7.744,44 € for projects in “Scientific standards for use of medicinal products”

to 10.394,17 € for projects in “Human reproduction”

Investment in capital research equipment in health (Ministry of Science, Education and Sports)

€ 1.437.818,40 (32,5% total) for **2006**

€ 1.497.333,33 (28,8% total) for **2007**

€ 904.730,67 (17,2% total) for **2008**

FP7 research projects awarded to Croatian researchers in health field , from CORDIS database

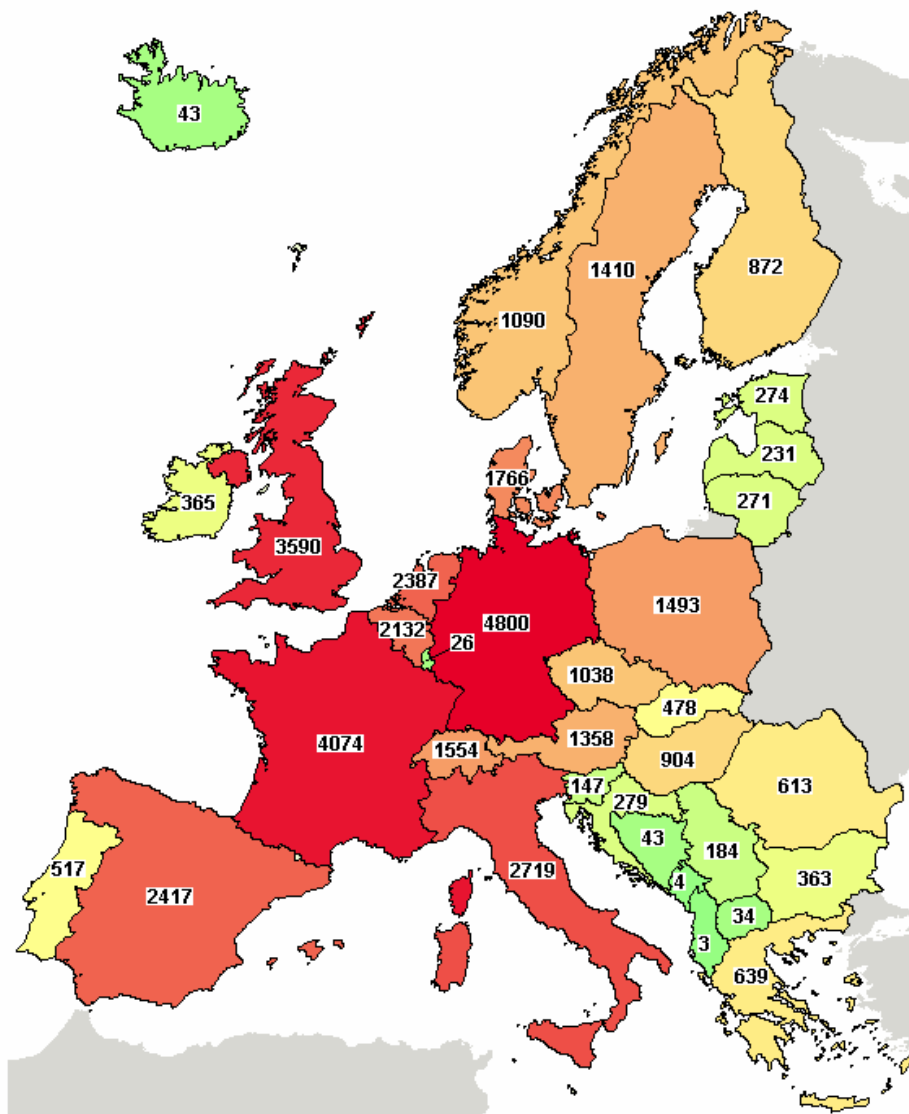
CAPRI2010 – The center for antibody production Rijeka: upgrading the central research and service infrastructure for the South Eastern Region of Europe

Research area: REGPOT-2008-1-01, Start date: [2009-03-01]

EUROGLYCOARRAYS – Development of carbohydrate array technology to systematically explore the functional role of glycans in healthy and diseased states

Research area: PEOPLE-2007-1-1-ITN Start date: [2008-09-01]

INTEGERS – Integrating and strengthening genomic research in South-Eastern Europe



Colors indicate number of studies with locations in that region

Least  Most

Labels give exact study count

**Clinical trials in Europe
registered in the
ClinicalTrials.gov trial
register
9 May 2009**

Main health sector trends in Croatia

Croatian Chamber of Economy, sector “Manufacture of chemicals, chemical products and rubber and plastic products”

2004: €5.960.000,00 1.7%

2005: €4.359.000,00 1.4%

R&D,

2006: €5.014.000,67 1.7%

total expenditures for

- Pliva Hrvatska – total revenue €43.635.000,00, 2718 employees in 2007,

- Belupo – total revenue €90.032, 915 employees in 2007,

- Pliva Famaceutika – total revenue €47.798, 67 employees in 2007

Patent applications in 2007 for “preparations for medical, dental purposes” (out of 442 patent applications in 2007)

<i>Field of technology/ International medical patent classification purposes/A 61</i>	<i>Preparations for & dental</i>
Resident applicants:	24
Non-resident applicants:	20
Total:	44

SWOT analysis of health research capacity in Croatia

SWOT analysis of health research capacity in Croatia

Strengths

- Critical mass of public and private institutions participating in health research
- Number of researchers with expertise in advanced research technology
- High-quality diagnostic equipment at university hospitals
- State of the art research equipment in the public sector
- Long-standing participation in international research programmes and collaboration with international scientific community
- Visibility of Croatian health researchers in international community
- Number of young researchers entering the field of health research
- Return of distinguished researchers from abroad

SWOT analysis of health research capacity in Croatia

Weaknesses

- Poor collaboration among research groups in the public sector
- Poor collaboration in health research between public and private sector
- Lack of transparency in the collaboration between private and public sector
- Large number of unused or little used capital research equipment
- Misbalance in high-level research infrastructure in Croatian regional centres
- Lack of project management skills
- Loss of young research fellows from research to non-research health care system
- Poor use of on-line resources and scientific literature
- Poor publication activity from degree level research

SWOT analysis of health research capacity in Croatia

Opportunities

- Health recognized as a high level national priority
- Expected increase in funding for research in general
- Verified public sector support for research and technological development in health
- Ongoing Croatian Technology Foresight program
- MSES program for return of international experts to Croatian science
- MSES funds for opening new research positions at universities and research institutions
- Full membership in FP7, ongoing accession to EU
- Ongoing health care system reform
- Existence of local scientific journals with international visibility (indexing in ISI databases)
- Access to current scientific literature via national Centre for On-line Databases
- Information and education service for intellectual property protection

SWOT analysis of health research capacity in Croatia

Threats

- No national health research priorities, especially in clinical research
- Unclear mechanism for implementing policies and strategies
- Misbalance in research funding and policies between the Ministry of Science and Ministry of Health
- No information on clinical research trials in Croatia
- Problems in the implementation of health care reform
- Few SMEs in health research, lack of cooperation with other sectors
- General brain-drain of researchers from Croatia
- Global and local financial crisis
- Lack of support for excellence in the higher education community

Health research priorities for Croatia

Health research priorities for Croatia

1. Translational medicine
2. Genetic and environmental determinants of health and disease
3. Improving the quality of clinical research trials

Health research priorities for Croatia

1. Translational medicine

- combines two of the Fp7 priority health themes: “Translating research for human health” and “Biotechnology, generic tools and medical technologies for human health”.

Specific areas addressed within this strategic priority:

1. Brain research and neurobiology of cognitive, mental and neurological diseases;
2. Research on complex, late-onset diseases, including cancer, cardiovascular disease, diabetes/obesity, and musculoskeletal diseases;
3. Human development and ageing;
4. Research on infectious diseases.

Health research priorities for Croatia

2. Genetic and environmental determinants of health and disease

- Croatia has already a strong research base for studying genetic and environmental determinants of health and disease, drawing from epidemiological research of isolated population on Adriatic islands (“10,001 Dalmatians”)

Specific aims for this research priority topic:

1. Establishment of national Biobank for specific diseases, and
2. Integration of information from large-scale collections of biological data.

Health research priorities for Croatia

2. Genetic and environmental determinants of health and disease

National Biobank: 4 general levels of complexity involved in the development of human diseases:

- 1)genomics level
- 2)“metabolomics” level (including proteomics, glycomics, and lipidomics)
- 3)level of intermediate quantitative traits (e.g., blood pressure, forced expiratory capacity, cholesterol levels, etc.)
- 4)endpoint that results in a complex disease phenotype

In line with the priorities from the two FP7 health themes: 1) “Translating research for human health” and 2) “Biotechnology, generic tools and medical technologies for human health”.

Specifically related to the specific aim of the 1) “Biotechnology” theme – High-throughput research: enhancing data generation, standardisation, acquisition & analysis, and the specific aim of the 2)“Translational research theme” – Integration of biological data and processes: large-scale data

Health research priorities for Croatia

3. Improving the quality of clinical research trials

- Developing translational research and biotechnology for human health is closely linked with the quality of clinical research.

Specific aims for this research priority topic:

1. Creation of database of approved clinical trials in Croatia
2. Training of researchers in good clinical practice for clinical research trials
3. Ensuring quality for care assessment of clinical research trial at the national level.

In line with the FP7 Health theme “Optimising the delivery of healthcare to European citizens”