

STATE GRANT AWARDS FOR SETTING UP AND DEVELOPING BIOMEDICAL RESEARCH NETWORKS

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The results of a call for applications for grant awards to set up and develop biomedical research networks were made known by the Instituto de Salud Carlos III in December 2002 in what was the first round of grants of this type to be awarded in Spain. The grants are financed by the fund set up by an agreement reached between the Spanish Ministerio de Sanidad y Consumo and Farmaindustria (the pharmaceutical industry association). The total amount of the awards provided in the first year is EUR 55 million. The outcome for Catalonia in this first round of grant awards has been highly positive in that it is the Autonomous Regional Community that has been allocated the most funding. Furthermore, the research centres and groups in Catalonia are to play a leading role in co-ordinating the networks funded in this first year of grant funding.

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1. Introduction

The results¹ of the selection process for funding through competitive awards made available² by the Instituto de Salud Carlos III to set up and develop co-operative research networks covering the biomedical sciences were made known on 30 December 2002. This action fits into the framework of the priorities of the National RDI Plan (Research, Development and Innovation, 2000-2003) for the field of healthcare,.

These grant awards were made available as a result of an agreement between the Spanish Ministerio de Sanidad y Consumo and Farmaindustria³ signed on 31 October 2001⁴, the objectives of which were to cut down public pharmaceutical expenditure and set up a fund to finance health research projects of general interest. According to the agreement, Farmaindustria formally agreed to create and maintain this fund which will have a maximum endowment of EUR 300 million, EUR 150 million of which are the minimum endowment, the rest being a function of the growth in sales of medicine and drugs. Farmaindustria also undertook to increase investment in specific fields of research (cardiovascular science, oncology, genomics and certain emerging illnesses) at a higher rate than the growth in GNP. The figure of EUR 1,352.3 million was established for investment in these areas during the period 2002-2004. Funding is to be channelled through the Instituto de Salud Carlos III, (a public research body with a self-governing corporate status that comes under the

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Ministerio de Sanidad y Consumo), which is in charge of handling the awards and supervising research projects.

The 2002 rounds of grants is the first of its type, the objective being to promote and fund co-operative research networks covering the biomedical sciences through networks of research centres and research groups. A research network is defined as an association of centres or groups with common interests with regard to objectives and lines of research. The intention is to promote research in the group of cardiovascular, neoplastic, neuro-degenerative and infectious diseases, amongst others, which have high sickness and mortality rates and where there is a low critical mass of researchers and joint research. The organisation of research networks provides for the complementary nature of actions implemented by participants, financial resources are optimised and best use can be made of economies of scale⁵. This should bring about greater efficiency and effectiveness in actions and a decrease in the time lag between when knowledge is generated and its transfer and application.

¹ <http://www.iscii.es/fis> i <http://www.msc.es/notas/2003-01-30-2.htm> and appendix.

² Order SCO/709/2002 of 22 March, published in the BOE on 3 April 2002.

³ The Spanish pharmaceutical industry association.

⁴ <http://www.msc.es/notas/2001-10-31-1.htm>

⁵ This endeavour to promote research networks fits into the framework of the current objectives of the European Union's 6th Framework Programme (2002-2006), where the development of networks of scientific excellence is defined.

The intention of this round of grants is to promote research in the group of cardiovascular, neoplastic, neuro-degenerative and infectious diseases, amongst others, with high sickness and mortality rates and where there is a low critical mass of researchers and joint research.

Grant funding was made available to centres and groups involved in biomedical research at universities, public research entities, in the Sistema Nacional de Salud (SNS, Spanish National Health System) and companies in the sector. In order to receive funding, each network of groups or centres had to present a 3-year co-operative research project within the priority areas of the National RDI Plan (2002-2003). The awards come in the form of a grant that can be used both for the research project and the network operating expenses. Networks must consist of at least five centres (each centre must be made up of at least three groups) or five groups, with the participation of groups or centres from at least 4 Autonomous Regional Communities. At least one emerging research centre or group must participate in the network⁶. Each centre or group constitutes a node and networks are co-ordinated by a network co-ordinator. This co-ordinator must be an institution in the SNS and a node participating in the network.

The technical assessment of the applications was carried out by a committee of international specialists and their conclusions were analysed by a scientific and technical

committee from the Consejo Interterritorial (Inter-regional Council) of the SNS, a body of the Ministerio de Sanidad y Consumo which acted as the selection committee.

The assessment standards specified in the announcement of grant funding were as follows:

- The viability and opportuneness of the proposed strategic research plan, appropriateness and capacity of the research centres and groups to carry out the activities envisaged in the projects, the quality of their scientific nature, the rigour with which the proposed activities are formulated and appropriate planning in time.
- The scientific and technical quality of the record of activities carried out by the research centres and groups, measured in terms of original scientific articles published over the past five years in scientific journals and patents.
- The scientific and technical quality of the record of activities carried out by the research centres and groups, calibrated in terms of research projects assessed and approved by external national and international agencies over the past five years.
- The degree and quality of training activity within the areas of action of the research centres and groups.
- The presence of more than one emerging centre or group, provided there is guarantee of its full guidance.

The announcement for grant funding also stated that the selection committee would take into account the following criteria:

- The suitability of the proposals with regard to the objectives and requirements laid down in the call for grant applications.

⁶The concept of emerging centre or group is not defined in the announcement of grant funding. Nevertheless, in an article in the El País newspaper on 18/02/2003, Antonio Campos, director of the Instituto de Salud Carlos III, defines them as centres or groups that have performed well in peripheral regions.

- Applicability and interest of the proposals for the SNS.
- Inter-regional impartiality and balance, provided that guarantee is given of the fulfilment of the aforementioned objectives.

The amount of each grant was determined for each case in the selection process and according to the budget availability for the year. Grant awards for funding subsequent to 2002 will be conditioned by the availability of budgetary appropriation and the presentation and approval of an annual financial report.

In accordance with the adjudication of grants by the selection committee for 2002, 13 centre networks and 56 group networks were successful, out of a total of 14 centre networks and 212 group networks that applied. Total funding for 2002 was EUR 55.8 million (50.03% of the total requested by centres being funded during this first year), of which EUR 28.62 million went to centre networks and EUR 27.18 million to group networks. The total amount of funding was distributed between 290 institutions and 11,331 researchers.

Table 1
Funding distribution between the Autonomous Regional Communities in 2002.

| Autonomous Regional Community | Centre networks | | | | Group networks | | TOTAL | |
|-------------------------------|-----------------|-----------------|---------------------------------|-------------------------|---------------------------------|-------------------------|---------------------------------|-------------------------|
| | Nº. nodes | Nº. researchers | Allocated funding (EUR million) | % of the national total | Allocated funding (EUR million) | % of the national total | Allocated funding (EUR million) | % of the national total |
| Andalusia | 152 | 1.369 | 1.986,7 | 6,94 | 2.435,9 | 8,96 | 4.422,6 | 7,93 |
| Aragó | 50 | 349 | 564,1 | 1,97 | 798,9 | 2,94 | 1.363,0 | 2,44 |
| Astúries | 24 | 195 | 501,3 | 1,75 | 99,1 | 0,36 | 600,4 | 1,08 |
| Balearic Islands | 24 | 176 | 428,8 | 1,50 | 450,8 | 1,66 | 879,6 | 1,58 |
| Canary Islands | 39 | 311 | 670,8 | 2,34 | 259,7 | 0,96 | 930,5 | 1,67 |
| Cantàbria | 33 | 166 | 397,4 | 1,39 | 433,1 | 1,59 | 830,5 | 1,49 |
| Castella-Lleó | 19 | 140 | 1.498,9 | 5,24 | 1.131,4 | 4,16 | 2.630,3 | 4,71 |
| Castella-La Manxa | 59 | 413 | 155,8 | 0,54 | 666,1 | 2,45 | 821,9 | 1,47 |
| Catalonia | 435 | 3.444 | 10.566,8 | 36,92 | 8.009,1 | 29,47 | 18.575,9 | 33,29 |
| Valencia | 126 | 807 | 1.531,7 | 5,35 | 2.167,9 | 7,98 | 3.699,6 | 6,63 |
| Extremadura | 8 | 41 | 0,0 | 0,00 | 239,9 | 0,88 | 239,9 | 0,43 |
| Galícia | 54 | 381 | 615,6 | 2,15 | 1.211,1 | 4,46 | 1.826,7 | 3,27 |
| Madrid | 423 | 2.495 | 7.699,5 | 26,90 | 7.305,4 | 26,88 | 15.004,9 | 26,89 |
| Múrcia | 33 | 229 | 520,9 | 1,82 | 445,6 | 1,64 | 966,5 | 1,73 |
| Navarra | 46 | 252 | 1.047,9 | 3,66 | 460,7 | 1,69 | 1.508,6 | 2,70 |
| Basque Country | 63 | 548 | 432,5 | 1,51 | 993,6 | 3,66 | 1.426,1 | 2,56 |
| La Rioja | 3 | 15 | 0,0 | 0,00 | 72,9 | 0,27 | 72,9 | 0,13 |
| TOTAL | 1.591 | 11.331 | 28.618,8 | 100,00 | 27.181,1 | 100,00 | 55.799,9 | 100,00 |

2. Distribution of approved funding between the Autonomous Regional Communities

Table 1 shows the distribution of funding allocated to centre networks, group networks, and as a whole for 2002 (the first year of grant awards) between the different Autonomous Regional Communities (ARC). Catalonia, with 435 nodes, is the ARC with the highest number of centres and groups taking part in the research networks that receive funding. It also has the highest number of researchers (3,444) participating in the research networks. It can also be seen from table 1 that Catalonia is the ARC that has received most funding (EUR 18.5 million or 33.29% of the total), followed by Madrid with EUR 15 million (26.89%). Catalonia and Madrid together concentrate 60% of allocated funding, a reflection of the concentration of scientific activities in the biomedical sciences in these two ARC. These are followed, with considerably lower amounts, by Andalusia with EUR 4.4 million (7.93%), Valencia with EUR 3.7 million (6.63%), and Castilla-León with EUR 2.6 million (4.71%).

Each research network has a network coordinator which has the function of coordinating the actions of the different nodes that make up the network so as to maximise the complementarity of the individual actions at each node.

Of the EUR 28.61 million of funding allocated to set up research centre networks, Catalonia received EUR

10.5 million (36.92%) and Madrid EUR 7.7 million (26.9%). Andalusia received EUR 1.9 million (6.94%), Valencia EUR 1.5 million (5.35%) and Castilla-León EUR 1.5 million (5.24%).

Of the EUR 27.18 million EUR allocated for the funding of research group networks, Catalonia was again the ARC that received the highest amount (EUR 8 million, 29.47% of the total), followed by Madrid (EUR 7.3 million, 26.88%) and considerably less to Andalusia (EUR 2.4 million, 8.96%), Valencia (EUR 2.1 million, 7.98%), Galicia (EUR 1.2 million, 4.46%) and Castilla-León (EUR 1.1 million, 4.16%).

3 The distribution of funding allocated to Catalonia for research centres

Table 2 shows the number of research networks in which each centre in Catalonia participates and the number of networks in which research groups belonging to each centre participate. The funding allocated to each centre is also given, for projects carried out both in research centre networks and by groups based at a centre and which participate in group networks.

Funding was allocated to 51 biomedical research centres in Catalonia. The centres that received the highest amount of funding were the Institut d'Investigacions Biomèdiques August Pi i Sunyer (IDIBAPS) with EUR 4 million EUR (21.75% of the total amount granted in Catalonia), the Hospital Vall Hebrón with EUR 2.6 million (14.26%), the Hospital de la Santa Creu i Sant Pau with EUR 2 million (11.28%) and the Institut Municipal d'Investigació Mèdica de Barcelona (IMIM) with EUR 1.3 million (7.41%). These four centres accounted for 54% of the total funding allocated to centres in Catalonia in the first year, including grants to both centre networks and group networks.

Table 2
Distribution of projects and funding amongst research centres and groups in Catalonia. 2002

| Institutions | City | Nº. projects | | Nº projects as leader | | Funding (EUR) | | | % Total |
|---|-------------------------|--------------|--------|-----------------------|-----------|----------------------|---------------------|----------------------|---------------|
| | | Centres | Groups | Centres | Groups | Centres | Groups | Total | |
| Agència d'Avaluació de Tecnologia i Recerca Mèdiques | Barcelona | | 1 | | 1 | | 107.587,74 | 107.587,74 | 0,58 |
| Centre de Biotecnologia Animal i Teràpia Gènica (CBATEG) | Bellaterra | 1 | 2 | | | 126.264,76 | 82.153,74 | 208.418,50 | 1,12 |
| Centre de Visió per Computador (CVC) | Cerdanyola del Vallès | | 1 | | | | 14.075,31 | 14.075,31 | 0,08 |
| Centre d'Anàlisi i Programes Sanitaris (CAPS) | Barcelona | | 1 | | | | 16.960,12 | 16.960,12 | 0,09 |
| Centre de Regulació Genòmica (CRG) | Barcelona | | 2 | | 1 | | 470.647,37 | 470.647,37 | 2,53 |
| Corporació Sanitària Parc Taulí | Sabadell | 2 | 5 | | | 109.276,25 | 198.700,19 | 307.976,44 | 1,66 |
| Dept. de Sanitat i Seguretat Social | Barcelona | 1 | 2 | | | 103.273,65 | 36.302,99 | 139.576,64 | 0,75 |
| Escola Universitària d'Infermeria (UdG) | Girona | | 3 | | | | 22.481,35 | 22.481,35 | 0,12 |
| Facultat de Biologia (UB) | Barcelona | | 2 | | | | 79.405,18 | 79.405,18 | 0,43 |
| Facultat de Ciències (UAB) | Bellaterra | | 3 | | | | 76.651,55 | 76.651,55 | 0,41 |
| Facultat de Ciències de la Salut (UIC) | Sant Cugat del Vallès | | 4 | | | | 25.806,76 | 25.806,76 | 0,14 |
| Facultat de Ciències de la Salut i la Vida (UPF) | Barcelona | | 3 | | | | 103.246,86 | 103.246,86 | 0,56 |
| Facultat de Farmàcia (UB) | Barcelona | | 6 | | | | 269.791,33 | 269.791,33 | 1,45 |
| Facultat de Física (UB) | Barcelona | | 1 | | | | 11.677,04 | 11.677,04 | 0,06 |
| Facultat d'Informàtica (UPC) | Barcelona | | 3 | | | | 45.259,92 | 45.259,92 | 0,24 |
| Facultat de Medicina (UdL) | Lleida | | 5 | | 1 | | 97.940,58 | 97.940,58 | 0,53 |
| Facultat de Medicina (UAB) | Bellaterra | | 2 | | | | 101.011,66 | 101.011,66 | 0,54 |
| Facultat de Medicina i Ciències de la Salut (URV) | Reus | | 2 | | | | 104.360,83 | 104.360,83 | 0,56 |
| Facultat de Química (UB) | Barcelona | | 1 | | | | 9.744,26 | 9.744,26 | 0,05 |
| Fundació Parc de Recerca Biomèdica de Barcelona | Barcelona | 3 | | 1 | | 651.209,91 | | 651.209,91 | 3,51 |
| Fundació d'Osona per a la Recerca i l'Educació Sanitàries (FORES) | Vic | | 1 | | | | 15.857,36 | 15.857,36 | 0,09 |
| Fundació CETIR | Esplugues de Llobregat | 1 | | | | 7.539,76 | 7.539,76 | 0,04 | |
| Fundació Puigvert | Barcelona | 1 | 1 | | | 65.082,77 | 27.729,48 | 92.812,25 | 0,50 |
| Fundació Sardà Farriol | Barcelona | | 1 | | | | 61.510,99 | 61.510,99 | 0,33 |
| Hospital Universitari de Bellvitge | Hospitalet de Llobregat | 5 | 9 | | 1 | 611.016,06 | 527.657,09 | 1.138.673,15 | 6,13 |
| Hospital de la Santa Creu i Sant Pau | Barcelona | 8 | 10 | | 3 | 1.428.272,05 | 667.563,21 | 2.095.835,26 | 11,28 |
| Hospital de Terrassa | Terrassa | | 1 | | | | 35.313,05 | 35.313,05 | 0,19 |
| Hospital del Mar (IMAS) | Barcelona | 1 | 4 | | | 0,00 | 144.114,59 | 144.114,59 | 0,78 |
| Hospital Universitari de Girona Dr. Josep Trueta | Girona | | 3 | | | | 123.642,41 | 123.642,41 | 0,67 |
| Hospital Universitari Germans Trias i Pujol | Badalona | 5 | 6 | | | 629.367,70 | 296.915,19 | 926.282,89 | 4,99 |
| Hospital Universitari de Tarragona Joan XXIII | Tarragona | 2 | 3 | | | 175.647,02 | 64.040,19 | 239.687,21 | 1,29 |
| Hospital Mútua de Terrassa | Terrassa | | 1 | | | | 29.780,20 | 29.780,20 | 0,16 |
| Hospital Sant Joan de Déu | Esplugues de Llobregat | 1 | 6 | | | 113.817,66 | 172.378,81 | 286.196,47 | 1,54 |
| Hospital Sant Joan de Déu (Salut Mental) | Sant Boi de Llobregat | | 2 | | 1 | | 60.266,21 | 60.266,21 | 0,32 |
| Hospital Vall d'Hebron | Barcelona | 8 | 14 | 1 | 2 | 2.054.648,71 | 594.701,81 | 2.649.350,52 | 14,26 |
| Hospital Verge de la Cinta | Tortosa | | 1 | | | | 39.561,36 | 39.561,36 | 0,21 |
| ICS - Divisió Hospitalària | Barcelona | | 3 | | 1 | | 252.463,90 | 252.463,90 | 1,36 |
| Institut Ciències Cardiovasculars de Catalunya (ICCC) | Barcelona | | 2 | | | | 113.281,85 | 113.281,85 | 0,61 |
| Institut de Ciències Neuro lògiques i Gerontològiques (UIC) | Barcelona | | 1 | | | | 49.340,00 | 49.340,00 | 0,27 |
| Institut d'Investigacions Biomèdiques August Pi Sunyer (IDIBAPS) | Barcelona | 11 | 24 | 2 | 3 | 2.603.110,93 | 1.437.523,21 | 4.040.634,14 | 21,75 |
| Institut d'Investigacions Químiques i Ambientals de Barcelona | Barcelona | | 1 | | | | 92.012,52 | 92.012,52 | 0,50 |
| Institut de Recerca Biomèdica de Barcelona | Barcelona | 1 | 3 | | | 220.963,33 | 149.558,68 | 370.522,01 | 1,99 |
| Institut de Recerca en Ciències de la Salut (IRCS) | Reus | 1 | 1 | | | 103.307,53 | 17.934,93 | 121.242,46 | 0,65 |
| Institut Català d'Oncologia (ICO) | Hospitalet de Llobregat | 2 | | | | 703.221,27 | | 703.221,27 | 3,79 |
| Institut de Bioquímica Clínica | Barcelona | | 1 | | | | 100.590,02 | 100.590,02 | 0,54 |
| Institut de Recerca Oncològica (IRO) | Hospitalet de Llobregat | 1 | 1 | | | 115.258,03 | 18.105,47 | 133.363,50 | 0,72 |
| Institut Municipal de Recerca Mèdica (IMIM) | Barcelona | 3 | 9 | 1 | 3 | 651.755,89 | 724.229,27 | 1.375.985,16 | 7,41 |
| Institut Municipal de la Salut (IMAS) | Barcelona | 1 | 2 | | | 101.365,57 | 48.755,38 | 150.120,95 | 0,81 |
| Institut Pere Mata | Reus | | 1 | | | | 68.500,00 | 68.500,00 | 0,37 |
| Institut Universitari Dexeus | Barcelona | | 2 | | | | 34.332,58 | 34.332,58 | 0,18 |
| Universitat Pompeu Fabra | Barcelona | | 2 | | | | 160.115,21 | 160.115,21 | 0,86 |
| TOTAL | - | - | - | 5 | 17 | 10.566.859,09 | 8.009.119,51 | 18.575.978,60 | 100,00 |

Table 3
Co-ordinating centres of centre networks and the area of biomedical science in Catalonia 2002

| Centre | Area of biomedical science |
|--|--|
| Fundació Parc de Recerca Biomedica de Barcelona | The integration of clinical, molecular and epidemiological research in human genetics |
| Hospital Vall d'Hebron | Cardiovascular |
| Institut d'Investigacions Biomèdiques August Pi Sunyer (IDIBAPS) | Physiopathology and new forms of treatment for hepatic, gastroenterological and pancreatic diseases Metabolism and nutritional diseases |
| Institut Municipal d'Investigació Mèdica (IMIM) | Epidemiology and public health |

Table 4
Co-ordinating groups of group networks and the area of biomedical science in Catalonia 2002

| Centre | Area of biomedical science |
|--|--|
| Agència d'Avaluació de Tecnologia i Recerca Mèdiques | Research into health results and health services (IRYSS network) |
| Centre de Regulació Genòmica (CRG) | Genotyping and genetic psychiatry |
| Facultat de Medicina (UdL) | Neuro-oncology |
| Hospital Universitari de Bellvitge | Clinical and molecular epidemiology of pneumococic disease in Spain |
| Hospital de la Santa Creu i Sant Pau | Hematological neoplasms Sudden death Study of the pathogenic and physiopathological bases of diseases of the exocrine pancreas and their applications in diagnosis and treatment |
| Hospital Sant Joan de Déu (Salut Mental) | Research network on results applied to managing disability and mental health |
| Hospital Vall d'Hebron | Network involved in the study of transplant infection (RESITRA) Molecular oncology in pediatrics |
| ICS - Divisió Hospitalària | Prevention and promotion of health in primary health care |
| Institut d'Investigacions Biomèdiques August Pi Sunyer (IDIBAPS) | Nutrition and cardiovascular disease HIV infection and its complications Diabetes mellitus and its complications |
| Institut Municipal d'Investigació Mèdica (IMIM) | Cardiovascular Cancer of the urinary bladder Prenatal and postnatal exposure to environmental pollutants, diet, foetal growth and neuroimmunoendocrine development |

The centres that participate in the highest number of centre networks are IDIBAPS, which participates in 11 centre networks of the 13 that were successful, and the Hospital Vall Hebrón and the Hospital de la Santa Creu i Sant Pau, both of which participate in 8 networks.

The centres that participate via research groups in the highest number of group networks is again IDIBAPS, which participates in 24 group networks out of the 56 that were successful; the Hospital Vall Hebrón with 14 and the Hospital de la Santa Creu i Sant Pau with 10, followed by the IMIM, which participates in 9 networks. All centres that participate in a group network do so with one group per network.

4 The leadership of research networks that received funding

As mentioned above, each research network has a network co-ordinator which has the function of co-ordinating the actions of the different nodes that make up the network so as to maximise the complementarity of the individual actions at each node.

Table 3 shows the centres in Catalonia that are network co-ordinators in centre networks.

Table 4 shows the centres in Catalonia with groups that are network co-ordinators in group networks.

5 (38.5%) out of the 13 centre networks are co-ordinated by centres in Catalonia, and 17 (30%) out of the 56 group networks are co-ordinated by groups based in centres in Catalonia.

Catalonia is the Autonomous Regional Community that has the most centres and groups as well as researchers that participate in the research networks. Funding allocated to centres and groups in Catalonia is the highest for any Autonomous Regional Community in Spain.

5. Concluding comments

The experience of this first round of grants to set up and develop biomedical research networks has been extremely positive for Catalonia. Catalonia is the Autonomous Regional Community that has the most centres and groups as well as researchers that participate in the research networks. Funding allocated to centres and groups in Catalonia is the highest for any Autonomous Regional Community in Spain. Furthermore, the results in terms of the high number of research networks co-ordinated by centres and groups in Catalonia were also highly positive.

These figures reflect the high concentration of scientific activities in the biomedical sciences in Catalonia. Besides strengthening the position of Catalonia as a leader in the area of biomedical research, the maintaining of this endeavour will serve to promote the quality of science in Catalonia and also increase the quality of life of the population.