

The European Molecular Biology Laboratory's position on the European Commission's proposal for Horizon 2020

I. Preamble

EMBL welcomes the current Proposal for a Regulation establishing Horizon 2020¹, which has the potential to create a financial backbone for European research that will help to support basic research, address societal challenges, and facilitate recovery from the financial crisis.

EMBL is Europe's intergovernmental research organisation for molecular biology, supported by 20 member states and one associate member state. Its missions are basic research, service provision, advanced training, technology development, and technology transfer. EMBL has a leading role in the integration of life science research in Europe through the development of policy and the participation in research projects, including several ESFRI research infrastructure projects. EMBL is a founding member of EIROforum.

EMBL pursues excellence in all its research activities and is a world leader in life science research. It promotes interdisciplinarity, a key to future research progress, and it develops technology and instrumentation needed to solve tomorrow's research problems. EMBL is the centre of an international network of collaborations and joint research activities that integrates and adds value to Europe's life science research.

EMBL's key contribution to the development of excellence of life science research in Europe has been acknowledged by the EC. Throughout the years, EMBL has become a major beneficiary of the Framework Programme – EMBL has so far received €154m from FP6 and FP7. With this in mind, EMBL would like to present its position on the H2020 proposal. This position paper addresses only those parts of the H2020 proposal that are of particular interest to EMBL.

H2020 will provide many opportunities for EMBL to pursue new research activities, foster integration and help deliver the European Research Area. EMBL's primary concern is that the level of funding for basic research remains high and that scientific excellence remains the main criterion for providing financial support, while mechanisms are developed that will better integrate the less developed regions – in particular, in central and eastern EU Member States – and help them to reach their full potential.

Considering the importance of research for the future development of the EU, the overall budget of H2020 should be, in our opinion, even larger. The increase in the budget of the ERC is very positive and will help to make this a lasting success. However, we are disappointed with the low level of funding increase that has been allocated to research infrastructures and the Marie Curie Actions.

¹ Proposal for a Regulation establishing H2020, the new Framework Programme for Research and Innovation (2014-2020) COM(2011) 809final.

II. Excellent Science

- **European Research Council**

The ERC is the most important and influential funding body for basic research in Europe and as such is a key player in shaping the future of European science and its actors, especially in areas that are at the frontier of research. EMBL, therefore, welcomes the ERC's steep budget increase within the current proposal.

Thanks to the independence given to the ERC and the hands-off approach by the Commission, the ERC has been able to function successfully in an autonomous manner. EMBL would welcome further moves towards independence for the ERC in the future.

The current split between starting and advanced researchers should be complemented by a transition grant, which could be called a 'consolidator grant', to help cutting-edge researchers at every stage of their early careers to find the right funding for their science and career.

- **Marie Curie Actions on skills, training and career development**

Transnational mobility is one of the pillars of the European Research Area, and the Marie Curie Actions are an essential element – their continuation and simplification in H2020 is welcomed. The EC's target to raise the number of cross-sector and cross-country circulations from 50 000 researchers to 65 000 by 2020 is highly desirable. The increase of the budget from €4.7bn in FP7 to €6.5bn in the new proposal is considerable. However, a comparison should take into account the overall increase of the framework budget in general and here we regret to see a decrease of the Marie Curie budget from 9% to 7%, which does not mirror the value of these actions for the ERA.

EMBL recommends an extension of Marie Curie Actions, such as a COFUND-like scheme for graduate schools and early stage research training programmes that provides funding for short-term placements for PhD students to participate in specialised training activities, for example, in bioinformatics.

EMBL is concerned about the requirements for ITN funding, especially with respect to the following two aspects:

1. Pre-defined PhD thesis research programmes

It is a particular strength as much as an integral part of the training of a PhD researcher to learn how to do science and how to develop a research curriculum in order to obtain meaningful results in an efficient way. If this path is laid out from the beginning, one of the most crucial aspects of PhD training is lost. Instead, EMBL would suggest finding a balance by combining a research goal with a good mentoring scheme.

2. The obligation to have the highest possible industry involvement

EMBL is open to all kinds of collaborations and placements as long as they evolve through project-driven needs. Mandatory placements imposed by programmatic schemes rather constrain the successful completion of predoctoral research since they are prone to interfere with the efficient path towards obtaining envisaged results. More flexible provisions (on a policy level as much as financially) for individual and voluntary industry placements are regarded as a more promising way to encourage academic-industrial exchange *per se*, and even more in the framework of PhD thesis research in basic life science research.

- **European Research Infrastructures (including e-Infrastructures)**

EMBL provides key research infrastructures mainly in the areas of structural biology and bioinformatics to its member states and beyond. It coordinates two ESFRI projects (ELIXIR and Euro-BioImaging) and is involved in five other ESFRI biomedical projects. All biomedical research infrastructures are distributed and face challenges that could be alleviated by EU support, especially in their coordination activities at the European level. EMBL believes that EU financial support to contribute towards the transnational activities within the operating costs of such research infrastructures would represent real EU added value, and would help to ensure that the ESFRI research infrastructures were realised more quickly.

ELIXIR will play an essential integrating role in the European life sciences and will require additional EU support to integrate new types of data from the other ESFRI BMS projects and to link to existing and emerging e-infrastructure projects, such as high performance and cloud computing. ELIXIR has attracted significant investments of approximately €122m to construct the infrastructure but funding the operations and European coordination remains difficult. Euro-BioImaging will provide imaging facilities across Europe and is strongly supported by a large number of countries and institutions. We expect that it will also need additional financial support for its transition from the preparatory phase to becoming fully operational.

In our opinion, the current proposed budget for research infrastructures of €2.8bn is disappointingly low. The budget of €1.7bn for research infrastructures in FP7 was already widely regarded as insufficient. The H2020 proposal of €2.8bn, whilst representing an increase, still leaves the Research Infrastructure programme with only 3.2% of the budget, a figure which is too low given the positive impact research infrastructures have on society and the economy. In addition to supporting distributed research infrastructures, broadening the funding for transnational user access is also necessary to include areas such as electron microscopy and biomedical imaging, that have until now been unfunded.

EMBL would welcome an improved information flow among scientists and responsible authorities in respective EU member states with regard to the use of Structural Funds for the development of national research infrastructures, including those participating in ESFRI projects.

III. Societal Challenges

- **Health**

New paradigms and technologies are revolutionising the life sciences and are gradually moving from 'small' to 'big science'. Interdisciplinarity and transnational collaborations have become the norm and are greatly benefitting from EU funding. The support provided to collaborative projects has, in our opinion, made major contributions to cutting-edge research and the structuring of scientific communities in Europe. A large number of the proposed priorities are of interest to EMBL, including the continuation of the Innovative Medicine Initiative (IMI). However, EMBL would like to see more favourable IPR rules than exist at present for academic organisations participating in IMI.

It is essential that strong support for basic research in the area of health is maintained and that the selection of projects for translational research consistently follows stringent criteria. The overall budget that has been allocated to health research in H2020 is appropriate if a significant proportion is allocated to basic research activities.

- **International cooperation**

EMBL supports the opening up of H2020 to researchers from outside of Europe, in particular from countries such as Russia, the USA, Australia and India.

- **Technology transfer**

An essential step in the innovation cycle is the transfer of knowledge to facilitate the translation of basic research results into practical applications that are of general benefit to society. Technology transfer is one of EMBL's missions and we uphold the transfer of successful models broadly in Europe by supporting networks of technology training offices and training activities.

Proof of concept funding, to bridge the 'valley of death' between basic research and development projects that have reached a level of maturity of interest to industry, should be available for projects from all parts of H2020. This should represent a continuous pipeline of support whereby projects in 'Excellent Science' and 'Societal Challenges' could apply for follow-on funding through the 'Industrial Leadership' theme.

IV. EMBL's position on the proposal for a Regulation laying down rules for participation and dissemination² in Horizon2020

EMBL welcomes the EC proposal for participation and dissemination in H2020, which aims overall to simplify and streamline the respective rules. Simplification is paramount and administrative burdens must be reduced.

On the other hand, simplification should not have negative effects on beneficiaries. In this respect, reimbursement of direct and indirect costs should be determined in a manner such that beneficiaries do not have a deficit. In addition, scales of unit costs should be an optional mechanism as organisations, including EMBL, have their own systems in place. Some of the instruments in the proposal, for example counting annual productive hours, may actually present an increased administrative burden as well as not necessarily reflecting the real work of researchers. Finally, EMBL is concerned that access rights to background and results might be unnecessarily restricted if the provisions in the proposal are implemented.

² COM(2011) 810 final, 2011/0399 (COD)