Journal of Crohn's and Colitis, 2016, 363–370
doi:10.1093/ecco-jcc/jjv237
Advance Access publication January 7, 2016
Viewpoint

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How to Apply for and Secure EU Funding for Collaborative IBD Research Projects

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Abstract

The European Union offers opportunities for high-level of funding of collaborative European research. Calls are regularly published: after the end of the FP7 funding programme the new round of Horizon 2020 calls started in 2015. Several topics are relevant to inflammatory bowel disease (IBD) challenges, including chronic disease management, biomarker discovery and new treatments developments. The aim of this Viewpoint article is to describe the new Horizon 2020 instrument and the project submission procedures, and to highlight these through the description of tips and tricks, taking advantage of four examples of successful projects in the field of IBD: the SADEL, IBD-BIOM, IBD Character and BIOCYCLE projects.

Keywords: Crohn disease; ulcerative colitis; research; European commission; funding

1. Introduction

In the context of the new round of Horizon 2020 calls for proposals and the launch for the first time of an open-access European Union (EU) Project Forum at the ECCO'16 Congress in Amsterdam, this seems an opportune time to provide an insight into the funding mechanism for Horizon 2020 and the opportunities that it offers the inflammatory bowel disease (IBD) community.

This Viewpoint Article was initiated by asking the different project coordinators involved in the EU Project Forum to inform *JCC* readers of their experiences in gaining EU funding and to briefly describe their projects. The aim is to equip the reader with the knowledge required to submit persuasive applications for EU funding and to report individual experiences gained with respect to the SADEL, IBD-BIOM, IBD Character and BIOCYCLE projects.

2. What is Horizon 2020?

Horizon 2020 is the financial instrument for research and innovation in the EU. It will run from 2014 to 2020 with a budget of nearly €80 billion.

Horizon 2020 is the successor to the Seventh Framework Programme for Research (FP7). It is a single programme bringing together FP7, Euratom, the Competitiveness and Innovation Programme (CIP) and the European Institute of Innovation and Technology (EIT). In comparison with FP7, Horizon 2020 provides major simplification through a single set of rules.

By means of this programme, the EU will finance interdisciplinary projects that effectively address the economic and social challenges faced by the EU. The programme aims to secure Europe's global competitiveness and is part of the drive to create new jobs and growth in Europe by:

- Coupling research to innovation – from research to retail, covering all forms of innovation;
- Stimulating further innovation, through the introduction of 'close-to-market actions', e.g. prototyping, testing and demonstrating;
- Focusing on societal challenges in the EU, e.g. with respect to health, clean energy and transport;
- Achieving greater involvement of small and medium-sized enterprises (SMEs).[1]

Horizon 2020 is built around three pillars:

1. Support for 'Excellent Science' – including grants for individual researchers from the European Research Council (ERC) and Marie Skłodowska-Curie fellowships (formerly known as Marie Curie fellowships);
2. Support for 'Industrial Leadership' – including grants for SMEs and indirect finance for companies through the European Investment Bank and other financial intermediaries;
3. Support for research to tackle 'Societal Challenges'.[2]

The European Commission has published details of Horizon 2020 reviewers on the Participant Portal; first and last names, nationality, field of expertise and last employer's name are available for 23 reviewers.

3. What are the upcoming opportunities in health research?

3.1. Societal challenges – personalized medicine

The Horizon 2020 Societal Challenges Programme reflects the policy priorities of the Europe 2020 strategy and addresses major concerns shared by people across Europe and beyond. The concerns of citizens and EU policy objectives (regarding climate, environment, energy, transport etc.) cannot be addressed and achieved without innovation and multidisciplinary collaborations.

Societal Challenges funding will be focused on the following calls:

- Health, demographic change and well-being;
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the bioeconomy;
- Secure, clean and efficient energy;
- Smart, green and integrated transport;
- Climate action, environment, resource efficiency and raw materials;
- Europe in a changing world: inclusive, innovative and reflective societies;
- Secure societies – protecting the freedom and security of Europe and its citizens.[2]

On October 13, 2015, the EU Commission launched new calls under the 'Societal Challenges' pillar. One call dedicated to personalized medicine,[3] with a budget of €659 million, offers many funding opportunities. The European Commission has stated that this call aims to 'boost European industry and the so-called silver economy by investing in strategies for earlier and more effective prevention, diagnosis and treatments, and to help Europe address the ageing population and chronic disease burden'.[4]

3.2. The EU health strategy 'Together for Health'

The new EU Health Programme came into force in March 2014. With a budget of €449.4 million, this programme is the main European Commission instrument for implementation of the EU health strategy, the goal of which is to complement, support and add value to the policies of Member States in order to improve the health of EU citizens and reduce health inequalities. The programme aims to:

- Promote health, prevent diseases and foster supportive environments for healthy lifestyles, taking into account the 'health in all policies' principle;
- Protect EU citizens from serious cross-border health threats;
- Contribute to innovative, efficient and sustainable health systems;
- Facilitate access to better and safer healthcare for EU citizens.[5]

The Health Programme is managed on behalf of the European Commission by the Consumers, Health and Food Executive Agency.[6] Any upcoming call will be published on their website.

3.3. The Innovative Medicines Initiative

The Innovative Medicines Initiative[7] (IMI) is a public–private partnership between the EU and the European Federation of Pharmaceutical Industries and Associations.[8] It aims to create better conditions for biopharmaceutical innovation in Europe and accelerate the development of better and safer medicines for patients. Through its unique and innovative funding scheme, IMI supports research projects in the areas of safety and efficacy, knowledge management and education and training.[9] The research activities supported under the IMI are open to all research actors, provided that the activities are performed within Europe.

The IMI launched its sixth call for proposals relating to IMI2 in October 2015. Applicant consortia are invited to submit a proposal for each of the listed topics that is relevant to them. The scientific goals and work packages have already been described for all topics. Each proposal should address all aspects of the topic to which the proposal relates. The size and composition of each consortium should be adapted to reflect the scientific goals and the expected objectives.

4. Tips – help in preparation/submission of a project

4.1. National contact points

Horizon 2020 is divided into a range of work programmes and funding is based on competitive calls. Consortia of researchers (including industry) can respond to these calls.

The network of National Contact Points (NCPs) is the main structure through which guidance, practical information and assistance are provided on all aspects of participation in Horizon 2020. NCPs are national structures established and financed by governments of the 28 EU member states and the states associated with the framework programme. Each area of Horizon 2020 has an NCP that can be contacted for more information.

The NCP systems vary from one country to another, from highly centralized to decentralized networks, and involve a number of very different actors, from ministries to universities etc. It is not the role of the NCP to assist in the development of written proposals. They can assess whether eligibility criteria have been met, but are unable to advise on the likely success of a proposal.

4.2. Steps in submission and submission procedures

The competition for funding of proposals relating to Horizon 2020 is tough. The guidance below provides an introduction to Horizon 2020 and explains the main steps to be followed when answering a call for proposals.

Note that there are two submission procedures for calls within Horizon 2020.

- The one-stage submission scheme;
- The two-stage submission scheme.

The one-stage submission scheme requires one full project proposal to be sent before the stated deadline.

The two-stage submission procedure allows a consortium to submit a project abstract focusing on the scientific aspects, the project's goals and the impacts. The abstract will then be reviewed and the consortium will be invited to send a full proposal if it successfully passes this first evaluation.

4.3. Proposal preparation

Various documents are relevant to preparation of a proposal. First, all Horizon 2020 calls are published on the Participant Portal[10] of the European Commission. Selecting the appropriate call and relevant project partners is an essential first step when preparing a project. The section 'How to participate' on the Participant Portal proposes a number of manuals that can guide you through the procedure. The H2020 Online Manual describes all the steps that need to be followed, the Reference Documents propose various templates, evaluation forms and guidance notes, and the Financial Viability Self-Check tool assists in simulating the viability check of your organization.[11]

A proposal always consists of two main parts:[11]

- **The Technical Annex,** a document that presents, in as clear and concise a manner as possible, all activities, actions and tasks that the partners are committed to undertaking in order to fulfil the scientific and research objectives stipulated in the contract;
- **The Administrative Forms**, which contain the administrative and organizational information for the project as well as an abstract and the budget.

It is crucial to respect the format as well as all the components of a proposal, which are equally important, and it must be remembered that clarity is a key prerequisite if a proposal is to be successful. Evaluators are also looking for a balance between partners with regard to responsibilities and funding.

It is important not to lose sight of the anticipated impact of the proposed project. A proposal that describes research objectives and methods extremely well has little chance of success if the project management structure is not clearly elaborated and convincing, or if the exploitation planning is insufficiently described.[11]

4.4. Proposal submission and evaluation

The H2020 Online Manual provides detailed step-by-step guidance on how to submit a proposal electronically. Submission should be made online. It must be ensured that the proposal complies with all formal requirements. Some NCPs offer to review proposals. If this opportunity is offered, get in touch with your NCP early. Even if proposals can be submitted in any official language of the EU, submission of the proposal in English is recommended.

Remember that call deadlines are absolute and must be respected. A proposal will be rejected if it is sent even 1 minute too late. Note that it is possible to submit a proposal several times as documents can be revised and continually enhanced up to the deadline. Each newly submitted version will overwrite previous versions, but once the deadline has passed, no further correction is possible.

After the submission, each proposal is evaluated individually by independent experts, the evaluators. It might be useful to consult the 'Guidance for evaluators of Horizon 2020 proposals',[12] which answers the most frequently asked questions about Horizon 2020. All proposals with a positive evaluation are ranked and will be funded according to their position in the ranking and the available budget. The evaluation procedure can take up to a maximum of 5 months.

5. SADEL project

5.1. Introduction

The main goal of the SADEL (Scaffolds for Alternative DELivery) project is to develop the first generation of oral biotherapeutics for IBDs.

Within the European Commission's FP7, a consortium of nine partners from six different European countries started collaborating on SADEL in 2012. Taking advantage of the Nanofitin protein scaffold, the SADEL project aims to develop a blocking protein therapeutic deliverable orally for the treatment of IBD. The clinically validated target chosen is tumour necrosis factor-α (TNF-α), a cytokine considered a key regulator of immune cells and involved in systemic inflammation.

Objectives of this project are:

- Better targeting of the inflammation site in the gut via oral administration;
- Decreasing systemic exposure and related side effects and reducing immunogenicity;
- Providing an efficient, safe and affordable drug in a format that increases patient comfort and treatment compliance.

In vivo evaluation based on rectal administration was performed as preliminary screening before oral administration. The results were beyond the consortium's expectations, as several non-optimized Nanofitins reached a level of efficacy similar to the positive commercial control in the gold standard evaluation animal model. Such efficacy was confirmed orally in a curative model, without any formulation optimization. The manufacturing process was translated to pilot scale, and the manufacturing yield has been increased by nearly 50-fold, which is extremely promising for industrialization.

The expected final outcome of the project is preparation of the data package for a first-in-man administration. Clinical development of the lead compound following the end of the 5-year SADEL project has already been covered by an agreement with a European industrial partner, Ferring Pharmaceuticals.

5.2. Experience and advice on proposal preparation

Any application for an EU project must address the topic cited in the call and be geared towards delivery of the desired outputs through an approach that is both ambitious and demonstrates a significant likelihood of success. The call under which the SADEL project was initiated was both broad and specific, asking for the development of non-antibody biologics for targeted therapies. This description was 100% in line with Affilogic's activities, but we also felt that we needed to submit a proposal that would optimally exploit our non-antibody technology. One major difference between antibodies and non-antibody biologics was expected to be the latter's potential for non-intravenous administration. Bearing in mind that opting for a non-validated target in an orphan indication would have been extremely risky, we were very careful in deciding where to place the focus for innovation, and selected the route of administration as our primary difference. The target is well known, the models are available and the indication for oral administration is obvious. IBD is indeed a most demanding indication, and by addressing it from the intestinal side and being agnostic about the local or systemic effect, we doubled our chances of eliciting an anti-inflammatory effect. Once the main challenge had been decided, it was all about increasing the chances of success.

One non-technical aspect of great importance in maximizing the likelihood of success is very careful choice of consortium partners.

Key competencies and other aspects relevant to achievement of the project's aims must be identified and taken into account. If the project entails commercialization of a product or health-related programmes involving drug development, it is important to have around the table a stakeholder able to develop and commercialize the outputs. An industrial partner should be involved in the consortium during the preparation phase or, as in the case of SADEL, immediately after the beginning of the project in order to help manage the project and improve the target product profile. For SADEL, we have the chance of benefiting from the significant experience of Ferring Pharmaceuticals in IBD.

It is possible to work with a consultant to set up the consortium (as was done for SADEL) or to screen on the internet and contact persons directly. You should not hesitate to initiate contacts even with key opinion leaders, renowned researchers or clinicians, because if the project is really interesting it will attract their interest. A number of partner search services are provided directly by the European Commission (e.g. via the H2020 Participant Portal) and can be used as a starting point.

Capability is one key criterion in selecting consortium partners. Willingness, alignment with personal objectives and motivation are also very important but are extremely difficult to assess beforehand. In order to assemble the best team possible, we relied heavily on personal networks, personal meetings and experience in former collaborative projects. Size matters: obviously, the smaller the group, the easier it is to manage. Insofar as it was possible, we avoided duplication of capabilities while maximizing complementary competencies. This approach helps in achieving a very clear structure, while also allowing thorough discussions.

Even though the proposal will be reviewed by experts in the field, it should not be crammed with scientific terms (technical or clinical), especially when it comes to sections that are not describing the work plan of the project. The proposal should, as far as possible, address the big picture in explaining the significance of the project and its mid- and long-term impacts at the European level – taking into account social, economic and environmental considerations when possible. You might consider that such project outcomes are implied but they should nevertheless be clearly stated for the reviewer as take-home messages to emphasize the project's benefits. With his usual sense of humour, one of our partners suggested that the experts would not be as good as anyone in the team, precisely because they were not in the team.

A further valuable piece of advice is to hold a face-to-face meeting as early as possible during development of the proposal. It might be useful to sign a confidentiality agreement among partners to enable free discussion of all aspects of the project prior to the protection offered by the consortium agreement. All considerations relating to intellectual property (e.g. ownership of results and exploitation rights) should be covered at the earliest possible stage to defuse any disagreements on these thorny topics.

5.3. Experience and advice on the submission/grant signing process

Submission of a project entails a significant amount of administrative paperwork, and this is especially true as one moves to step 2 in the submission of an FP7 or (now) a Horizon 2020 programme. It is very advisable to identify one administrative contact person for each partner as early as possible during the submission phase (this is generally not a scientific expert) to facilitate and accelerate exchanges. This will in particular assist the coordinator in the task of collecting all the required administrative data.

It goes without saying (but it is nevertheless better to say it!) that one must be prepared in advance and anticipate technical issues regarding the submission platform due to an excessive number of connections. Submission should take place at least a few hours before the deadline, and preferably on the preceding day to be on the safe side.

As regards negotiation with the European Commission, be ready to allow for some changes in budget. In the case of SADEL, the decision to fund one additional project with the fixed envelope that was allotted to the call meant that we had to reduce the programme budget and duration by 1/6th. There is little that can be done about such changes, and you need to be sufficiently flexible to keep the original promises, even under the altered conditions. SADEL originally planned to start a Phase I study in the sixth year, but since we had to reduce the duration of the project to 5 years, patient recruitment is no longer planned within this framework.

With respect to the grant signing process, as soon as a project officer has been assigned, communication with him/her is of the utmost importance to ensure that the process occurs smoothly. This is especially important, given that online platforms from the European Commission are sometimes very confusing.

5.4. How to get the project started and guide it throughout the project phases

The kick-off meeting should be conducted face to face to immediately establish firmer links between the participants, who are due to work together for several years on the project. This is all the more important if the persons in question have never met before; the impact of the human dimension of a consortium on a project's success should not be underestimated.

For SADEL, we organize regular discussions among partners: every 2 months a Steering Group meeting by TC/WebEx enables all pertinent scientific and technical aspects to be covered. Face-to-face meetings are also key: every 6 months a Board of Partners meeting is organized to take more strategic decisions on the project's direction. Each time, a partner invites the others to its facilities/city to make the meeting friendlier. And before a full day of discussions a relaxed, social dinner is organized.

It is important that contacts for each partner are clearly identified, comprising one person with a scientific background and one with an administrative background (the latter having already been identified before the start of the process) as well as one person – who might be different – who will review all communication/dissemination documents. Communication on the outcomes is an integral part of a project and is highly recommended by the European Commission. The consortium agreement determines the document approval process by all partners, knowing that in the end it is easier to have one person per partner who is responsible for the approval as this will avoid an extended list of recipients and speed up the process.

We have also found that, even though we have had very few opportunities to meet the project officer face to face, it has been beneficial to put any questions to the officer. Major issues are best handled in person but in our case it proved very helpful to validate decisions taken during the course of the project and their administrative consequences.

6. Biomarkers for clinical decision-making in IBD, an unmet clinical need: the IBD Character and IBD BIOM projects

6.1. IBD Character

IBD Character is a multicentre consortium of leading academic and industrial SME researchers in IBD who are studying genomics, epigenomics, proteomics and metagenomics in newly diagnosed,

treatment-naive IBD (Figure 1). A large prospective multicentre cohort of 675 newly diagnosed IBD patients, symptomatic controls and healthy volunteers has now been recruited across five clinical centres in Europe.

Objectives of this project are:

- Development of robust biomarkers for clinical diagnostic and prognostic applications in IBD during early manifestations;
- Development of biomarkers that can stratify IBD according to disease progression and response to therapies;
- Integration of multi-omic datasets to gain a better understanding of disease pathogenesis;
- Identification of novel therapeutic targets and mechanisms of initiation of disease.

Blood, tissue and faecal samples from well-phenotyped individuals are currently being analysed at scientific centres across Europe using state-of-the-art multi-omic technologies.[13,14,15] Data generated from these analyses will provide a molecular snapshot of IBD in its early manifestation and early analysis has already identified novel biomarkers in IBD.[16] Techniques to integrate these multidimensional datasets will be developed within the consortium. These data will provide a platform for novel biomarker discoveries and allow a better understanding of the biological processes involved in the pathogenesis of IBD.

6.2. IBD-BIOM

IBD-BIOM is a multidisciplinary consortium of leading academic and industrial SME researchers in IBD. A major strength of the IBD-BIOM study design is early generation of data in parallel with prospective recruitment of newly diagnosed IBD patients. A large number of high-quality, well-phenotyped biobanked patient samples ($n > 6500$) have been distributed and analysed by scientific partners throughout Europe. Significant progress has been made by our analytical partners, global leaders in their respective disciplines; epigenomic, glycomic, glycoproteomic and activomic technologies have been harnessed and applied to IBD research and have already yielded exciting early data and publications.[17–20]

In parallel with the ongoing scientific biomarker discovery, prospective recruitment of newly diagnosed IBD patients and controls has now been successfully completed at clinical centres. The target of 1200 patients has been met and exceeded. The novel putative biomarkers identified from the retrospective phase of the project will now be tested and validated in the large number of samples from prospectively recruited patients.

We believe that the inclusion of these complementary analyses will elucidate pathways through which environmental exposures influence IBD risk and progression and will consequently facilitate the development of novel early IBD diagnostics. A complex systems biology approach will be used to integrate, interrogate and understand this multidimensional dataset in order to achieve the aims of identifying novel diagnostic and prognostic biomarkers as well as new targets for therapeutic intervention.

The objective of this project is the development of a robust biomarker for clinical application in the diagnosis and stratification of IBD patients by:

- Complex phenotyping of IBD patients;
- Stratification of patients with IBD, in terms of disease course and response to treatment;
- Integration of genomic, epigenomic, immunological, glycomic and activomic data;
- Elucidation of molecular targets for new therapies for IBD;
- Acquisition of insights into disease pathogenesis.

6.4. Experience and advice on proposal preparation

It is important to choose the right consortium, based on the call text and the project idea. Writing a project proposal is a long process that should not be underestimated. The consortium must start to work on the project as soon as possible since it takes longer to write an EU application than one would expect. Finally, the project partitioning is also a crucial element: it has to be decided who is leading which work package and each person must be persuaded to write the required content in accordance with a clear timeline.

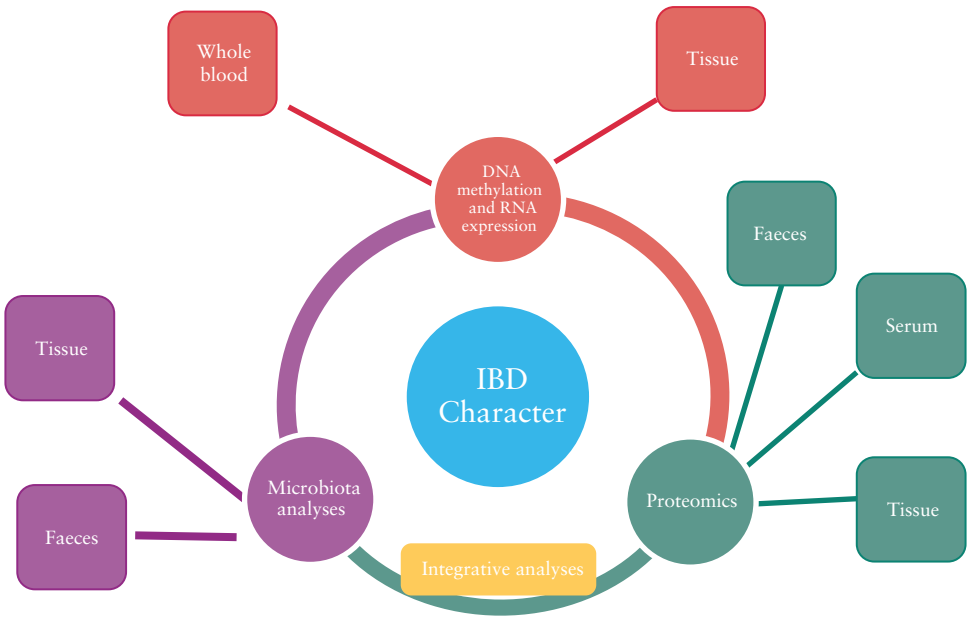

Figure 1. Planned analyses in IBD Character.

6.5. Experience and advice on the submission/grant signing process

For most EU proposals the application can be submitted as often as one wishes up until the deadline, so do not hesitate to start this process early. We would advise that validation of consortium members by the European Commission is sought as soon as possible, since failure to do so will delay signing of the grant agreement. It is advisable to draw up the consortium agreement immediately upon notification of the award as this will ease the grant preparation stage and smooth the next steps.

6.6. How to commence the project and obtain guidance throughout the project

It is necessary to arrange a kick-off meeting with all the partners at the very beginning of the project. If possible, the coordinator's finance team should be invited to discuss the main EU financial and administrative procedures.

We would strongly advise that, whenever feasible, a project administrator/co-ordinator be appointed to liaise with the EC project officer and all the partners. Do not underestimate the time spent on administrative and financial matters, especially when these involve amendments to the grant agreement.

Exchange of information among the different partners is facilitated by regular telephone conferences involving the whole consortium and the various committees that have been set up. For instance, we judged that at least one annual face-to-face meeting is necessary; this will ensure good communication among all the members, which is essential for smooth running of the project.

Always follow up on action points from meetings and telephone conferences in order to submit deliverables on time to the EC. We would emphasize the importance of starting to prepare each periodic financial and scientific report as soon as possible and of regularly reminding the partners about deadlines. It is also important to keep the EU project officer updated. Do not hesitate to contact him/her and ask for advice if unsure.

7. The BIOCYCLE project

7.1. Introduction

The main aim of the BIOCYCLE project is to test and critically assess the benefits and risks of an innovative regimen for optimizing the maintenance treatment of moderate to severe Crohn's disease. The current gold standard is a prolonged combination of anti-TNF-α and antimetabolites; the new tested regimen includes treatment cycles after prolonged remission has been reached. The cycles are characterized by periods when both drugs are administered alternating with periods when either anti-TNF-α or antimetabolites are withdrawn. The objective is to achieve benefits with respect to both safety and costs while preserving the same level of efficacy during the maintenance therapy.

The project comprises nine work packages and involves 13 partners across Europe, Israel and the USA (Figure 2), representing a multidisciplinary consortium.

The objectives of the project are:

- To conduct a Phase IV, prospective, open-labelled, randomized, controlled, multicentre, three-arm study (SPARE) to assess de-escalation strategies (anti-TNF-α withdrawal, antimetabolite withdrawal, continuation of combination therapy);
- To evaluate the impact of treatment cycles on the overall cost and cost-effectiveness of the maintenance combination therapy;
- To assess the acceptance versus reluctance of the patients, caregivers and national healthcare systems regarding the treatment cycle strategy;
- To synthesize, analyse and critically assess the data generated by the BIOCYCLE project for performance of a knowledge-based appraisal of the treatment cycle concept;
- To activate the most appropriate dissemination actions and communication channels to accelerate the implementation of the best practices for managing patients with moderate to severe Crohn's disease during remission periods.

The consortium will generate and collect a large number of clinical data (the first specific objective is to run the SPARE clinical study), cost-of-illness and cost-effectiveness data, and information

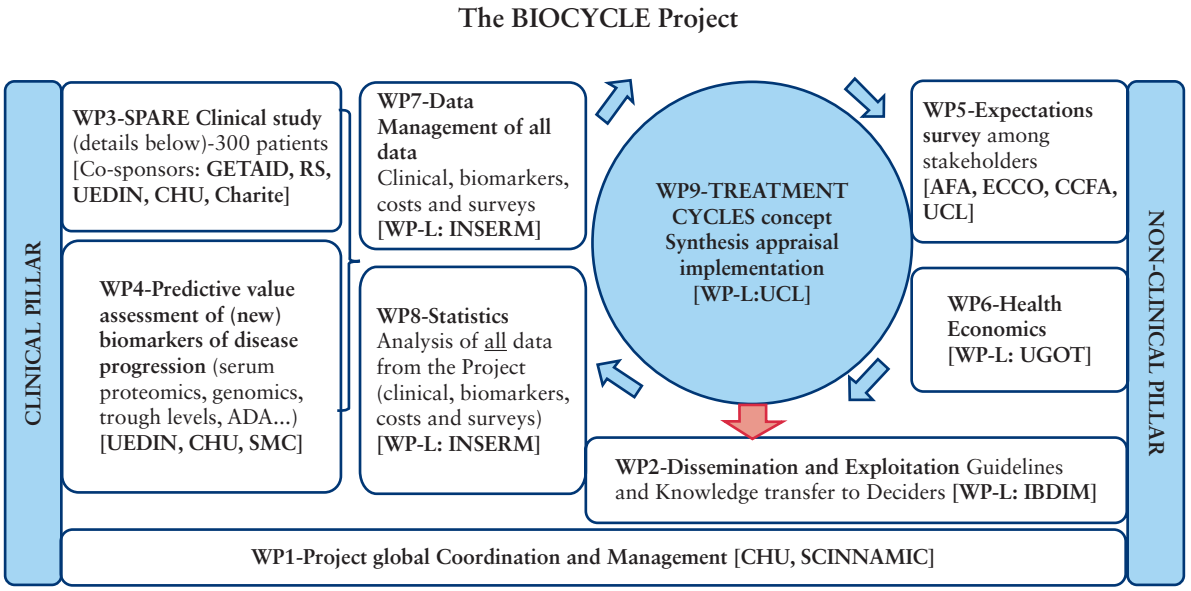

Figure 2. BIOCYCLE at a glance.

relating to the expectations of patients, caregivers/providers and healthcare systems regarding withdrawal of either anti-TNF-α or antimetabolites in treatment cycles, compared with combination therapy without interruption. A critical appraisal of the new regimen and its impact on overall CD management will be performed. This will progressively lead to recommendations and decision-making tools designed to appropriately optimize the maintenance therapy of patients with CD in accordance with their needs and characteristics.

7.2. Experience and advice regarding proposal preparation

The starting point is certainly a good and relevant research idea. Most of us are full of very bright research ideas, but a promising idea in itself is not sufficient. The idea has to be shared and discussed by a group of collaborators representing the heart of the future consortium. This small group of investigators will be responsible for seeing the project through to its conclusion.

Writing a description of the entire project takes much time and effort. This task must be performed by a skilled scientist very well aware of EU rules concerning European project applications and, more specifically, concerning the specific targeted action (i.e. Horizon 2020). To be homogeneous and consistent, the full application should be written or at least intensively reviewed by a single person who has to take the lead. Ideally this person should be one of the members of the small starting group of investigators. In our experience, the assistance of a scientist who specializes in EU projects has a huge impact. This person can make the project fit perfectly with the specific call. Indeed, each sentence and even each word of the project description should be tailored with this in mind, and the project must address all specific aspects of the call. To achieve this, a multidisciplinary team will usually be necessary. Thus, contacts and discussions with researchers outside one's own domains will be required and these investigators should be included in the consortium if they are motivated and adaptable. They will have to participate in the writing of specific work packages and must thus be ready to accept this workload without being sure that the project will be selected and funded.

Beyond the relevance and the scientific value of the project, careful consideration must be given to the dissemination plan and the impact of the project. These aspects are of paramount importance for the EU and, as they are beyond the scientific project itself, they are often overlooked by investigators. The dissemination plan must cover not only scientific publications but also public awareness campaigns aimed at facilitating implementation of the conclusions of the research project. The required amount of energy and brainstorming should be devoted to the question of impact, with analysis of the current situation regarding the question tackled by the project and estimation of the potential impact of dissemination and implementation of the outcomes of the project.

Overall, preparation of the project requires the investment of much time in assembling the multidisciplinary consortium, maturing the research ideas and making them fit perfectly with the call, and writing the application. In addition, financial investment is usually necessary to acquire the help of skilled people who can assist the initial small group of investigators in writing both the administrative and the scientific part of the application. In the case of the BIOCYCLE project, the expenditure had to cover the costs of two people working almost half-time for 3–6 months.

7.3. Experience and advice regarding the submission/grant signing process

The large amount of administrative work and the potential difficulty (given the multiple partners involved) in motivating partners' teams and administrative collaborators to fill in all the necessary information can represent significant obstacles in this stage of the application process. A crucial advantage is gained by having, within the coordinator's team, one resource person who has perfect knowledge of all the tips and tricks regarding these administrative tasks and is able to interact effectively with EU officers to resolve any problems. Another very important aspect is the legal status of the entities that will be part of the consortium. All these entities, which are sometimes simple associations of researchers or investigators, must have legal status in compliance with their national laws. Potential problems in this regard have to be identified and solved well in advance since many other tasks have to be done shortly before the end of the successive deadlines for the action. Beside the signing of the grant agreement between the EU and the different partners in the action, a consortium agreement must also be set up. This consortium agreement sets out the rules governing the functioning of the consortium and is an important document with respect to the rights and responsibilities of each partner and the key issue of intellectual property. Here again, the help and advice of experts in the field will be important. A high level of mutual understanding and trust between the consortium members is also essential since the final consortium agreement will have to include the specific requests from, and obligations of, a large number of collaborators. In the case of the BIOCYCLE project, for example, 13 partners had to reach a consensus on the consortium agreement. Working on an EU template will facilitate the process, as will open discussion with the partners and flexibility on the controversies that arise.

7.4. How to initiate the project and guide it through the project phases

The partitioning of the project into several work packages with different persons responsible for different packages confers a significant advantage and ensures that progress is likely to be made according to schedule. The schedule is also determined by milestones and deliverables that have been clearly defined in the project.

The consortium must very carefully follow the schedule as well as the rules of the EU: this is essential both for realization of the project and for claiming the funding for the project. The consortium must stick perfectly to the grant agreement. It is the responsibility of an executive board to meet regularly (most often virtually) to discuss issues and make sure that the action remains on track. Identification of risks and implementation of a risk management plan are also very useful and are advocated by the EU. Here, again, the help of a dedicated person or entity capable of assisting the coordinator in his/her task is important. In the case of the BIOCYCLE project, a specialist helps the coordinator in organizing executive board meetings, in requesting amendments to the grant agreement proposed by partners and in scientific and financial reporting. As the BIOCYCLE project is still in its early stages (having been launched in April 2015), no further information on these aspects can currently be reported.

8. Conclusion

The success rate of eligible proposals over the first Horizon 2020 calls was around 14%.[21] Preparing a project proposal for a Horizon 2020 call is a long and complex process and not all competitive projects are selected when they are first submitted. This article has aimed to highlight, based on the experience gained in several EU-funded projects, the problems that commonly arise during proposal writing and the criteria that must be

fulfilled if a proposal is to be successful. ECCO is looking forward to discussing these projects in greater detail during its open access EU Project Forum on March 16, 2016 at the ECCO'16 Congress in Amsterdam; this Forum will aim to facilitate exchange of knowledge and sharing of project experience and to identify potential new synergies among senior and junior researchers and among basic scientists and clinicians.

Funding

Projects presented in the manuscript were supported by the following funding: SADEL: EC Reference 278042; EC FP-7 for BIOM and Character: Reference 305479 and 305676; BIOCYCLE: EC Horizon 2020 grant agreement no. 633168 – BIOCYCLE (PHC-13–2014).

Conflict of Interest

Rahul Kalla has received speaker fees from Ferring. Nicholas T. Ventham has received financial support for research (EC grant IBD-BIOM), lecture fee(s) from Abbvie and MSD, and an MSD travel grant to attend IBD Academy and ECCO 2016. Edouard Louis has received educational grants from MSD and Abbvie, speaker fees from Abbvie, Ferring, MSD, Chiesi, Mitsubishi Pharma, Hospira and Janssen, and has served on advisory boards for Abbvie, Ferring, MSD, Takeda, Mitsubishi Pharma and Celltrion.

Author Contributions

All authors contributed to the writing of the manuscript and approved the final manuscript.

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