Establishing the molecular fundamentals of arthritic diseases – a step forward to Heal Arthritis

Sprawozdania

Informacje na temat projektu

ArthritisHeal

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Strona internetowa projektu

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Podsumowanie kontekstu i ogólnych celów projektu

12 PhD students, 7 European universities, 2 companies and 3.3 million euros are the ingredients of the ArthritisHeal project, which officially started on March 1st 2019. The four-year project is coordinated by the Leiden University Medical Center in the Netherlands. Altogether, the parties are looking for new treatments for osteoarthritis (OA) and rheumatoid arthritis (RA). The ArthritisHeal project aims to train young researchers to generate novel therapeutic targets in the two rheumatic diseases OA and RA. The therapeutic approach will be focused on the role of pro-resolving lipids, which play an important role in both diseases. By training early stage researchers (ESRs) in all aspects of (pre-)clinical research of complex diseases, they will be able to grow and become versatile researchers. Each ESR will have his/her own specialty, and interact with, and understand, researchers from other sectors and disciplines.

The overall scientific and training objectives of ArthritisHeal are:

• 12 ESRs having completed an individual PhD program to become translational researchers able to deal with challenging problems posed by complex diseases
• ESRs trained to combine clinical, biological and chemical insights to find new therapeutic targets for treatment of rheumatic diseases
• ESRs trained in academic and industrial research, outreach and communication skills
• Expansion of the number of pro-resolving lipids known to regulate OA and/or RA
• Mechanistic insights into the role of pro-resolving lipids in OA and RA models
• Validated pro-resolving lipid-based therapeutic targets in OA and/or RA

Prace wykonane od początku projektu do końca okresu sprawozdawczego oraz najważniejsze dotychczasowe rezultaty

All ESRs were successfully recruited and started their PhD training.
A kick-off meeting was successfully executed in Leiden, NL
A first training activity (LC-MS tarining) at our partner organization Sciex could be carried out on site with 8 ESRs in Darmstadt, Germany.
We organized a online mid-term/first annual meeting which was very well received by all participants.
We initiated regular online conferences bringing all members of specific work packages together on a regular basis, during our calls usually 2-3 ESRs report on their scientific progress within the different WPs
We established dissemination channels (website:https://www.arthritisheal.eu/ twitter account, LinkedIn account), got in touch with the Dutch reuma patient organization (present at kick-off) and disseminated our work in local newspapers.
Due to the Corona pandemic most of our secondments are changed to limit physical visits. As alternative we initiated several network-wide collaborations, actively exchanging samples materials and data between the partners.
Moreover we initiated and are actively pursuing a network wide preparation of defining "resolution of inflammation", gathering data on what is state of the art, what is known and what are valuable candidates for further clinical investigations.

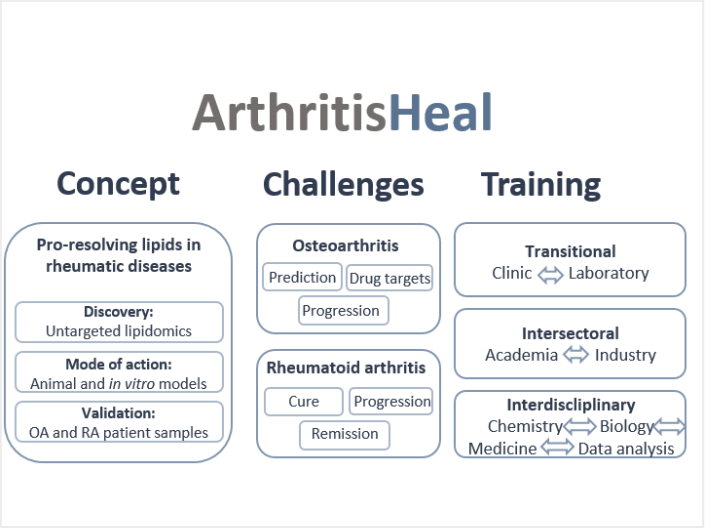
Setting up and improving our website was also leveraged as training for four ESRs, interested in webdesign.
We organized several workshops (online), rheumatology workshop organized by the Glasgow partner, also including a rheumatoid arthritis patient being an active member of the UK rheumatoid arthritis patient organization, a lipidomics workshop organized by the Cardiff partner in the framework of the LipidMaps consortium, a statistics workshop organized by the Karolinska partners.
We engaged with another ITN network (OActive project No. 777159) where Martin Giera will present the ArthritisHeal network during one of their upcoming workshops in April 2021.
The first scientific manuscripts of the consortium have in the meantime materialized. For a full list please refer to the Publications tab or our homepage.
From our regular WP meetings the coordinator office monitors interactions between the partners.
All our ESRs receive a well balanced and multi-disciplinary training, from chemical analysis (Sciex workshop), biostatistics (KI workshop), lipidomics (CU workshop), as well as direct contact with rheumatoid arthritis patients (Glasgow workshop).
In summary, the ArthritisHeal consortium is a very active network and we have successfully initiated numerous interactions between all partners across Europe.

Innowacyjność oraz oczekiwany potencjalny wpływ (w tym dotychczasowe znaczenie społeczno-gospodarcze i szersze implikacje społeczne projektu)

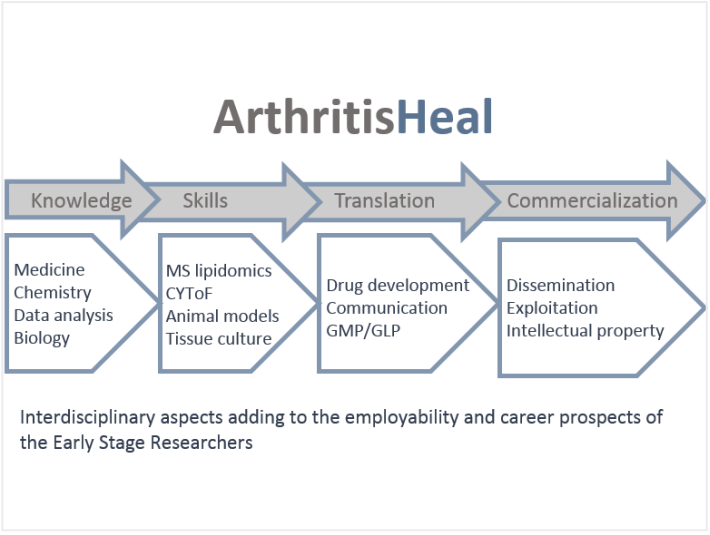
Scientifically, the consortium has started to "grow together" and we will try to keep following this path, further intensifying the collaboration between all partners. As can be seen from our scientific output has this already resulted in collaborative cutting edge publications. Two recent and highly relevant examples of our work, include the definition of guidelines for clinical lipidomics studies as well as the identification of putative osteoarthritis patient stratification markers for prednisolone treatment. The other example is the development of clinically highly relevant FACS assays by our partner BC in collaboration with everal partners in the consortium, identifying patient specific response to anti-TNF therapy, thereby allowing to capture patient response heterogeneity. This assay has raised significant interest within the consortium and we are at present evaluating how to exchange the necessary chemicals and protocols in order to carry out initial clinical testing of the approach. A successful establishment of this assay could have significant societal impact. Anti-TNF therapies are expensive and not all patients react adequately to them, hence a patient stratification assay, allowing to monitor therapeutic success could allow to streamline anti-TNF therapy, thereby limiting side effects and reducing cost. Additionally, the network is very active in compiling a compendium of clinically useful markers for inflammation-resolution. This will be a very important educative piece as it will allow to introduce clinicians to the field of Inflammation resolution and at the same time educate and advice about clinically relevant markers. Such information will be key if certain markers are to be developed further and applied in a clinical setting. Overall, we believe that ArthritisHeal will allow to define specific markers and/or assays to be considered for further development into clinically applicable assays. With our private partner BC we are already discussing such developments and evaluate how to accomplish this goal. We are confident that our training and interactions have brought people from Europe and all over the world closer together, taught our ESRs to think in a multi-disciplinary fashion

and take the opinion and expertise of their peers into account. We strongly believe that at the end of ArthritisHeal we have trained and "delivered" a new generation of mulit-disciplinary, translationally thinking PhD students who have vastly benefited from the intercultural network, the multi-disciplinary training as well as the participation of companies, showing our ESRs not only that there indeed might be a different mindset within academia and businesses but also that this can go and grow together if one is willing to actively collaborate.

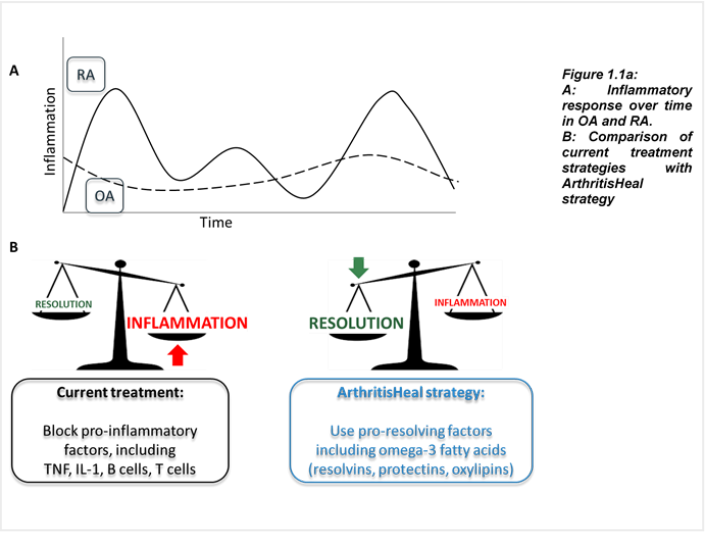
Logo ArthritisHeal



Concept, Challenges and Training



Aspects adding to employability and career prospects of ESR



Inflammatory responses over time in OA and RA and current treatment vs ArthritisHeal strategy

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Permalink: https://cordis.europa.eu/project/id/812890/reporting/pl