Medical Xpress

Dissecting the mechanisms behind chronic inflammation

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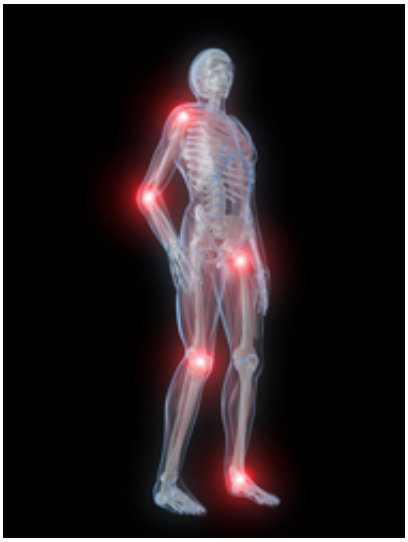

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European scientists joined forces to unravel how a physiological process such as inflammation can turn pathological. Project findings have the potential to provide answers to many inflammatory disorders.

Upon infection or injury, immune cells are attracted to the site through the blood stream, a process known as inflammation. Although this is considered normal, prolonged activation of this process leads to the pathological state of chronic inflammation. It is becoming increasingly evident that chronic inflammation is the leading cause of many diseases including autoimmune disorders.

To achieve a thorough understanding of directed inflammatory cell migration towards and across injured tissues, the EU-funded 'Targeting cell migration in chronmic inflammation' (MAIN) project brought together over 48 leading research teams in the field.

The MAIN project was divided into tightly interconnected research programmes of highly integrated activities. Some groups were involved in the Tool Development Programme (TDP) which dealt with the development of technological tools including imaging and RNAi interference for studying cell migration. Identification of signalling pathways and molecular networks that regulate inflammatory cell migration was part of the Target Identification Program (TIP) and provided cues to underlying mechanisms of chronic inflammation.

At the same time, potential targets were tested in the Target Validation Program (TVP) using in vitro and in vivo models while novel assays were generated under the project's Drug Development Program (DDP).

Collectively, the information generated during the MAIN project provided significant basic knowledge on what determines inflammatory cell migration and how this goes wrong during chronic inflammation. This information could be exploited for the future design of drugs against chronic inflammation.

Provided by CORDIS

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