Objective

“Chronic pain is prevalent and it causes decreased quality of life and significant costs to the society in terms of lost working capacity. Currently available analgesics are either not effective enough or patients cannot take them due to adverse effects. Non-steroidal anti-inflammatory drugs are a major cause of drug-related morbidity and mortality. Opioids can cause tolerance and addiction when used for long-term management of chronic pain. Analgesic efficacy can be improved by targeting specific mechanisms that are involved in pain processing of specific conditions, e.g. fibromyalgia, osteoarthritis, rheumatoid arthritis, and neuropathic pain, and by improving the safety profile of the current analgesics. This project focuses on the role of glial activation by tissue and nerve injury, inflammation, and opioids in large cohorts of chronic pain patients. We will develop a biomarker profile for the clinical conditions by assessing inflammatory markers in cerebrospinal fluid and glial activation in the brain with PET, by performing well-validated experimental pain tests, and genetics. Interindividual differences in pain perception will be studied using experimental pain tests including activation of descending inhibitions as a biomarker of endogenous analgesia and fMRI. Individual differences with the glial activation and pain perception will be used to design different research lines across the board aiming at developing personalized treatments for pain. We will use well-validated animal models relevant for arthritis, fibromyalgia, and neuropathic pain. Glial activation in these animal models will be studied using novel methodology to better understand the pathophysiology of these conditions. They will also be used as targets for new drug discovery which will
focus on the design and synthesis of compounds that block TLR4-mediated activation of glia and also on small compounds that mimic the actions of the GDNF-family."

**Field of Science**

/natural sciences/biological sciences/genetics and heredity

/medical and health sciences/basic medicine/physiology/pathophysiology

/social sciences/psychology/cognitive psychology/mental processes/perception

/social sciences/sociology/demography/mortality

**Programme(s)**

FP7-HEALTH - Specific Programme "Cooperation": Health

**Topic(s)**

HEALTH.2013.2.2.1-5 - Understanding and controlling pain

**Call for proposal**

FP7-HEALTH-2013-INNOVATION-1

See other projects for this call

**Funding Scheme**

CP-FP - Small or medium-scale focused research project

**Coordinator**

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Administrative Contact

Tiina Berg (Mrs.)

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<th>EU Contribution</th>
<th>Address</th>
<th>Activity type</th>
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</thead>
<tbody>
<tr>
<td>KAROLINSKA INSTITUTET</td>
<td>€ 2 011 123,20</td>
<td>Nobels Vag 5, 17177 Stockholm</td>
<td>Higher or Secondary Education Establishments</td>
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EU Contribution
€ 314 070,60