Europain

Understanding Chronic Pain and Improving Its Treatment
Three partners – one problem

• Patients need better and safer treatments for pain

• The socio-economic burden on society of chronic pain is great

• EFPIA members have not been successful in developing new analgesics
Patients need better pain treatments

• On average, one out of every five Europeans suffer from chronic pain, a devastating and widespread problem.

• Existing drug therapies are insufficient, a majority of patients stop treatment due to lack of efficacy or side effects.

• In spite of major scientific advances in understanding the mechanisms of pain, treatment options have not improved.
Untreated pain - a problem in Europe

- The socio-economic burden of chronic pain is great, both on the individual and on society.
- Europeans with chronic pain suffer on average for 7 years and the costs to society are huge, estimated at €34 billion a year (http://www.europeanpainnetwork.com).
- Indirect costs are several-fold.

- The ultimate goal of the project is to improve the pharmacological treatments against pain and to reduce the burden of illness of very large groups of the European population.
New analgesics – a challenge for EFPIA members

- Developing new drugs is complex, resource demanding and time consuming
- Today, overall, only 4% of CNS drug projects who reach into man will reach the market.
- Improved early predictions in order to spend resources on the most likely successful drug candidates is key
- In order to succeed in providing better medicines to patients we need to collaborate closely between Academic partners, Biotech SMEs and EFPIA members
Major reasons why developing new analgesics is difficult

• Pain experience and pain-related problems are not always predictably related to the underlying cause.
• Different forms of chronic pain have different underlying mechanisms.
• Personalised health care – identifying the right patient segment.
• RATS DO NOT TALK! The gap between animal behavioural models and humans has not been overcome.
• Only recently has identification of novel targets and genes important in chronic pain become fairly easy.
What we will do about it – step 1

• Looking back at previous draw-backs and use learnings as a platform to go forward.

• We will identify common mechanisms that can be translated from animals to humans

• Improve understanding of clinical findings to sensitivity to existing analgesics

• We will determine psychosocial and clinical risk factors for development of chronic pain
What we will do about it - step 2

- Improve and refine animal models of chronic pain so that they will be more relevant to humans
- Establish and validate mechanism-based human pain models.
- Find objective measures of spontaneous pain using advanced technologies
- Identify novel pain mediators important in chronic pain
How we will go about it

- Use of advanced technologies, e.g. nerve function and new imaging techniques
- Explore new biochemical biomarkers
- Develop disease specific animal models of pain, including related symptoms
- Develop target specific models of pain in human volunteers
- Define disease specific patient characteristics
- Prospectively study the development of chronic pain after surgery
- Analyse and study the placebo effect
We apply new integrated ways of working

• All partners will perform experimental assessments in exactly the same way
• Protocols are aligned across all activities
• All data from consortium will be integrated in a common database
• We have a Training Center for advanced clinical examinations to ensure high quality
• We will develop common consensus guidelines for experimental models
Innovative approach

- Twenty partners and more than a hundred scientists from eight countries
- Never before have so many partners from Academia, SME and EFPIA members collaborated so closely together to overcome the present hurdles
- We will systematically integrate advanced technology with animal data and clinical signs and symptoms from more than 65 study activities
- Sharing knowledge, resources and time will benefit the Europain partners and the pain patients of Europe.
An all-integrative approach

Studies in animals

1. Neurobiological mechanisms of chronic pain.

2. Improving animal models of pain.

3. Translational pain models in humans.


5. Risk factors for chronic pain.


Studies in man

Training centre
Expected outcome

- We will have identified factors predicting development of chronic pain
- We will have identified important mechanisms behind chronic pain
- We will be able to predict better from animal data which drugs will actually work in humans
- This will improve the drug development process by addressing the relevant mechanisms
- Improved treatments for pain will reduce costs for society and reduce suffering for the individual
Expected benefit to patients

- The results will help to improve success in bringing new and better treatments for pain patients.
- It will be possible to identify individuals at risk for developing chronic neuropathic pain and thereby treatment could be intensified for these patients at an early stage.
- Improved success rate in drug development will give EFPIA members and Biotech SMEs better treatment options.
- Shortened development times for new analgesics will bring benefit to patients sooner.
Expected benefit to Europe

- Better pain treatment will reduce the socio-economic burden for patients and society.

- Improved success rate in drug development will give EFPIA members and Biotech SMEs better possibility to contribute to economic growth in Europe.
Added value of the consortium

- All partners openly share data, knowledge and techniques
- All results will be shared in a large database so that results can be directly compared
- EFPIA partners will contribute with knowledge in study design, database handling, trial performance
- Academic and EFPIA partners will join in performing scientific work
- The SMEs will contribute with their specific advanced methodology of measuring activity in pain nerves
Achievements after 6 months

- Post docs have been employed
- The common results database in set up.
- EFPIA partner data mining is ongoing
- Study protocols are ready
- All investigators have undergone education and have been certified to do patient examinations will be performed in exactly the same way.
- Some of the substudies have already started

- The first very preliminary results will soon be coming in.
Time and money

**Financing**
- IMI funding: 6 MEUR
- EFPIA contribution, mainly in kind: 12.5 MEUR
- Total project cost: 18.5 MEUR

**Timing:**
- Starting date: October 1, 2009
- Duration: 60 months, ending Sept 30, 2014
# Participants

## EFPIA
- AstraZeneca
- Boehringer Ingelheim
- Pfizer Limited
- Eli Lilly and Company Ltd
- Esteve S.A.
- UCB Pharma
- Sanofi-Aventis R&D

## Academia
- King’s College London
- University College London
- University of Oxford
- Imperial College London
- Christian-Albrechts-Universitaet zu Kiel
- Ruprecht-Karls Universitaet Heidelberg
- Technische Universitaet Muenchen
- BG Universitaetsklinikum Bergmannsheil GmbH
- Klinikum der Johann Wolfgang Goethe-Universitaet
- Aarhus University Hospital
- Region Hovedstaden
- University of Southern Denmark

## SME
- Neurosciences Technologies S.L.
Further information

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• Project website under construction

• Press release available from all partners

www.imi.europa.eu