IMI Info Session: funding opportunities with the Innovative Medicines Initiative
Satellite event of MIHealth Forum

Research for pain relief – the Europain project

*Experience of Neuroscience Technologies*

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Quantifying Pain
We are on **pain!**

- Chronic pain: 1 out of 5 Europeans suffers from it
- We suffer different types of pain: acute pain, arthritis pain, post-surgical pain, neuropathic pain....
- Neuropathic pain: 5% of the population
- Low quality of life and high burden on patients and society
- Huge unmet need: only 1/3 of chronic pain patients obtain adequate pain relief
Why is pain so important?

Who wants to suffer?

NOBODY!

EUROPAIN aims at understanding pain mechanisms and improving the development of new treatments for chronic pain.

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So many patients
So many etiologies...

Diabetic neuropathy
Postherpetic neuralgia
Focal nerve injury
Radiculopathy

So complicated!
Neuropathic pain: so many symptoms, so many mechanisms!

- Touch hypoesthesia
- Tinel sign
- Mechanical allodynia
- Pinprick hyperalgesia
Key research challenges

Why we do not have yet a really **GOOD** drug for Neuropathic Pain?

- No predictive biomarkers for spontaneous pain
- Limited knowledge of *critical* pain mechanisms
- Huge attrition rate during clinical development
### Participants

<table>
<thead>
<tr>
<th><strong>EFPIA</strong></th>
<th><strong>Academia</strong></th>
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</thead>
<tbody>
<tr>
<td>• AstraZeneca</td>
<td>• King’s College London</td>
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<td>• BoehringerIngelheimGmbH</td>
<td>• University College London</td>
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<td>• Pfizer Limited</td>
<td>• University of Oxford</td>
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<tr>
<td>• Eli Lilly and Company Ltd</td>
<td>• Imperial College London</td>
</tr>
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<td>• Esteve S.A.</td>
<td>• Christian-Albrechts-Universität zu Kiel</td>
</tr>
<tr>
<td>• UCB Pharma</td>
<td>• Ruprecht-Karls-Universität Heidelberg</td>
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<tr>
<td>• Sanofi-Aventis R&amp;D</td>
<td>• Technische Universität München</td>
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<td>• Grünenthal GmbH</td>
<td>• BG Universitätsklinikum Bergmannsheil GmbH</td>
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<tr>
<td>• Astellas</td>
<td>• Klinikum der Johann Wolfgang Goethe-Universität</td>
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<td>• AbbVie</td>
<td>• Aarhus University Hospital</td>
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### Financing

| • IMI funding: 6 MEUR | • Region Hovedstaden |
| • EFPIA in kind contribution: 12.5 M € | • University of Southern Denmark |
| • Total project cost: 18.5 M € | • SME |

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Headline achievements: Genomics, proteinomics

Input:
Total RNA

Output:
- Absolute quantification of gene expression
- Exon and splice junction reads
- Novel exons/splice variants
- Novel genes

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Headline achievements:
Electrophysiology

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Headline achievements:
Patient profiling

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Repeated pain induces adaptations of intrinsic brain activity to reflect past and predict future pain

Headline achievements: Delivering added value

- We have done intensive research & published extensively (>120)
- We are having international consensus meetings: for ex., how to conduct preclinical trials
- We are conducting clinical trials to improve patient stratification
- We are developing tools to predict which patients will respond to treatments
- We are understanding placebo effect to reduce clinical trial failures
- We have initiated EMA interactions to frame regulatory landscape
Headline achievements: Coordination - Collaboration

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Remaining challenges

Operational
• Integration of data
• Continuity of initiated efforts

Scientific
• Finding true biomarkers of spontaneous pain
• Developing potent, effective pain killers
Neuroscience Technologies is a biomedical company with expertise in pain neurophysiology.

We help the pharmaceutical and biotech industries to assess the effects of new compounds on the peripheral nervous system.

We participate both at early preclinical stages and in clinical proof of concept studies.

This translational approach reduces time and cost in the drug development process.
NT Profile

- UK subsidiary in 2010: Wolfson CARD, KCL.
- Clinical and preclinical studies at both sites.
- BoD and SAB, both international.
- Company fully owned by partners.

**Contract Research Services:** Some clients:
- Pharma (Pfizer, Abbott, Astra Zeneca, Esteve)
- Biotech (BCN Peptides, Bionure)
- Universities (Cambridge)

**Medical Services:** Dept. of Neurology at MC Mutual (1200 pts/year)
Our signature technique: Microneurography

Clinical study currently ongoing in the UK (finalized).

- Quantification of abnormal activity in pain fibers
- Objective Assessment of Spontaneous Pain
- Objective Assessment of Analgesic Efficacy

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Our participation in EuroPain

• Trying to organise and coordinate a proposal for IMI 1st call, we contacted international colleagues. We were invited instead to take part of the consortium they were already organising.

NETWORKING

• NT is the only SME, we contribute electrophysiology knowledge.

“NICHE” CONTRIBUTION

• We are the only consortium member that has received 3 FTE directly from EFPIA for the 5-year project. No contribution from EC.

RISK SITUATION
Difficulties of IMI

- Working with most of our potential clients for 5 years without economical return.
- Difficulty in identifying the “in-kind” contribution of EFPIA partners.
- Difficulty to directly obtain “in-cash” contribution from EFPIA partners (initially forbidden by the rules).
- Disagreement regarding the intellectual property of the Foreground of the FTE financed by EFPIA that work at the SME (unfair compared to the FTEs financed by EC).
Benefits of IMI

• Better position in the market: more visibility, improved networking.

• Customers automatically trust your company more.

• Multicultural environment. You quickly become one of them.

• Highly educated community (easy to hire, but also lose good researchers).

• Closer to competitors (academia!), but also to possible partners.
• Need to ensure the survival of SMEs along 5 year projects (4 EFPIA companies closed their research lines in this time): capability to invoice partners as customers.

• Need to ensure the intelectual property of SMEs: FTEs financed by EFPIA not to be allowed to be claimed as EFPIA’s foreground.

• EFPIA companies participate in many projects. The share per company/year is comparatively low.

• A better financed project would give more opportunities to the public consortium. The impact of the results of the research would be greater.
Thank you

Europain

www.imieieupain.org

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