We combine basic and clinical approaches to elucidate pathways of normal pain and identify abnormalities leading to chronic pain disorders within the trigeminal area (trigeminal neuralgia, idiopathic orofacial pain, arthromyalgia, headache), the most frequent and severe chronic pain syndromes. Currently, we address three main questions:

1) Trigeminal brainstem controls: We have shown that glycine inhibitory dysfunction turns touch into pain through PKCgamma interneurons. How might glycinergic disinhibition occur? What are the molecular and cellular mechanisms underlying allodynia? Is glia involved in such processes?

2) Supraspinal controls: Diffuse chronic pain is though to be due to changes in Diffuse Noxious Inhibitory Controls (DNICs). Which neuronal pathways underlie DNICs? What is the pharmacology of these pathways? Do DNICs interact with the autonomic nervous system (ANS)?

3) The emotional component of pain, its unpleasantness, make it intolerable and contributes to its chronicisation. Our results indicate that the emotional component and ANS response to pain are closely correlated. Which neuronal pathways underlie the emotional component of pain? How are pain and ANS related to each other?
Partnerships and collaborations

National
- Inserm CIC 501 (C. Dubray), Inserm U766 (A Eschalier)
- Inserm U792, Paris (D. Bouhassira)
- Inserm U862, Bordeaux (F Nagy, S Oliet)
- CNRS, UMR 6150, Marseille (Delmas P)
- CEA/Saclay, Gif Sur Yvette (A. Menez), CNRS, Gif Sur Yvette (J. Molgo)
- French Pain Research Network

International
- King's College, London, UK (Pezet S, McMahon SB.)
- Université Liège, Belgique (J Schoenen)
- Quebec Pain Research Network

Industrial
- KAI Pharmaceuticals (USA), AstraZeneca (Sweden)

Clinical and public health transfer
Clinical research: Etiology- or symptom-based therapeutical approaches have been rather disappointing. It is becoming increasingly apparent that the treatment of pain must be specifically targeted at the underlying neurobiological mechanisms. Only such mechanism-based approach will allow determining which patients with acute pain are most likely to develop chronic pain, validate new therapeutics.

Key publications