



## Giovanni Abatangelo

University of Padua, Italy

### Biological role of hyaluronic acid: Possible involvement in pain control

**Introduction:** Nociceptive pain is one of the most common types of pain and originates with an injury involving nociceptors. About 60% of the knee joint innervations are classified as nociceptive. The specific biological mechanism underlying the regulation of nociceptors is relevant for symptom treatment of pathologies affecting the knee joint. Indeed, intra-articular administration of exogenous hyaluronic acid (HA) in osteoarthritis (OA) seems to be particularly effective reducing pain and improving patient function. In the present work, we investigated if HA induces activation of opioid peptide (OP) receptors.

**Methods:** In the present work, we used both aequorin technology and the fluorescent dye fura-2 to investigate if HA is able to induce putative antinociceptive effects via opioid receptor activation.

**Results:** Treatment with medium molecular weight (200 kDA) HA induces the selective activation of the kappa (KOP) receptor.

**Conclusions:** The relief of pain associated with HA treatment appears to be a direct action of HA to a specific antinociceptive receptor such as the KOP receptors present in the plasma membrane of nociceptors.

### Biography

Giovanni Abatangelo, Senior Researcher, University of Padova, Faculty of Medicine, Italy. Nociceptive pain is one of the most common types of pain and originates with an injury involving nociceptors. About 60% of the knee joint innervations are classified as nociceptive. The specific biological mechanism underlying the regulation of nociceptors is relevant for symptom treatment of pathologies affecting the knee joint. Indeed, intra-articular administration of exogenous hyaluronic acid (HA) in osteoarthritis (OA) seems to be particularly effective reducing pain and improving patient function. In the present work we investigated if HA induces activation of opioid peptide (OP) receptors.

[g.abatangelo@unipd.it](mailto:g.abatangelo@unipd.it)

### Notes: