

CLAIMS

1. An isolated, synthetic or recombinant peptide of sequence SEQ ID NO:1, or a peptide having at least 90% identity to SEQ ID NO: 1.
2. The peptide of claim 1, wherein the peptide having at least 90% identity to SEQ ID NO:1 modulates excitability of spinal cord interneurons (preferably spinal cord lamina II interneurons).
3. The peptide of claim 2, wherein amino acids Q and Y appearing in bold in sequence CFPGQVAGTTTRA**Q**PSCVEASIV**I**QKWWCHMNP**C**LEGEDCKVLPD**Y**SGWSCSSGNKV KTTKVTR (SEQ ID NO: 1) remain unchanged in the amino acid sequence of the peptide having at least 90% identity to SEQ ID NO:1.
4. The peptide of any one of claims 1 to 3, wherein the peptide is a recombinant peptide.
5. The peptide of any one of claims 1 to 4, wherein the peptide is a peptide of SEQ ID NO:5.
6. The peptide of any one of claims 1 to 5, for use as a medicament.
7. A nucleic acid sequence encoding a peptide according to anyone of claims 1 to 5 or a peptide for use according to claim 6.
8. A vector permitting expression of a peptide according to anyone of claims 1 to 5 or of a peptide for use according to claim 6.
9. A cell comprising a nucleic acid sequence according to claim 7, or modified using a vector according to claim 8.
10. A composition comprising the peptide of anyone of claims 1 to 5, the nucleic acid of claim 7, the vector of claim 8 or the cell of claim 9, and a dietarily or pharmaceutically acceptable support.
11. The composition of claim 10, further comprising at least one additional active compound, preferably an active agent efficient against pain, even more preferably a SAID, NSAID or opioid drug.

12. Use of the peptide of any one of claims 1 to 6, the nucleic acid of claim 7, the vector of claim 8, the cell of claim 9, or the composition of claims 10 or 11 in the manufacture of a medicament for preventing or treating pain in a subject in need thereof.
13. The use of claim 12, wherein said pain is a chronic pain, a neuropathic pain, a postoperative pain, an inflammatory pain, hyperalgesia, or allodynia.
14. The use of claim 12 or 13, wherein the subject is a mammal, in particular a human being.
15. The use of claim 14, wherein the subject has at least one mutated allele in the *myo1A* gene.
16. The use of any one of claims 12 to 15, wherein the peptide or composition is to be administered intramuscularly, intravenously, intraperitoneally, orally (per os), anally, cutaneously, subcutaneously, dermically, transdermically or intrathecally to the subject, preferably subcutaneously or orally, even more preferably orally.
17. The use of any one of claims 12 to 16, wherein the dose of peptide is between 1 μg and 100 mg/kg/day in a mammal, and is preferably between 2.5 $\mu\text{g/kg/day}$ and 0.6 mg/kg/day in a human subject.