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(54) Title (EN): PHARMACEUTICAL COMPOSITION AND BIOMATERIAL COMPRISING FUSION PEPTIDE HAVING PARATHYROID HORMONE (PTH) CONJUGATED WITH PEPTIDE SELECTIVE FOR BONE TISSUE

(54) Title (FR): COMPOSITION PHARMACEUTIQUE ET BIOMATÉRIAU COMPRENANT UN PEPTIDE DE FUSION FORMÉ PAR L'HORMONE PARATHYROÏDE (PTH) CONJUGUÉE À UN PEPTIDE SÉLECTIF DU TISSU OSSEUX

(54) Title (KO): 부갑상선호르몬(parathyroid hormone, PTH)에 골조직 선택성 펩타이드가 결합되어 있는 융합 펩타이드를 포함하는 약학 조성물 및 생체재료

(57) Abstract:

(EN): The present invention relates to a pharmaceutical composition for prevention or treatment of bone disease, the composition comprising as an effective ingredient a fusion peptide in which a peptide selective for a bone tissue is conjugated to parathyroid hormone (PTH) or a fragment thereof and, more specifically, to a pharmaceutical composition and a biomaterial for preventing or treating bone disease, the composition and the biomaterial each comprising a fusion peptide in which a peptide represented by the amino acid sequence of SEQ ID NO: 3 is conjugated to a PTH represented by SEQ ID NO: 4 or 5 or a fragment thereof. A fusion peptide of the present invention binds selectively to a bone tissue to augment the effect of PTH and to prolong the half-life of PTH, with the consequent reduction of the number of administrations. The fusion peptide according to the present invention can be used in a pharmaceutical composition that serves as a therapeutic agent for osteoporosis and bone fracture in the form of subcutaneous injection or intravenous injection, and can increase osteosis when used in combination with medical instruments for tissue repair. In addition, when bound to the surface of a medical instrument for dentistry or orthopedics, the fusion peptide increases osseointegration to the medical instrument, thereby raising the implantation stability of the medical instrument.

(FR): La présente invention concerne une composition pharmaceutique pour la prévention ou le traitement de maladies osseuses, la composition comprenant en tant que principe actif un peptide de fusion dans lequel un peptide sélectif du tissu osseux est conjugué à l'hormone parathyroïde (PTH) ou à un fragment de celle-ci et, plus spécifiquement, une composition pharmaceutique

et un biomatériau pour prévenir ou traiter une maladie osseuse, la composition et le biomatériau comprenant chacun un peptide de fusion dans lequel un peptide représenté par la séquence d'acides aminés de SEQ ID NO : 3 est conjugué à la PTH représentée par la SEQ ID NO : 4 ou 5 ou un fragment de celle-ci. Un peptide de fusion de la présente invention se lie sélectivement au tissu osseux et y augmente l'effet de la PTH et prolonge la demi-vie de la PTH, ce qui conduit à une réduction conséquente du nombre d'administrations. Le peptide de fusion selon la présente invention peut être utilisé dans une composition pharmaceutique qui sert d'agent thérapeutique contre l'ostéoporose et la fracture osseuse sous la forme d'une injection sous-cutanée ou d'une injection intraveineuse, et peut augmenter l'ostéogénèse lorsqu'il est utilisé en association avec des dispositifs médicaux visant à la réparation tissulaire. De plus, lorsqu'il est lié à la surface d'un dispositif médical de dentisterie ou d'orthopédie, le peptide de fusion augmente l'ostéointégration du dispositif médical, ce qui augmente la stabilité d'implantation du dispositif médical.

(KO): 본 발명은 부갑상선호르몬(parathyroid hormone, PTH) 또는 그 절편에 골조직 선택성 펩타이드가 결합되어 있는 융합 펩타이드를 유효성분으로 포함하는 골 질환 예방 또는 치료용 약학 조성물에 관한 것으로서, 더욱 상세하게는, 서열 번호 3의 아미노산 서열로 표시되는 펩타이드를 서열번호 4 또는 5로 표시되는 PTH 또는 그 절편에 결합시킨 융합 펩타이드를 포함하는 골 질환 예방 또는 치료용 약학 조성물 및 생체재료에 관한 것이다. 본 발명의 융합 펩타이드는 골조직에 선택적으로 결합하여 PTH의 효과를 증가시키고, 반감기를 증가시켜 투여횟수를 감소시킬 수 있다. 본 발명에 따른 융합 펩타이드는 피하주사 또는 정맥주사 형태의 골다공증 치료제, 골절 치료제로 사용하는 약학 조성물로 이용할 수 있으며, 조직수복용 의료기기와 병용적용을 하여 골조직 형성을 증가시킬 수 있다. 또한, 치과 및 정형외과용 의료기기 표면에 결합시킬 경우, 의료기기와 신생골의 융합(osseointegration)을 증가시켜 의료기기의 이식안정성을 증가시킬 수 있다.

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