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(54) Title (EN): SUBMICRON MONETITE POWDERS PRODUCTION

(54) Title (FR): PRODUCTION DE POUDRES DE MONÉTITE SOUS-MICRONIQUES

(57) Abstract:
(EN): This invention relates to the synthesis of submicron monetite powders to be used as highly soluble and resorbable bone substitute materials. Monetite (CaHPO4) powders were prepared by reacting precipitated and submicron calcium carbonate powders together with phosphoric acid in a medium of pure ethanol. The solutions did not contain any water. Monetite synthesis reaction was performed at room temperature. Monetite synthesis reaction was typically completed in 3 hours. The obtained monetite powders were submicron and consisting of nano sheets of monetite stacked together. The mildly acidic monetite powders were aged in a calcium-containing saline solution at 37oC for 6 days to produce neutral calcium phosphate powders with nanosize particles. The calcium-containing saline solution contained 142 mM Na+, 5 mM K+ and 50 mM Ca2+ ions.

(FR): La présente invention concerne la synthèse de poudres de monétite sous-micronique à utiliser en tant que matériaux de substitut osseux hautement soluble et résorbable. Des poudres de monétite (CaHPO4) sont préparées par réaction de poudres de carbonate de calcium précipitées et sous-microniques conjointement avec de l'acide phosphorique dans un milieu d'éthanol pur. Les solutions ne contiennent pas d'eau. La réaction de synthèse de monétite est effectuée à température ambiante. La réaction de synthèse de monétite est typiquement terminée en 3 heures. Les poudres de monétite obtenues sont sous-microniques et constituées de nanocouches de monétite empilées conjointement. Les poudres de monétite légèrement acides sont vieillies dans une solution saline contenant du calcium à 37 °C pendant 6 jours pour produire des poudres de phosphate de calcium neutre avec des particules de taille nanométrique. La solution saline contenant du calcium contient 142 mM d'ions Na+, 5 mM de K+ et 50 mM de Ca2+.

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