

CLAIMS

1. A method for producing an α -tricalcium phosphate ceramic comprising the steps of :

shaping a powder material obtained by a wet method using the monoaxial press method or CIP method;

sintering the shaped powder material at a temperature of 1100 to 1500°C for 50 to 200 hours; and, then

cooling the sintered product at a cooling rate of 100 to 2000°C/hr.

2. A method for producing an α -tricalcium phosphate ceramic, wherein a powder material obtained by the wet method as claimed in claim 1 is impregnated in a porous plastic material, followed by sintering.

3. A method for producing an α -tricalcium phosphate ceramic comprising the steps of :

sintering a powder material obtained by a wet method using a hot press method or HIP method at a temperature of 200 to 1500°C for 50 to 200 hours.

4. A method for producing an α -tricalcium phosphate ceramic as claimed in any one of claims 1 to 3, wherein the powder material formed by a wet method is at least one powder selected from the group consisting of β -tricalcium phosphate powder, α -tricalcium phosphate powder, and amorphous calcium phosphate powder, and mixtures of these powders with hydroxyapatite.

5. A method for producing an α -tricalcium phosphate ceramic as claimed in claim 2, wherein the powder material formed by a wet method is at least one powder selected from the group consisting of β -tricalcium phosphate powder, α -tricalcium phosphate powder, and amorphous calcium phosphate powder, and mixtures of these powders with hydroxyapatite.

6. A method for producing an α -tricalcium phosphate ceramic as claimed in claim 3, wherein the powder material formed by a wet method is at least one powder selected from the group consisting of β -tricalcium phosphate powder, α -tricalcium phosphate powder, and amorphous calcium phosphate powder, and mixtures of these powders with hydroxyapatite.

7. A method for producing an α -tricalcium phosphate ceramic having a relative density of at least 90% comprising the steps of : forming a tricalcium phosphate powder material by a wet method comprising combining phosphoric acid and calcium hydroxide to obtain amorphous tricalcium phosphate and then drying said amorphous tricalcium phosphate to form said powder material;

shaping the powder material prepared by the wet method using a monoaxial press method or a cold isostatic press method;

sintering the shaped powder material at a temperature of 1100 to 1500°C for 50 to 200 hours; and,

subjecting the sintered product to cooling at a cooling rate of 100 to 2000°C/hr.

8. A method as claimed in claim 1 wherein the shaped powder material is sintered for 50 to 100 hours.

9. A method as claimed in claim 7 wherein the shaped powder is sintered for 50 to 100 hours.

10. A method for producing an α -tricalcium phosphate ceramic as claimed in any one of claims 1 - 4 and 5 - 9, wherein said ceramic has a superior biocompatibility--.