CLAIMS

1. A production method for sophisticated implant comprising the steps of:

washing a surface of an implant material with an organic solvent to prepare a washed implant material;

immersing said washed implant material in an first calcification solution having prescribed composition at prescribed temperature for 3 to 6 hours to prepare an immersed implant material; and

incubating said immersed implant material in a second calcification solution containing a cell product obtained from a bone marrow stromal cell or immortalized dens deciduous stem cell at a prescribed concentration for 2 to 5 days.

2. The production method for sophisticated implant according to the claim 1, wherein said bone marrow stromal cell is derived from rat femur, and said immortalized dens deciduous stem cell is derived from either swine dental pulp or human dens deciduous.

3. The production method for sophisticated implant according to the claim 1, wherein said cell product comprises at least type I collagen (Col-I), fibronectin, decorin and vascular endothelial growth factor (VEGF).

4. The production method for sophisticated implant according to the claim 3, wherein said cell product further comprises insulin-like growth factor-binding protein 7, follistatin related protein, metalloproteinase inhibitor I, tissue plasminogen activator inhibitor, actin, and sulfhydryl oxidase I.

5. The production method for sophisticated implant according to the claim 4, wherein said cell product further comprises SPARC, collagen α2 (IV) chain, β-2-microglobulin and Rho GTPase-activating protein 18.

6. The production method for the sophisticated implant according to the claim 1, wherein said implant material is formed by any material selected from the group consisting of titanium, zirconia, hydroxyapatite and β-TCP.

7. The production method for sophisticated implant according to the claim 1, wherein said organic solvent is acetone and 60 to 80% of ethanol.

8. The production method for the sophisticated implant according to the claim 1, wherein said first calcification solution is composed of 100 to 150 mM of NaCl, 2.5 to 3.5 mM of $CaCl_2 \cdot H_2O$, 1.5 to 2.5 mM of K_2HPO_4 and 25 to 75 mM of Tris-HCl (pH 7.2 to 7.6), and said second calcification solution is composed of 130 to 160 mM of KNO_3, 1 to 2 mM of $Ca(NO_3)_2 \cdot 4H_2O$ and 0.5 to 1.5 mM of K_2HPO_4 (pH 7.0 to 7.8).

9. The production method for the sophisticated implant according to the claim 8, wherein said first calcification solution is composed of 136.8 mM of NaCl, 3.10 mM of $CaCl_2 \cdot H_2O$, 1.86 mM of K_2HPO_4, and 50 mM of Tris-HCl (pH 7.4), and said second calcification solution is composed of 142.8 mM of KNO_3, 1.5 mM of $Ca(NO_3)_2 \cdot 4H_2O$, and 0.9 mM of K_2HPO_4 (pH 7.4).

10. The production method for the sophisticated implant according to the claim 1, wherein said prescribed temperature is from 36 to 38 °C and immersing time is 4 hours.

11. The production method for the sophisticated implant according to the claim 1, wherein said cell product of described concentration is at a concentration of 5 to 20 mg/mL.

12. A sophisticated implant produced by the method according to any one of the claims 1 to 11.

13. The sophisticated implant according to the claim 12, wherein the implant has at least type I collagen, fibronectin and decorin on the surface.

14. The sophisticated implant according to the claim 13, wherein the implant further comprises at least one of protein selected from the group consisting of insulin-like growth factor - binding protein 7, follistatin related protein, metalloproteinase inhibitor I, tissue plasminogen activator inhibitor, actin and sulfhydryl oxidase I on the surface of the implant.

15. The sophisticated implant according to the claim 13, wherein said sophisticated implant is formed by a material selected from the group consisting of titanium, zirconia, hydroxyapatite and β-TCP.