A new technological procedure using sucrose as porogen compound to manufacture porous biphasic calcium phosphate ceramics of appropriate micro- and macrostructure

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Résumé en anglais
In the domain of implantable materials, the porosity and pore size distribution of a material in contact with bone is decisive for bone ingrowth and thus the control of the porosity is of great interest. The use of a new porogen agent, i.e. sucrose is proposed to create a porosity in biphasic calcium phosphate blocks. The technological procedure is as follows: sucrose and mineral powder are mixed, then compressed by isostatic compression and sintering finally eliminates sucrose. Blocks obtained were compared to a manufactured product: Triosite® (Zimmer, Etupes, France) which porosity is created through a naphthalene sublimation process. Results have shown that the incorporation of sucrose allows the preparation of porous blocks with controlled porosity varying from 40 to 80% and with macro-, meso- and microporosity characteristics depending on the percentage of sucrose added as well as on the granulometry of both sucrose and mineral powder.

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