

ALUMINA FIBERS IN ORTHOPEDICS IMPLANT

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Objective:

- 1) To increase the activities of bone cells on the surface of material used in the design of orthopedic implants.
- 2) Enhanced functions of osteoblasts

Methodology/Design:

- 1) Alumina fibers were synthesized using sol-gel synthesis, spinning process, drying and heat treatment. Alumina fibers were compacted via pressing.
- 2) Human osteoblasts supplemented with fetal bovine serum and penicillin/streptomycin were separately seeded on alumina fibers.
- 3) After the prescribed time period, substrate were rinsed in phosphate buffered saline to remove any non-adherent cells

Outcome:

- 1) improve the lifetime of HPa-coated implants
- 2) alumina fibers act as material surface that will effectively allowed for increased osteoblasts function.