

Necuron 600 proposed as mechanical model for human cancellous bone from the femoral head

Necuron 600 propus ca model mecanic pentru osul trabecular al capului femural uman

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Abstract

The goal of this research was to evaluate the use of Necuron 600 as a substitute mechanical model for human cancellous bone from the femoral head. An experimental programme was carried out to obtain mechanical properties of both bone and polyurethane (PUR) foam, which included procurement, sampling, transportation and compressive testing of cylindrical specimens of human cancellous bone and Necuron 600.

PUR specimens were tested under the same conditions as bone and the compressive strength, apparent compressive modulus and absorbed energy up to compressive strength have been determined.

After comparison of the results it has been found that Necuron 600 exhibits partially similar compressive properties with human cancellous bone from the femoral head, but it has a significantly lower apparent compressive modulus.

Keywords

Necuron 600, human cancellous bone, femoral head, PUR foam, compressive strength, absorbed energy, compressive modulus