The Realisation of Research

Polymeric collagen for regenerative medicine

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Category(s):
Delivery of Therapeutics

Description:

High strength, cellular, polymeric collagen suitable for age-related tissue engineering

Available for: Licensing

Summary

Researchers at UCL's Institute of Orthopaedics have developed a cross-linked, high fibril alligned (similar to tendon) polymeric collagen that has application for high strength musculoskeletal tissues that are increasingly important in age-related diseases. The processing technique allows the addition of living cells into the collagen suspension in a manner that leaves them undamaged. The final cellularised materials are mechanically strong and similar to tissue properties of e.g. tendon, joint capsule or ligament.

The Technology and its Advantages

This invention relates to the production of biomaterials from polymeric collagen and its seeding with cells and other components of biomaterials. Polymeric collagen is isolated from tissue, suspended in an acidic solution, and then neutralised at low temperature. The neutralised suspension is then seeded with biomaterial components, such as cells, and the polymeric collagen aggregates to form a biomaterial comprising the biomaterial components. Polymeric collagen biomaterials produced will be sourced from animals or grown in tissue culture by cells. Animal sources yield strong, 'closed up' collagen matrices and cell seeding is not possible. Tissue culture provides sterile, low strength collagen with little structure although cell seeding is possible. UCL's patented process provides a polymeric collagen with high tensil strength and is easily cellularised.

Market Opportunity

The global market for collagen (including HA-based biomaterials) is forecast to exceed $2.0 billion by the year 2015. Growth in the biomaterials market is being fuelled by heightened interest in personal healthcare, growing size of an ageing population and the development of new products with a wide application range.

Intellectual Property Status

The patent is being progressed in both US and EP territories.

Further Information

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