

Manufacturing method of a 2D/3D cell scaffold material

Possible to obtain in a short time a biocompatible structure able to make chemical modification of the surface

Summary

Currently, there are many researches on tissue engineering which produce 3D biological tissues that mimic organs such as bone and blood vessel. In tissue engineering, scaffold materials are used to manufacture biological tissues from multiple cells and materials which are to be able to modify the surface with various compounds are required.

However, in the current manufacturing method such as irradiating ultraviolet light to methacrylamide gel laminates, the chemically active reaction sites do not remain sufficiently and it was difficult to apply chemical modification to the structure surface.

This invention relates to a method for obtaining in a short time a structure that can be chemically modified on the surface. A 3D biocompatible structure can be obtained within 24 hours by using an gas-liquid interfacial cross-linking reaction between a molecule with a catechol group and gelatin.

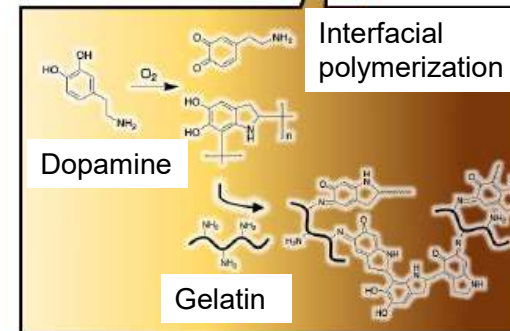
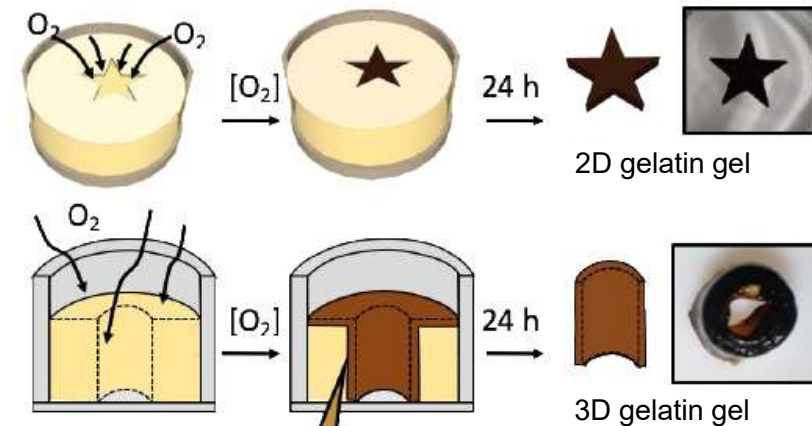
Application

Expected to be applied in industrial fields such as drug discovery and regenerative medicine as 2D / 3D cell scaffold materials.

Patent Data Sheet

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Characteristics

- 2D, 3D bioprinting
- Flexibility / durability
- Biodegradable
- Surface modification/adsorption (ex: protein)

[Up] Schematic diagram of the manufacturing method of the 2D structure
[Down] Manufacturing method of the 3D structure and chemical reaction path of the manufacturing method of the structure

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