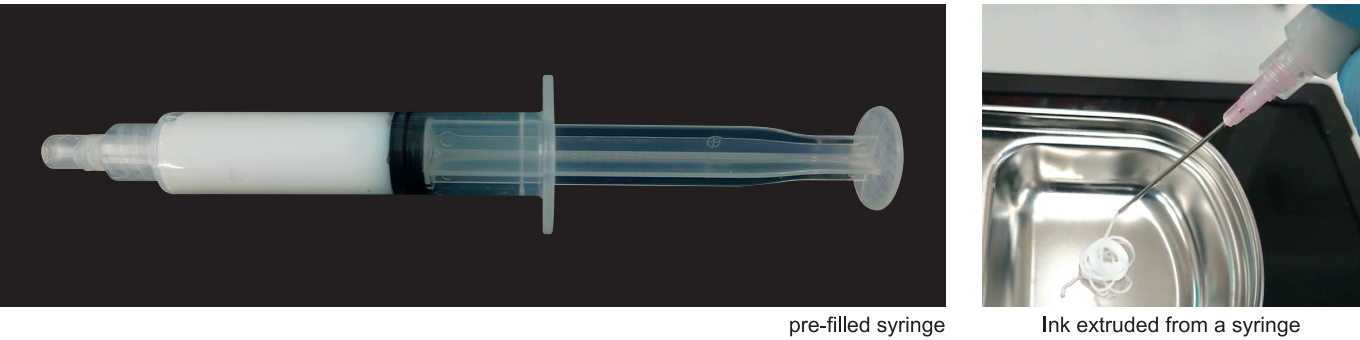


Collagen Bio-ink

NEW

Suitable for 3D printing and transplantable substrates!

Product photo



Features

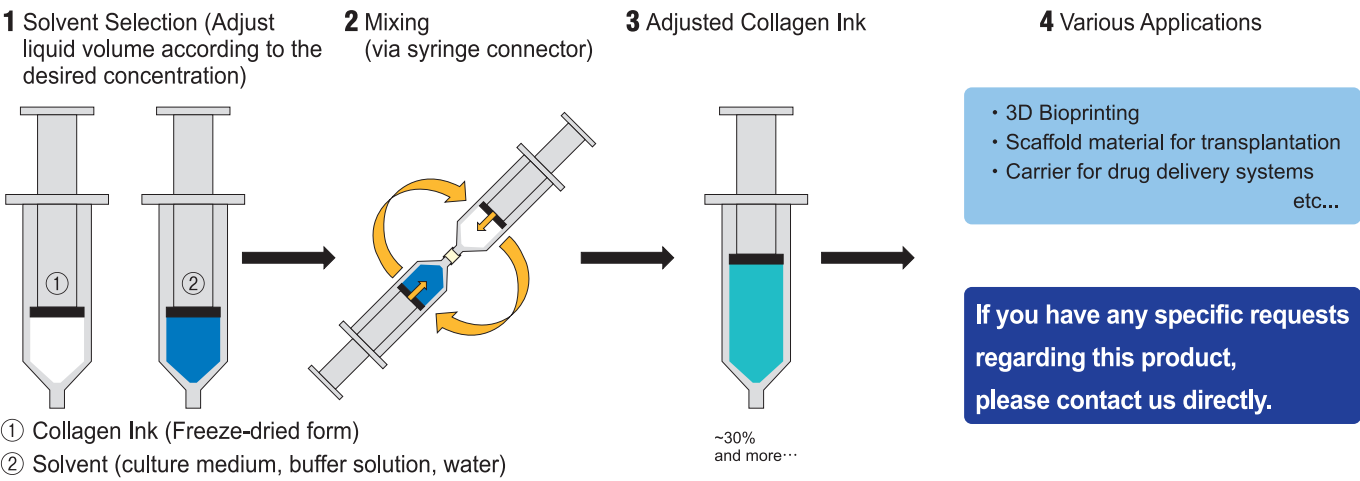
A paste-like material composed solely of collagen. This bioink can be concentrated to a high level and is expected to be used as a bioink for 3D printing, and as a scaffolding material for transplantation. The product undergoes electron beam processing for microbial control.

Product Form

Ingredients: Pepsin-solubilized collagen derived from Porcine skin
Form: Syringe-filled freeze-dried product

As this product is sold in freeze-dried form, the concentration can be adjusted by varying the liquid volume with the desired solvent. It is also possible to add other components before adding the desired solvent.

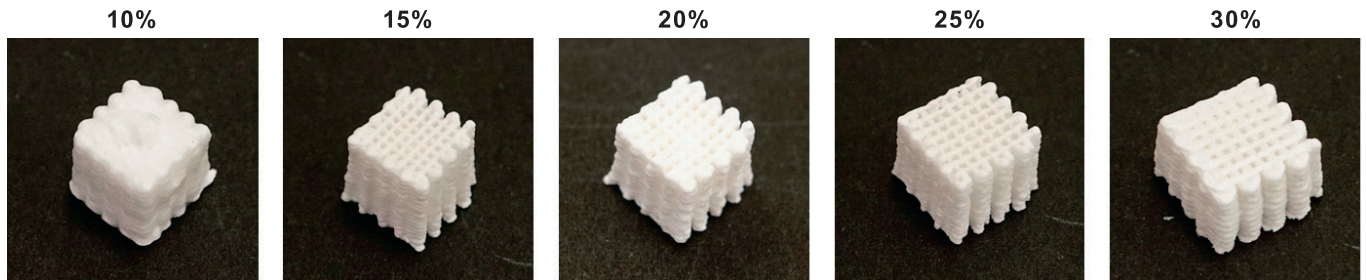
Instructions for Use



Comparison with other 3D bioinks

	Nippi's Bioink	Conventional Collagen Ink (Acidic solution)	Synthetic Material Ink
Biocompatibility	+	+	--
Composability	+	-	-
Room temperature formability	+	--	-
High concentration of collagen	+	--	N/A
Support bath for vertical stacking	Not always necessary depending on the shape	Always necessary	Necessary depending on the material

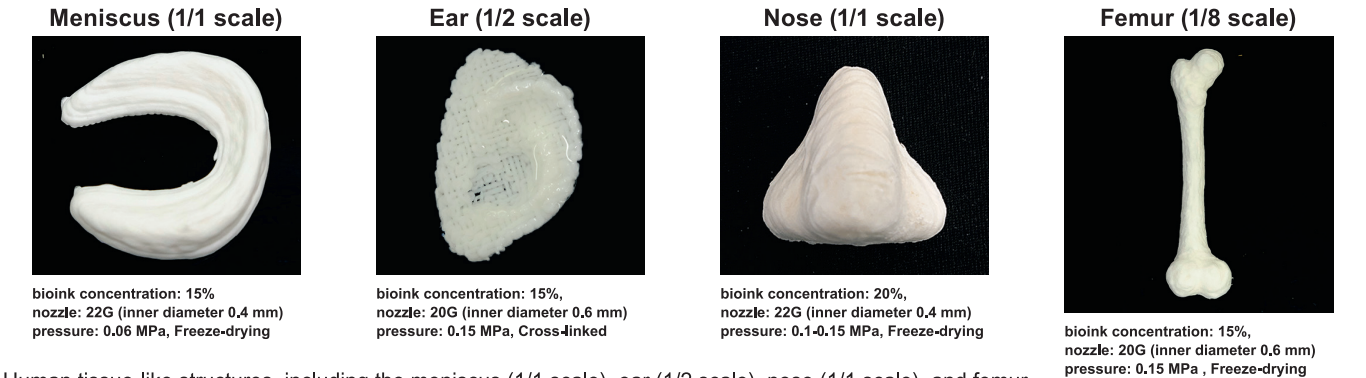
◆Ex. 1) Lattice-shaped cubes at different collagen concentrations



Nozzle diameter: 10-25% at 22G (0.4 mm), 30% at 18G (0.8 mm)

Inks of various concentrations were prepared, and lattice cube shapes were fabricated using a bio 3D printer. After freeze-drying, their appearance was observed. In the case of 10% concentration, the rigidity was low, and deformation of the lattice shape was observed. On the other hand, for concentrations higher than 15%, the lattice structure was verified, and high-resolution fabrication was confirmed. Due to their high concentration and rigidity, no deformation in height was observed.

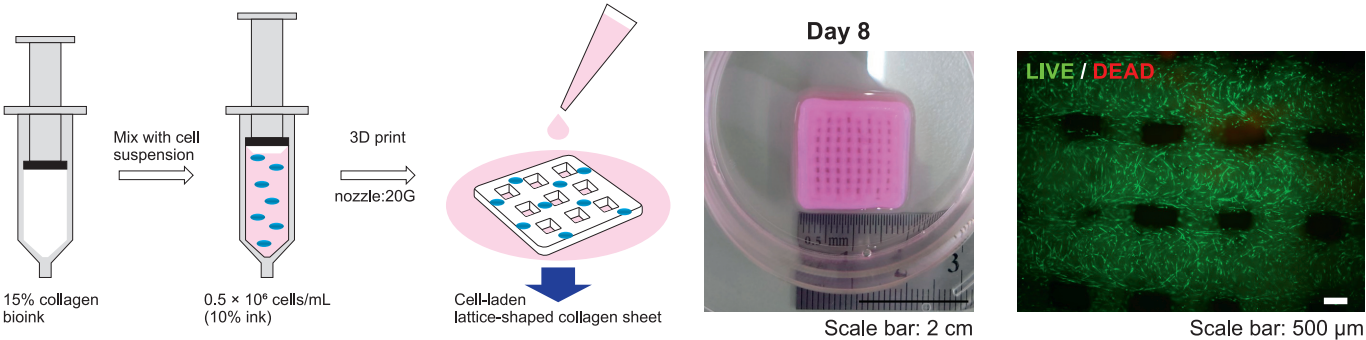
◆Ex. 2) Fabrication and verification of human tissue-like structures



Human tissue-like structures, including the meniscus (1/1 scale), ear (1/2 scale), nose (1/1 scale), and femur (1/8 scale), were fabricated. Based on preset 3D data, it was confirmed that each structure could be accurately reproduced. The meniscus, nose, and femur were subjected to freeze-drying, while the ear was treated with a chemical crosslinking agent.

◆Ex. 3) Fabrication and cultivation verification of cell-containing structures. Experimental Method.

Experimental Method



After preparing a 15% ink solution, the ink was mixed with half the volume of cell suspension to prepare a 10% ink solution containing cells at a concentration of 0.5×10^6 cells/mL. Using this, a lattice sheet structure was fabricated and applied to a cell culture system (for approximately one week). After one week, the shape of the fabricated structure was still maintained, and it was confirmed that the cells were localized within the structure and remained viable.

Code	Product name	Size
892 271	Collagen Bio-ink	1 kit