

Celluid AM (Lyophilized Alginate Methacrylate, AIMA)

Description

Alginates are linear polysaccharides that contain β -d-mannuronic acid (M-blocks) and α -l-guluronic acid (G-blocks) residues linked via 1,4-glycosidic bonds to form polymeric chains. These anionic polysaccharides are commonly derived from seaweed or bacterial biosynthesis using gram-negative bacteria. Alginate hydrogels can form through ionic crosslinks between the carboxylic acid moieties and divalent cations such as Ca^{2+} . The physical and mechanical properties can tune by changing the cation concentration and exposure time. However, ionically cross-linked alginate hydrogels can be toxic to cells at high Ca^{2+} concentrations and have limited robustness due to low elasticity and brittleness. Additionally, it is not easy to control the swelling and degradation rate of ionically cross-linked alginate systems that are crucial parameters controlling tissue ingrowth and cell migration.

Celluid AM is an alginate methacrylate based bioink for 3D bioprinting applications. The formulation is optimized for 3D bioprinting of tissues and constructs using extrusion-based 3D bioprinters, and can be used to print cell-laden hydrogels in desired shape without any supporting material. The crosslinking of printed structures can be done in one step using UV light for further culture and maturation of cells for tissue engineering and regenerative medicine applications.

By using Celluid AM, alginate-based scaffolds can be prepared in the various form and utilized other bioinks formulation.

Specification sheet

Product Number	CBA-101
Synonymous	AIMA, AIMA lyophilizate, Methacrylated alginate, and Alginate methacrylate.
pH	7.4
Degree of methacrylation	> 30%
Cell viability	> 40% viable fibroblast for 1 week
Shelf life	Minimum of 6 months from date of receipt
Storage condition	-20 °C / 4 °C, Light and moisture sensitive
Form	Lyophilized sponge

Alginate source	Alginic acid sodium salt from brown algae
Intended use	Biocompatible material for 3D bioprinting, Research grade. For research use ONLY.

Celluid AM Kit (Lyophilized alginate Methacrylate, AIMA)

Description

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Specification sheet

Product Number		CBA-102
Celluid GM (1000 mg)	Synonymous	AIMA, AIMA lyophilizate, Methacrylated alginate, and Alginate methacrylate.
	pH	7.4
	Degree of methacrylation	> 30%
	Cell viability	> 40% viable fibroblast for 1 week
	Shelf life	Minimum of 6 months from date of receipt
	Storage condition	-20 °C / 4 °C, Light and moisture sensitive

	Form	Lyophilized sponge
	Gelatin source	Alginic acid sodium salt from brown algae
	Intended use	Biocompatible material for 3D bioprinting, Research grade. For research use ONLY.
Irgacure 2959 (10 ml) LAP (10 ml)	Shelf life	Stable for >1 year at 4 °C
	Storage condition	RT or 4 °C, Light and moisture sensitive
	Form	Liquid