

Hyaluronic Acid Methacrylate - PhotoHA[®] - Lifeink[®] 400

Hyaluronic acid (HA) methacrylate can be used to form hydrogels for *ex vivo* engineering of autologous cartilage tissue^[1] or as a mesenchymal stem cell carrier in cartilage repair^[2]. Because the stiffness can be widely adjusted by altering concentration or UV-light exposure, methacrylated HA has been used to measure the effects of matrix stiffness on cell phenotype and function^{[3][4]}. Methacrylated HA can be used for 3D bioprinting (extrusion^[5], inkjet^[5] and photolithographic^[6]) to create structures that promote osteogenic differentiation of MSC's^[7]. The high tunability of hyaluronic acid methacrylate allows it to be mixed with, and reinforce other types of hydrogels (such as collagen, or gelatin methacrylate)^[8].

1. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5717235/>
2. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5627486/>
3. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5541838/>
4. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5447944/>
5. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5615317/>
6. <https://www.ncbi.nlm.nih.gov/pubmed/21773726/>
7. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5460858/>
8. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5748291/>