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(54) Title: A SERIES OF INJECTABLE HYDROGELS SELF-ASSEMBLED FROM SHORT PEPTIDES FOR VARIOUS BIOMEDICAL APPLICATIONS

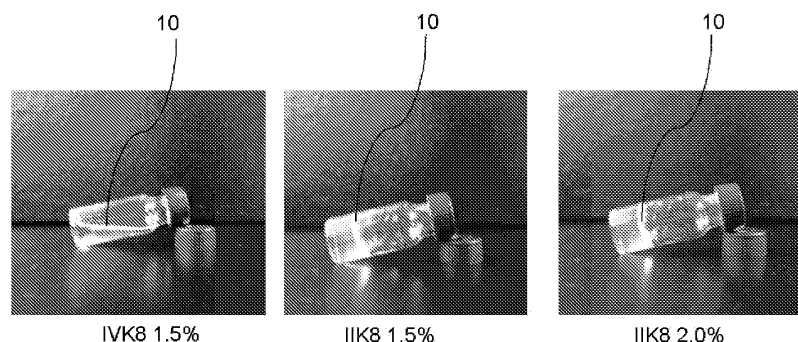


Figure 3A

(57) Abstract: Described herein are peptides that may self-assemble into hydrogels. The peptide comprises an amino acid sequence of alternating hydrophobic amino acids (X) and hydrophilic amino acids (Y), wherein each hydrophobic amino acid is independently selected from isoleucine (I), valine (V) and leucine (L), each hydrophilic amino acid is independently selected from arginine (R), lysine (K), glutamic acid (E), and aspartic acid (D), at least one hydrophilic amino acid is selected from arginine and lysine, at least one hydrophilic amino acid is selected from glutamic acid and aspartic acid, and the amino acid sequence contains at least 8 amino acids. Further described is a composition comprising a hydrogel formed of the peptides in a beta-sheet conformation and water or a dried form of the hydrogel. The hydrogel may be used for growing cells. In another aspect, a hybrid hydrogel prepared from IHK12 (IRIKIEIRIK) and IK8L (IRIKIRIK) may be used to treat a bacterial and/or fungal infection.

[Continued on next page]

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