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(54) Title: SELF-ASSEMBLED COMPOSITE ULTRASMALL PEPTIDE-POLYMER HYDROGELS

(57) Abstract: The present invention relates to composite hydrogels comprising at least one non-peptidic polymer and at least one peptide having the general formula: $Z-(X)_m-(Y)_n-Z'$, wherein Z is an N-terminal protecting group; X is, at each occurrence, independently selected from an aliphatic amino acid, an aliphatic amino acid derivative and a glycine; Y is, at each occurrence, independently selected from a polar amino acid and a polar amino acid derivative; Z' is a C-terminal protecting group; m is an integer selected from 2 to 6; n is selected from 1 or 2; and p is selected from 0 or 1. The present invention further relates to methods of producing the composite hydrogels, to uses of the composite hydrogels for the delivery of drugs and other bioactive agents/moieties, as an implant or injectable agent that facilitates tissue regeneration, and as a topical agent for wound healing. The present invention further relates to devices and pharmaceutical or cosmetic compositions comprising the composite hydrogels and to medical uses of the composite hydrogels.



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