Claims

1. A method for preparing a microgel comprising the following steps:

   (i) reacting a mixture comprising alginate and gelatin with an alginate physical crosslinker to form a crosslinked alginate microgel core

   (ii) reacting the gelatin with crosslinker to form a crosslinked gelatin microgel, and

   (iii) removing the crosslinked alginate.

2. A method according to claim 1 wherein the crosslinker in step (ii) is a 4-arm PEG succinimidyl glutarate (pentaerytheritol core).

3. A method according to claim 1 or 2 wherein step (i) is performed by air-driven droplet generation.

4. A method according to claim 3 wherein a mixture comprising alginate, gelatin and 4-arm PEG succinimidyl glutarate (pentaerytheritol core) is used in the droplet generation.

5. A method according to claim 4 wherein the mixture additionally contains cells or bioactive molecules.

6. A method according to claim 1 or 2 wherein the microgel core is additionally coated with alternate layers of at least one polycation and at least one polyanion.

~~7. A microgel obtained by a method according to claim 1.~~

~~8. A microgel according to claim 7, additionally comprising cells, tissue or bioactive molecules in the microgel core.~~

~~9. A microgel according to claim 7, in the form of particles of a size of 50 to 500 µm.~~

~~10.~~7. A microgel with a chemically cross-linked gelatin core being coated by alternating layers, wherein the gelatin was chemically crosslinked with 4-arm PEG succinimidyl glutarate (pentaerytheritol core) and wherein the alternating layers are composed of at least one polycation and at least one polyanion.

~~11.~~8. A microgel according to claim ~~10~~7, wherein the polycation is chitosan or chitosan-containing material, and the polyanion is alginate or alginate-containing material.

~~12.~~9. A microgel according to claim ~~9~~7, wherein the number of alternating layers is at least 2.

~~13.~~10. A microgel according to claim ~~9~~7, additionally comprising cells, tissue or bioactive molecules in the microgel core.

~~14.~~11. A microgel according to claim ~~9~~7, in the form of particles of a size of 50 to 500 μm.