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(54) **METHOD TO PRODUCE HYALURONIC ACID FUNCTIONALIZED DERIVATIVES AND FORMATION OF HYDROGELS**

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CPC ..... **C08B 37/0072** (2013.01); **B23K 9/10** (2013.01)

(58) **Field of Classification Search**  
CPC combination set(s) only.  
See application file for complete search history.

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(57) **ABSTRACT**

In this invention a two steps procedure is described useful to insert functional groups to the hyaluronic acid (HA), through the formation, in organic solvent, of a particular active group on hydroxyl groups of HA and subsequent substitution, on the inserted active group, with a pendant portion containing at least in its terminal portion a nucleophilic functional group, NH<sub>2</sub>-R.

The group inserted by nucleophilic substitution can contain in another its terminal portion a further nucleophilic functional group, in a way to be easily exploitable to further chemical functionalizations, such as an example to obtain the methacrylation of HA functional groups, to obtain photocrosslinkable derivatives.

Both direct derivatives of the proposed process and those obtained by the further functionalization can be employed to produce hydrogels.

**20 Claims, 4 Drawing Sheets**