**Polysaccharide hydrogels: a versatile tool for biomedical and**

**pharmaceutical applications**

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In the biomedical and pharmaceutical field, polysaccharide hydrogels are gaining an increasing interest due to a favorable combination of two items: the generally accepted biocompatibility of this class of polymers and the high amount of water content. This combination, resembling the extracellular matrix, is very well accepted by different kinds of human cells, and, as a consequence, polysaccharide hydrogels can be used in internal administrations without interfering with the metabolism and the normal human physiology, thus representing a valuable tool for applications in tissue engineering and drug delivery. The hydrogels can be shaped and used in the form of bulk materials or in the particulate form - from micro to nano dimensions -, thus fulfilling different needs. In particular, nanohydrogels (NHs) are very promising as they can combine the favorable properties of nanotechnologies and the features of the hydrogels. In this contest, the preparation of a new nanoparticulate hydrogel carriers based on the polysaccharides gellan (Ge) and hyaluronic acid (HA), obtained by self-assembly of polysaccharide chains, previously derivatized with hydrophobic moieties, represent an important step onward for some pharmaceutical applications.