

Hyaluronic acid from marine waste and its therapeutic applications

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The application of Hyaluronic acid is a very attractive component for pharmaceutical sector from several points of view. The expanding application of Hyaluronic acid in various fields of medicine had shed light in the universal target towards this polymer since 1934. The viscoelastic properties of HA derivatives and nonimmunogenicity greatly provides it with a wide application in medicinal field. Further it is used in rejuvenative medicine as filler for cutaneous lines and wrinkles. In gel form it has been used extensively to prevent desiccation of the cornea during a number of ophthalmic procedures. Focus has moved recently to HA polymers as drug delivery devices with studies suggesting they might be used as gel preparations for drug transport, predominantly directly into the globe, via the conjunctiva, or by instillation into other cavities. The carboxylate groups of HA have been used to create a cross-linked hydrogel for DNA entrapment and also for drug delivery. By combining these materials carefully and in differing ways, variation in pharmacokinetics may be achieved safely but with markedly differing biophysical properties. The expanding application of HA derived therapeutics emphasizes the impetus for the development of biotechnological and chemical processes for optimisation of the production of HA. Hence, we have isolated and characterised HA from marine waste and evaluated its potential for drug delivering properties.

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