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DIFFERENT STIMULI RESPONSIVE POLYMER USED FOR DEVELOPING *IN - SITU* GELLING SYSTEM FOR NASAL ROUTE DRUG DELIVERY SYSTEM

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ABSTRACT

This review focuses on polymers used in the nasal administration of medicines, the nasal absorption mechanism and examples of polymers (Carbopol, poloxamèr, chitosan, gellan gum, sodium alginate, etc). In presence of different endogenous stimuli this polymer has the ability to convert in gel form from solution state. There are many responsive agents which leads to such changes like PH, temperature and specific ionic concentration. According to source of obtaining, they can be Natural, semisynthetic and synthetic polymer. For in-situ gelling behaviour may be added alone or in mixture. Nasal route is good alternative of oral and parental route because it avoids many problems related to this field like permeability ratio, drug absorption time and concentration, also by pass hepatic system, help to increases drug quantity in systemic circulation. Because of all these advantages, this system reduces side effects which is found due to unwanted deposits of drug in body. As future aspect, nasal route also provides the capability to cross blood brain barrier due to high retention power. Thus, this review focuses on polymers used in the nasal administration of medicines, the nasal absorption mechanism and examples of polymers (Carbopol, poloxameres, chitosane, gelatinous gum, sodium alginate, etc.)

KEYWORDS: Polymer; Mucoadhesive Drug Delivery System, Gelating Mechanisms, Thermo-Responsive Agents (Poloxomer), Ion-Triggering Agent (Alginic Acid), Ph Dependent Systems (Carbopol), Stimuli Responsive Polymer.

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