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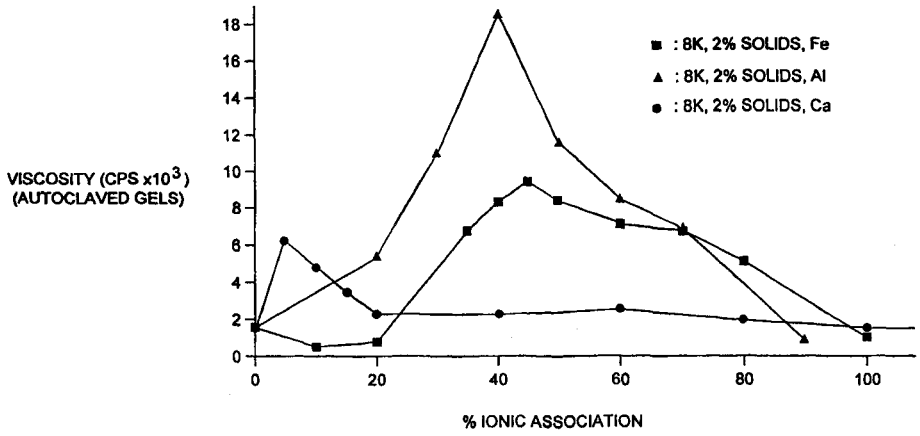
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(54) Title: COMPOSITIONS OF POLYACIDS AND POLYETHERS AND METHODS FOR THEIR USE IN REDUCING ADHESIONS



(57) Abstract

The present invention relates to improved methods for making and using bioadhesive, bioresorbable, anti-adhesion compositions made of intermacromolecular complexes of carboxyl-containing polysaccharides, polyethers, polyacids, polyalkylene oxides, multivalent cations and/or polycations. The polymers are associated with each other, and are then either dried into membranes or sponges, or are used as fluids or microspheres. Bioresorbable, bioadhesive, anti-adhesion compositions are useful in surgery to prevent the formation and reformation of post-surgical adhesions. The compositions are designed to breakdown *in-vivo*, and thus be removed from the body. Membranes are inserted during surgery either dry or optionally after conditioning in aqueous solutions. The anti-adhesion, bioadhesive, bioresorptive, antithrombogenic and physical properties of such membranes and gels can be varied as needed by carefully adjusting the pH and/or cation content of the polymer casting solutions, polyacid composition, the polyalkylene oxide composition, or by conditioning the membranes prior to surgical use. Multi-layered membranes can be made and used to provide further control over the physical and biological properties of antiadhesion membranes. Membranes and gels can be used concurrently. Antiadhesion compositions may also be used to lubricate tissues and/or medical instruments, and/or deliver drugs to the surgical site and release them locally.

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