## Abstract Preview

Thermal and mechanical stability of different hyaluronic acid preparations

Travagli, V; Zanardi, I
Università degli Studi di Siena, Dip. Farmaco Chimico Tecnologico, Siena, Italy

It is well-known that polysaccharide solutions present differences in their native behaviour if subjected to various stress conditions [1, 2].
This study presents the effect of physico-mechanical solicitations on different pharmaceutical preparations containing hyaluronic acid (HA). The parameters under investigation are: HA concentration (range 0.05 - 1.0 %p/v); mean molecular weight of HA; ingredients eventually present in the aqueous vehicle (like tonicity agents, preservatives); ionic strength; thermal stability, with particular regard to steam sterilization; sonication; flowability through needles; shear-thinning by rotational viscometers. The effects of the above-reported conditions have been evaluated by both torsion-balanced oscillation viscometer and electrophoretic method.
Results obtained are consistent with the presence of variable degree of degradation in the HA preparations subjected to the stress conditions mentioned above.
Hypotheses for the mechanisms of HA modification (like depolymerization, cleavage, degradation, fragmentation) are under investigation.

[1] Biomacromolecules 2005; 6: 386-391
[2] Curr. Med. Chem. 2003; 10: 2123-2145