Contribution ID: **142** Type: **poster preferred**

# Radiolytic study of interactions of organic cations with heparin

*Tuesday, 16 October 2012 16:03 (1 minute)*

Glycosaminoglycans are linear polysaccharides consisting of repeating disaccharide units. Because of the presence of negatively charged sulfate and carboxyl groups they are polyelectrolytes. They occur on animal cell surface and in the extracellular matrix. Glycosaminoglycans present on endothelium cell surface allow an interaction with the underlying subendothelium and blood components, but also with some xenobiotics, especially of cationic character. Vascular endothelium is an organ that plays an important role in proper functioning of cardiovascular system by its metabolic activity, and its dysfunction leads to various pathologies and diseases.

The selected pyridinium salts, such as a metabolite of vitamin PP 1-methylnicotinamide (MNA), shows anti-inflammatory and anti-thrombotic activity [1]. These functions are connected with ability to modulate the secretory function of endothelium. For example anti-thrombotic activity of MNA is mediated by prostacyclin derived from vascular cyclooxygenase-2 [2]. The mechanism of action is not fully understood, but it is likely that the interactions of 1-methylnicotinamide with glycosaminoglycans present on endothelium, may play an important role.

Here we present the results of the pulse radiolysis investigation on the binding of selected organic cations to heparin, one of glycosaminoglycans. These pulse radiolysis results are compared with steady-state spectrophotometry data obtained for methylene blue, a cationic dye whose interaction with heparin is well known.

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**Session Classification:** Poster Session 1

**Track Classification:** Other