**Supplementary Material**

**Figure S1.** LC-MS profiles of enoxaparin octasaccharide fraction, isolated by Biogel P10 fractionation. Analysis was performed as previously reported [15]. LC conditions: column C18 100 × 2.1 mm, ODS 2.6 μm; eluents (A) 10 mM DBA + 10 mM CH₃COOH in H₂O and (B) 10 mM DBA + 10 mM CH₃COOH in CH₃OH; gradient elution 0 min 30%B, 10 min 35%B, 80 min 70%B, 120 min 90%B, 125 min 30%B, 155 min 30%B; flow rate 0.1 mL/min. Structures are expressed by code consisting of three numbers (the numbers of monosaccharide residues, sulfate groups, and N-acetyl groups, respectively), preceded by the symbol ΔU to indicate that the first residue is 4,5-unsaturated uronic acid or by the symbol A for oligosaccharides starting with an aminosugar residue. These designations can be followed by 1,6an to indicate 1,6-anhydrohexosamine terminal residues.