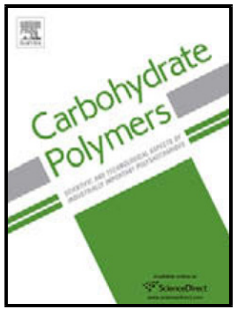

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Production of heparin and λ-carrageenan anti-heparanase derivatives using a combination of physicochemical depolymerization and glycol splitting

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Highlights

- Ultrasonic-assisted radical depolymerization gave LMW-λ-Carrageenan
- Depolymerization associated with glycol splitting helped modulate biological activities
- Lead to interesting heparanase inhibitors with low-anticoagulant properties.
- RD-GS-λ-Carrageenan most interesting candidate as potent antiangiogenic.
- Same heparanase inhibition as UF-heparin but with no anticoagulant properties.

Keywords: Heparin, Carrageenan, heparanase, Glycol split, angiogenesis, depolymerization

Abbreviations :

Low Molecular Weight, LMW; Heparan Sulfate, HS; Extracellular matrix, ECM; Unfractioned, UF; depolymerized with radical hydrolysis assisted by ultrasound, RD Hexuronic Acid, HexA; Glycol split, GS; depolymerized then glycol splitted, RD-GS; Glycol splitted then depolymerized, GS-RD; Number average molecular weight, Mn; Weight average molecular weight, Mw; Human Skin MicroEndothelial Cells, HsKMEC.