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Supporting Information

One-step esterification of nanocellulose in Brønsted acid Ionic Liquid for delivery to Glioblastoma Cancer cells.

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Preparation of N-methylpyrrolidinium hydrogen sulfate [MepyrrH][HSO4][1]

The Bronsted acid ionic liquid was prepared by adding dropwise an equimolar amount of sulfuric acid H_2SO_4 (98%) to the selected 1-Methylpyrrolidine base. The mixture wasthen stirred for 5 hours at 60 °C. After that, reduced pressure was used to remove water. The result was a pale yellow viscous liquid obtained with quantitative yield.

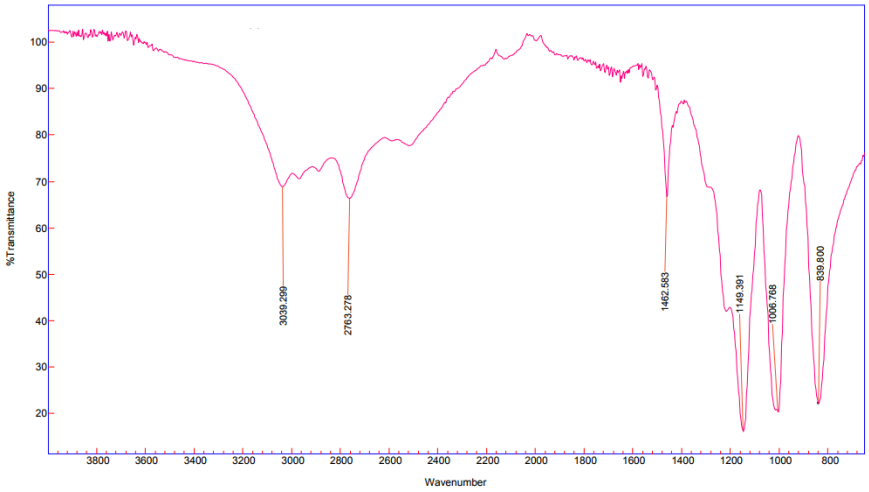

Figure S1. IR-spectra of N-methylpyrrolidinium hydrogen sulfate

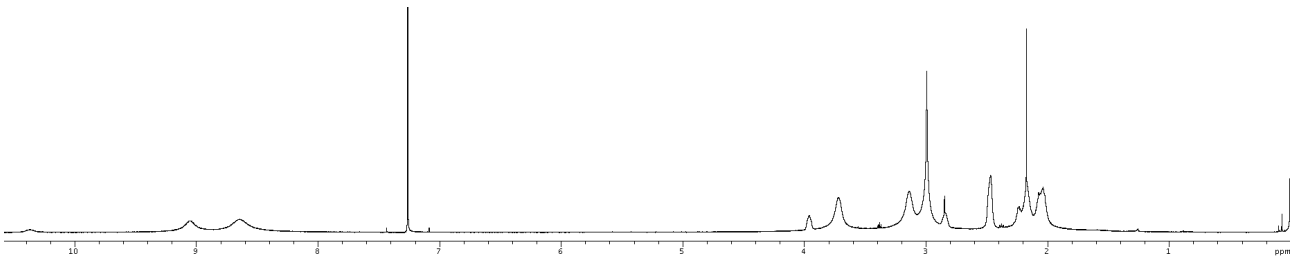

Figure S2: ^{1}H-NMR of N-methylpyrrolidinium hydrogen sulfate in $CDCl_3$.

Determination of loaded Cltx-Cy5 onto CNCs.

^{1}H-NMR (600 MHz) analysis was performed on washing aqueous solution, dried under vacuum and re-dispersed in D_2O. These showed no signal for Cltx (1.0 ppm, 3.15 ppm, 3.35 ppm), meaning that the conjugation yield can be considered quantitative; other signals can be attributed to ionic liquid remained in the waste.

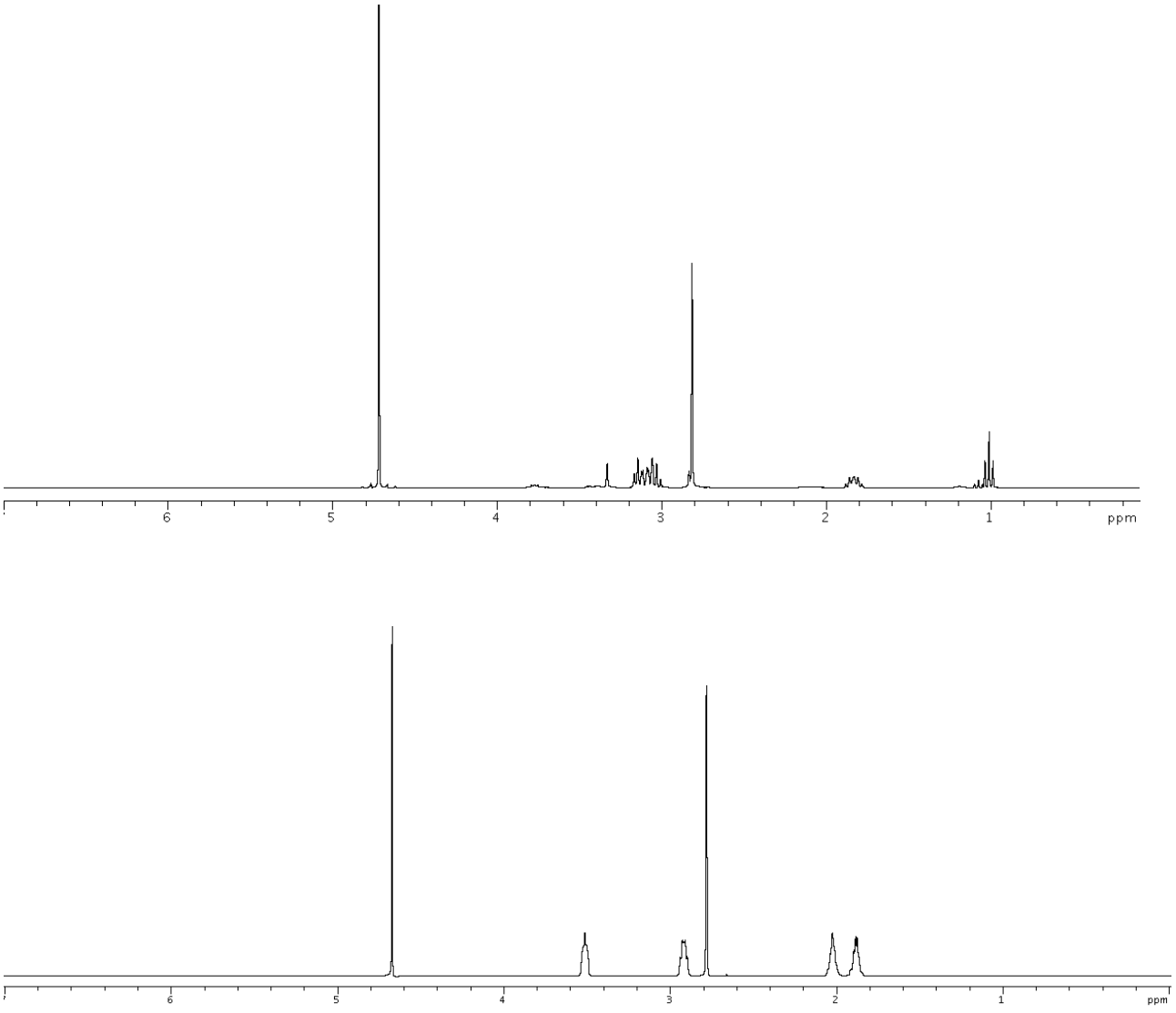

Figure S3: top) ^{1}H-NMR spectrum of Cltx. bottom) ^{1}H-NMR spectrum of residual after washings. Reference line for D_2O 4.72 ppm.

References

[1]Chiappe C, Rajamani S, D'Andrea F. A dramatic effect of the ionic liquid structure in esterification reaction in protic ionic media.***Green Chem.***, 2013,**15**, 137-143