

SUPPLEMENTARY MATERIAL

Evaluating the degree of substitution of water-insoluble acyl derivatives of hyaluronan using Raman spectroscopy: method development and comparison with gas chromatography and ^1H NMR

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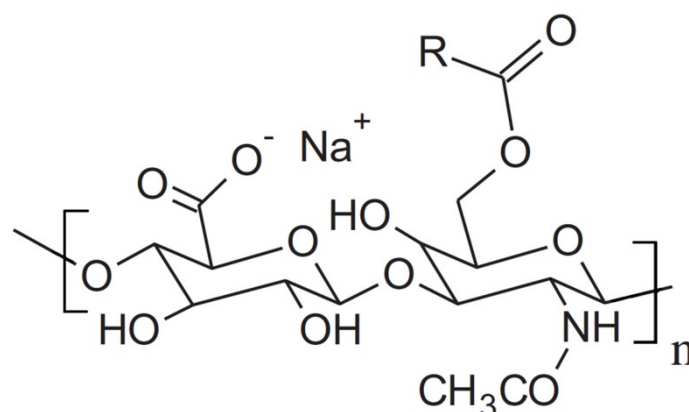


Fig. S1 Scheme of HA acyl derivative structure denoting a substituted disaccharide unit, where R is the aliphatic side chain of the acyl group and n is the number of repeating disaccharide units.

Table S1 List of palmitoyl-modified HA oligosaccharides used for calibrating the Raman method.

Sample	Description	DS / %
HA ₅ -PAL	5 repeating units, 1 palmitoyl side-chain	20
HA ₄ -PAL	4 repeating units, 1 palmitoyl side-chain	25
HA ₃ -PAL	3 repeating units, 1 palmitoyl side-chain	33
HA ₂ -PAL	2 repeating units, 1 palmitoyl side-chain	50
HA ₃ -2PAL	3 repeating units, 2 palmitoyl side-chains	67
HA ₂ -2PAL	2 repeating units, 2 palmitoyl side-chains	100

Table S2 List of palmitoyl-HA standards used for calibrating the ^1H NMR method.

Sample	M_w / kDa	DS_{GC} / %	DS_{NMR} / %
pHA-cal-1	330	8.1	18
pHA-cal-2	330	13.7	31
pHA-cal-3	330	19.8	43
pHA-cal-4	330	25.2	56
pHA-cal-5	330	31.2	67
pHA-cal-6	330	35.5	80
pHA-cal-7	330	45.7	102