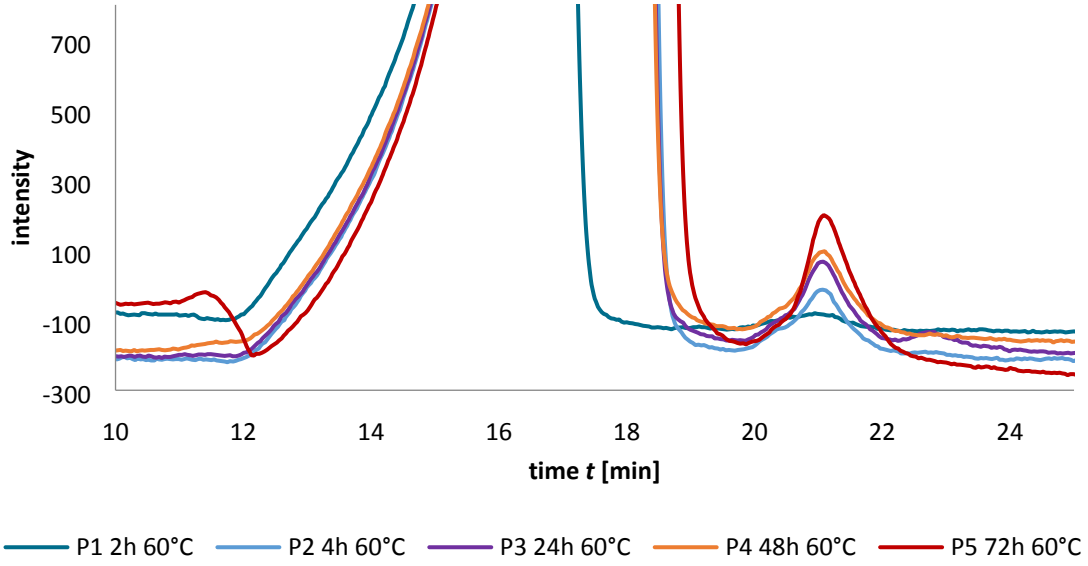

Figure 8: Size exclusion chromatogram of a D-galacturonic acid model system heated at 60 °C.

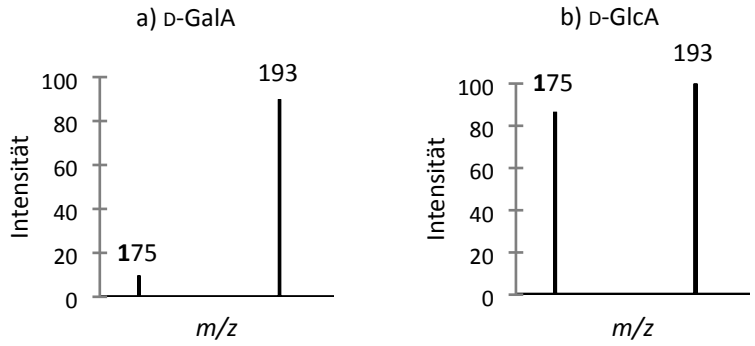

Figure 9: HR-ESI-MS measurements of model systems of D-GalA (a) and D-GlcA (b) heated for 90 min at 100 °C and a water content of 20 %.

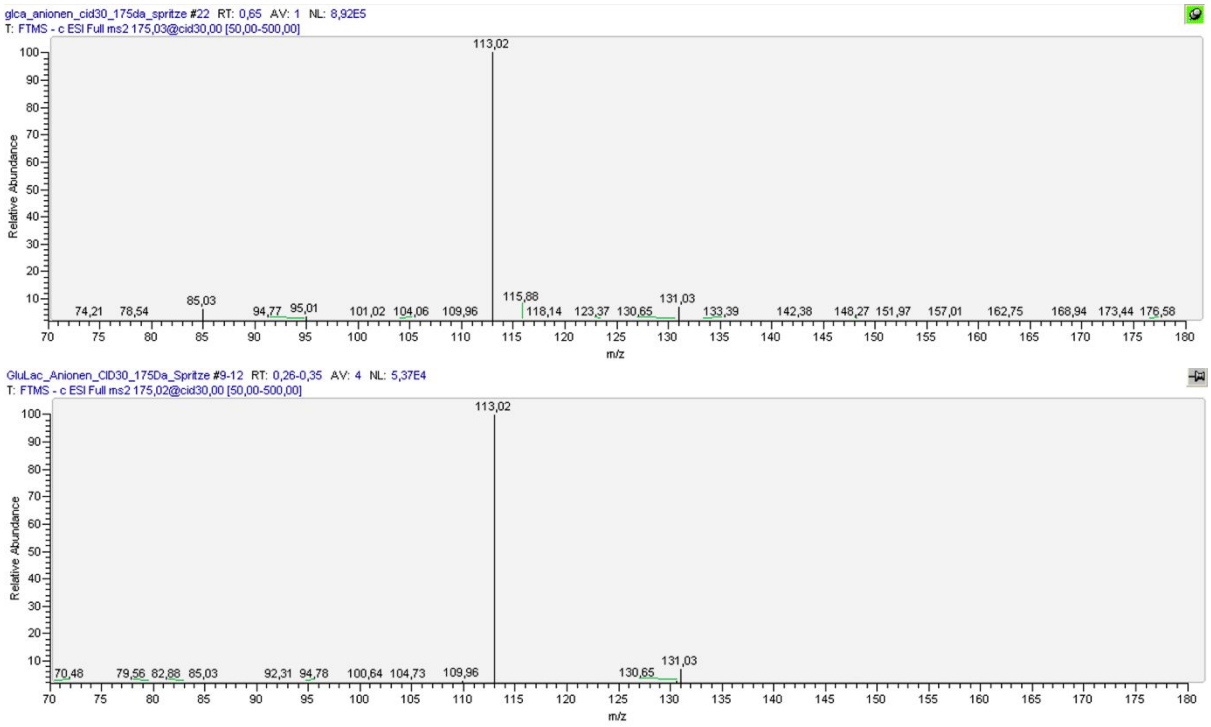

Figure 10: ESI-MS/MS measurements of a standard solution of glucuronolactone (on top) and the *m/z* 175 found within glucuronic acid model systems heated for 90 min at 100 °C and a water content of 20 %. The measurements were performed using a CID 30.

Table 2: polarimetric measurements and calculations of the mutarotation velocity

D-galacturonic acid		**D-galactose**		**D-galactose + formic acid**	
pH: 3,1		pH: 3,4		pH: 3,4	
$\alpha_{(t)}$ [°]	**t [*s*]**	**$\alpha_{(t)}$ [°]**	**t [*s*]**	**$\alpha_{(t)}$ [°]**	**t [*s*]**
5,10	213	7,95	78	7,80	127
5,05	260	7,75	132	7,65	138
4,80	308	7,70	180	7,60	146
4,75	326	7,65	210	7,50	190
4,55	378	7,65	252	7,40	202
4,35	438	7,50	300	7,30	240
4,25	510	7,45	330	7,20	254
4,10	570	7,45	390	7,15	312
4,00	630	7,38	450	7,05	372
3,90	690	7,25	510	6,95	432
3,85	750	7,25	570	6,80	492
3,75	810	7,15	630	6,70	552
3,70	870	7,15	690	6,65	612
3,60	930	7,05	750	6,60	672
3,55	1050	7,05	810	6,45	732
3,45	1170	6,95	870	6,40	792
3,30	1410	6,85	990	6,30	852
3,25	1530	6,70	1110	6,25	912
3,20	1650	6,70	1230	6,20	972
3,15	1770	6,60	1350	6,15	1032
3,10	2010	6,50	1470	6,10	1092
3,10	2130	6,40	1590	6,00	1152
3,10	2250	6,35	1710	6,00	1212
3,05	2370	6,20	1830	5,95	1272
3,05	2550	6,05	2130	5,85	1332
3,05	2670	5,95	2250	5,75	1452
3,05	2790	5,85	2370	5,65	1572
3,05	2910	5,80	2490	5,60	1692
3,05	3030	5,75	2610	5,50	1812
3,05	3150	5,65	2730	5,45	1932
3,05	3270	5,65	2850	5,30	2112
3,05	3390	5,55	2970	5,15	2292
3,05	3510	5,50	3210	5,10	2472
		5,35	3450	5,00	2652
		5,35	3690	5,00	2832
		5,25	3930	4,90	3012
		5,20	4230	4,85	3192
		5,05	4560	4,80	3372
		5,00	4890	4,75	3552
		4,90	5190	4,70	3912
		4,80	6198	4,65	4092
		4,70	6600	4,55	4272
		4,55	7200	4,50	4452
		4,55	7860	4,50	4812

Equation for the calculation of the mutarotation velocity:

time dependent rotation angle alteration = $-\ln(\alpha_{(t)} - \alpha_{(\infty)})$

$slope_{GalA}$ (mutarotation velocity [hertz]) $y = 1{,}92^{-3}x - 1{,}18$

$slope_{Gal}$ mutarotation velocity [hertz] $y = 4{,}16^{-4}x - 1{,}24$

$slope_{Gal + formic\ acid}$ mutarotation velocity [hertz] $y = 7{,}24^{-4}x - 1{,}24$