SUPPORTING INFORMATION

Ammoxidation of Lignocellulosic Materials: Formation of *non*-Heterocyclic Nitrogenous Compounds from Monosaccharides

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Table S1. Relative Amount of Other Nitrogenous Compounds in the Crude Products Obtained by Ammoxidation of D-Glucose at 70 °C, 100 °C and 140 °C (0.2 MPa O_2, 3 h).

Rt (min)	*Compound*	70 °C	100 °C	140°C
		Relative percentage [‰][d]		
8.56[a,b], 16.7[b]	Urea (10)	1.10	0.34	0.36
11.41[b], 15.53[c]	Ammonium carbamate (34)	0.14	0.16	0.05
13.6[b]	Ammonium oxalate (37)	1.94	0.81	3.36
7.16[b]	Acetamide (86)	0.09	0.07	0.00

Numbers in parentheses refer to peak numbering as given in Table 1. [a] *carbodiimide derivative;* [b] *bis TMS derivative;* [c] *tris TMS derivative;* [d] *Values were calculated as ratio of the relative peak areas of the analytes and that obtained from 200 µg of the internal standard phenyl α-glucopyranoside.*

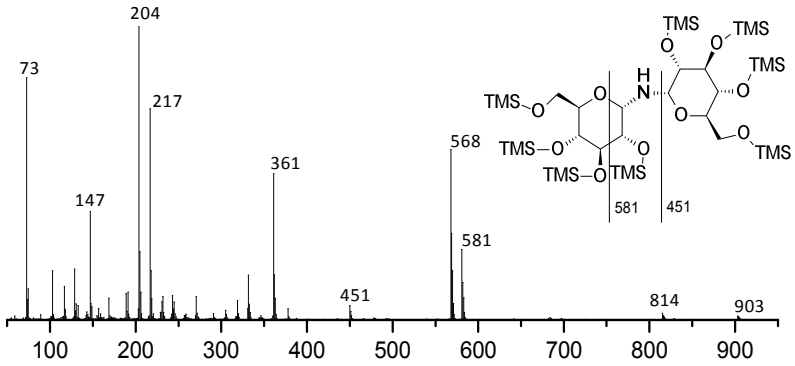

Figure S1. EI-MS (70 eV) spectrum of octakis-*O*-TMS di(glucopyranosyl) amine. Assignment in accordance with literature:[1-4] *m/z* 903 ($M^+ - CH_3$), 814 ($M^+ - [CH_2O\text{-TMS}]$), 581 ([tetra-*O*-TMS glucopyranosylamine-CH=CH-O-TMS)$^+$], 568 (tetra-*O*-TMS glucopyranosylamine-CH$^+$-O-TMS), 451 ([tetra-*O*-TMS glucopyranosyl]$^+$), 361 (451 – [HO-TMS]).

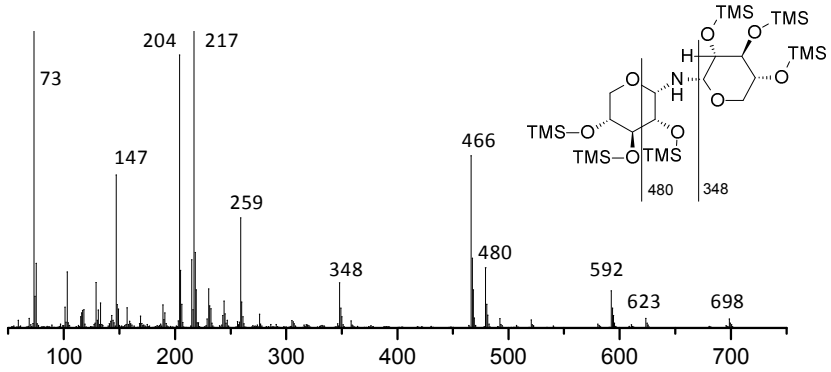

Figure S2. EI-MS (70 eV) spectrum of hexakis-*O*-TMS di(xylopyranosyl) amine.

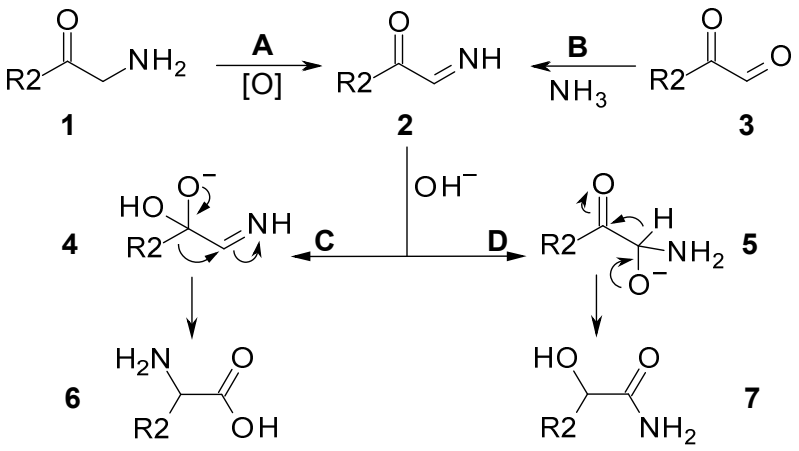

Figure S3. Proposed reaction mechanisms for the formation of α-amino acids and α-hydroxyamides.

EI-MS (70 eV) fragmentation pattern of persilylated commercial *N*-heterocyclic compounds.

N,O-bis(trimethylsilyl)-lactamide: *m/z* 233 (M^+; 0.7%), 218 (M^+ - CH_3; 11.8%), 188 (29.4%), 147 ($(SiMe_3)O^+$ ($SiMe_2$); 44,5%), 133 (6.0%), 117 ($CH_3C^+HOSiMe_3$; 39.6%), 103 (3.9%), 90 ($SiMe_3OH$; 6.4%), 73 ($SiMe_3$; 100%), 59 (5.2%).

N,O-bis(trimethylsilyl)-glycolamide: *m/z* 219 (M^+; 1.5%), 204 (M^+ - CH_3; 26.0%), 188 (44.6%), 177 (3.8%), 158 (1.9%), 147 ($(SiMe_3)O^+(SiMe_2)$; 38.7%), 133 (6.8%), 116 (12.4%), 104 (28.9%), 95 (2.4%), 89 (10.6%), 73 (100%), 66 (7.4%).

Tris(trimethylsilyl)carbamate: *m/z* 262 (M^+ - CH_3; 23.2%), 174 ($SiMe_3NHC^+OSiMe_2$; 7.0%), 147 ($(SiMe_3)O(SiMe_2)$; 100.%), 131 (5.1%), 117 (1.4%), 100 (5.3%), 73 (31.5%).

References

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