Anti-Diabetic Vanadium Compound and Membrane Interfaces: Interface Facilitated Metal Complex Hydrolysis

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Electronic Supplemental Material

Table S1. Compilation of ^{1}H NMR chemical shifts of $[VO_2(ma)_2]^-$, maltol, and CTAB as a function of pH in aqueous solutions below and above the CTAB *cmc*.

Figure S1. The ^{1}H NMR spectra of aqueous samples of $[VO_2(ma)_2]^-$ and maltol mixture in D_2O as a function of pH (a). Plot of chemical shifts for $[VO_2(ma)_2]^-$ (C_{Ha}, C_{Hb}, and C_{CH3}) and maltol (L_{Ha}, L_{Hb}, and L_{CH3}) protons as a function of solution pH (b). An asterisk indicates overlapping C_{Ha} and L_{Ha} signals.

Table S2. ^{1}H NMR chemical shifts in aqueous solutions for $[VO_2(ma)_2]^-$, Hma, and ma^- species. Data are based on spectra recorded in the pH range from 5.1 and 10.8.

Table S1. Compilation of ^{1}H NMR chemical shifts of $[VO_2(ma)_2]^-$, maltol, and CTAB as a function of pH in aqueous solutions below and above the CTAB *cmc*.

Probe	**[CTAB] ,mM**	**pH**	**Probe chemical shifts, ppm**			**CTAB chemical shifts, ppm**				
			Ha	**Hb**	**CH_3**	**$N(CH_3)_3$**	**α-CH_2**	**β-CH_2**	**γ-o-CH_2**	**π-CH_3**
-	0.2	7.2	-	-	-	3.07	3.27	1.75	1.26	0.84
-	10	7.2	-	-	-	3.16	3.38	1.76	1.29	0.87
-	20	7.2	-	-	-	3.16	3.39	1.76	1.29	0.87
maltol	50	7.4	6.43	7.89	2.26	3.13	3.38	1.72	1.24	0.82
maltol	50	8.0	6.39	7.84	2.29	3.13	3.38	1.72	1.24	0.82
maltol	50	9.3	6.32	7.69	2.26	3.13	3.37	1.71	1.24	0.82
maltol	0	7.0	[a]6.51	7.99	2.37	-	-	-	-	-
maltol	0	9.7	6.40	7.85	2.32	-	-	-	-	-
maltol	0	10.3	6.40	7.83	2.31	-	-	-	-	-
maltol	0	10.8	6.34	7.79	2.28	-	-	-	-	-
$[VO_2(ma)_2]^-$	50	6.9	6.45	7.95	2.35	3.13	3.39	1.72	1.24	0.82
$[VO_2(ma)_2]^-$	50	7.9	6.45	7.95	2.35	3.13	3.39	1.72	1.24	0.82
$[VO_2(ma)_2]^-$	50	9.0	6.45	7.96	2.35	3.13	3.38	1.72	1.24	0.81
$[VO_2(ma)_2]^-$	50	9.1	6.48	7.99	2.39	3.16	3.39	1.76	1.28	0.86
$[VO_2(ma)_2]^-$	0	7.0	[a]6.51	8.06	2.42	-	-	-	-	-
$[VO_2(ma)_2]^-$	0	9.7	6.53	8.06	2.42	-	-	-	-	-
$[VO_2(ma)_2]^-$	0	10.3	6.53	8.05	2.42	-	-	-	-	-
$[VO_2(ma)_2]^-$	0	10.8	6.5	8.03	2.39	-	-	-	-	-

[a] Signals of $[VO_2(ma)_2]^-$ and maltol are overlapping.

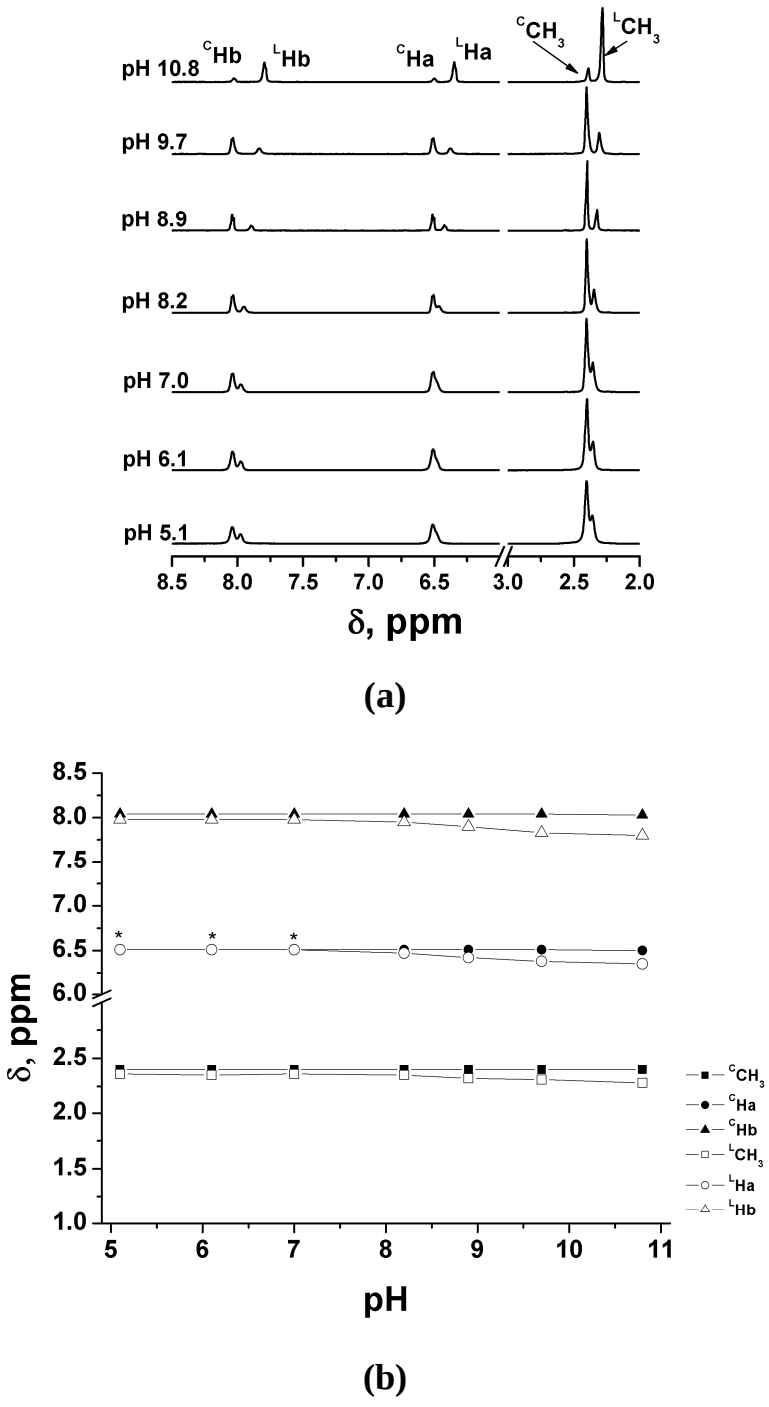

Figure S1. The ^{1}H NMR spectra of aqueous samples of $[VO_2(ma)_2]^-$ and maltol mixture in D_2O as a function of pH (a). Plot of chemical shifts for $[VO_2(ma)_2]^-$ (C_{Ha}, C_{Hb}, and C_{CH3}) and maltol (L_{Ha}, L_{Hb}, and L_{CH3}) protons as a function of solution pH (b). An asterisk indicates overlapping C_{Ha} and L_{Ha} signals.

Table S2. ^{1}H NMR chemical shifts in aqueous solutions for $[VO_2(ma)_2]^-$, Hma, and ma^- species. Data are based on spectra recorded in the pH range from 5.1 and 10.8.

Species	$\delta(CH_3)$ ppm	$\delta(H_a)$ ppm	$\delta(H_b)$ ppm
$[VO_2(ma)_2]^-$	2.40	6.50	8.03
Hma	2.36	6.48	7.98
ma^-	2.28	6.34	7.79