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Supporting Information

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Insights into the Acid–Base Properties of Pt^{IV}–Diazidodiam(m)inedihydroxido Complexes from Multinuclear NMR Spectroscopy

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Table S1. pH-induced ^{14}N chemical shift changes for complex **1** as determined by 1D $^{14}\text{N}\{^1\text{H}\}$ NMR.

Assignment	$\Delta\delta$ (pH 1 to pH 5)	$\Delta\delta$ (pH 5 to pH 10)
<i>w</i> , $\text{Pt}^{\text{IV}}\text{-NNN}$	0.55	0.11
<i>x</i> , $\text{Pt}^{\text{IV}}\text{-NNV}$	6.32	0.28
<i>y</i> , $\text{Pt}^{\text{IV}}\text{-NNN}$	n.d. ^a	n.d. ^a
<i>z</i> , $\text{Pt}^{\text{IV}}\text{-NH}_3$	2.15 (2.23 ^b)	0.06 (0.10 ^b)

^a Accurate determination of the peak shift for *y* was not possible due to the broadness of the signal. ^b Chemical shift change of the coordinated ammine as determined by $^{15}\text{N}\{^1\text{H}\}$ NMR.

Table S2. pH-induced ^{14}N chemical shift changes for complex **2** as determined by 1D $^{14}\text{N}\{^1\text{H}\}$ NMR.

Assignment	$\Delta\delta$ (pH 1 to pH 5)	$\Delta\delta$ (pH 5 to pH 9)
w, $\text{Pt}^{\text{IV}}\text{-NNN}$	1.00	0.05
x, $\text{Pt}^{\text{IV}}\text{-NNN}$	5.33	0.22
y, $\text{Pt}^{\text{IV}}\text{-NNN}$	n.d. ^a	n.d. ^a
z, $\text{Pt}^{\text{IV}}\text{-NH}_3$	0.93 (1.12 ^b)	0.07 (0.11 ^b)

^a Accurate determination of the peak shift for y was not possible due to the broadness of the signal. ^b Chemical shift change of the coordinated ammine as determined by $^{15}\text{N}\{^1\text{H}\}$ NMR.

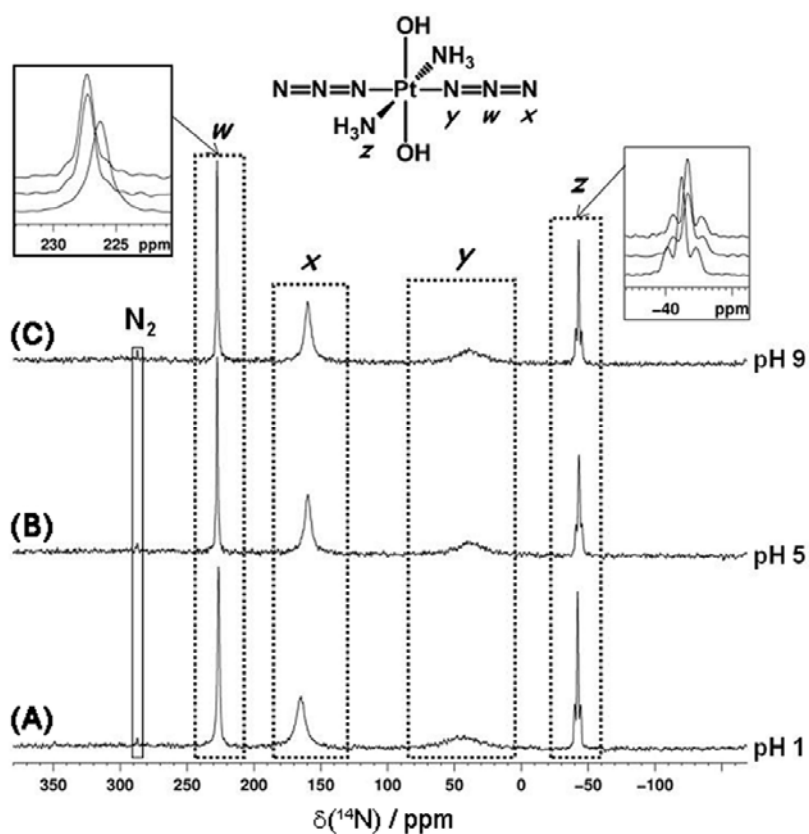


Figure S1. 1D $^{14}\text{N}\{^1\text{H}\}$ NMR spectra of complex **2** in D_2O in the dark at 298 K at (A) pH 1, (B) pH 5, and (C) pH 9. Assignments (internal reference N_2 at 287 ppm): coordinated azido ligand as labeled in structure ($w = \text{Pt}^{\text{IV}}\text{-NNN}$, $x = \text{Pt}^{\text{IV}}\text{-NNN}$, $y = \text{Pt}^{\text{IV}}\text{-NNN}$); ammine ligand ($z = \text{Pt}^{\text{IV}}\text{-NH}_3$). Inserts of signals w and z show their dependence on the pH.

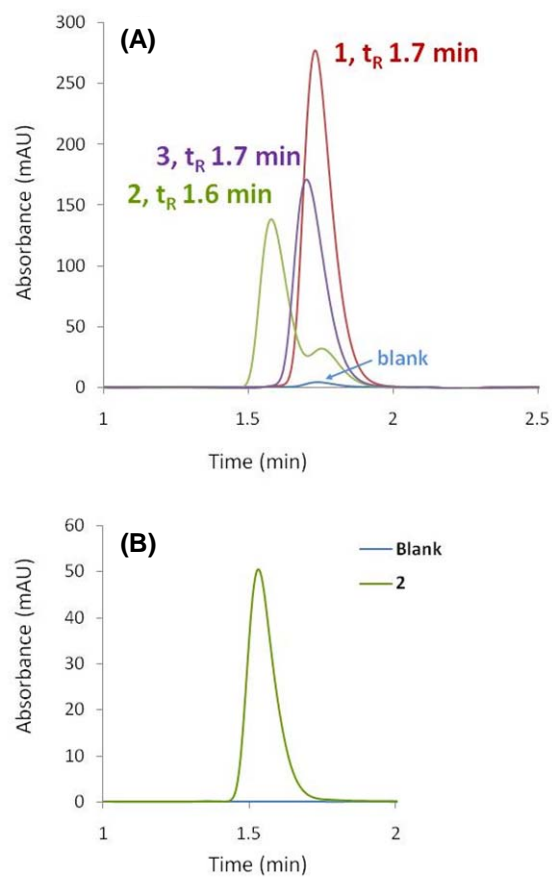


Figure S2. HPLC chromatogram in 5% water/95% acetonitrile (pH 6) with corresponding retention times at $\lambda = 254$ nm of (A) compounds **1-3** and blank for comparison, (B) compound **2** (< 5 min after the sample was dissolved) and blank for comparison.