Supporting Information

Chemically reversible binding of H_2S to a zinc porphyrin complex: towards implementation of a reversible sensor via a "coordinative-based approach".

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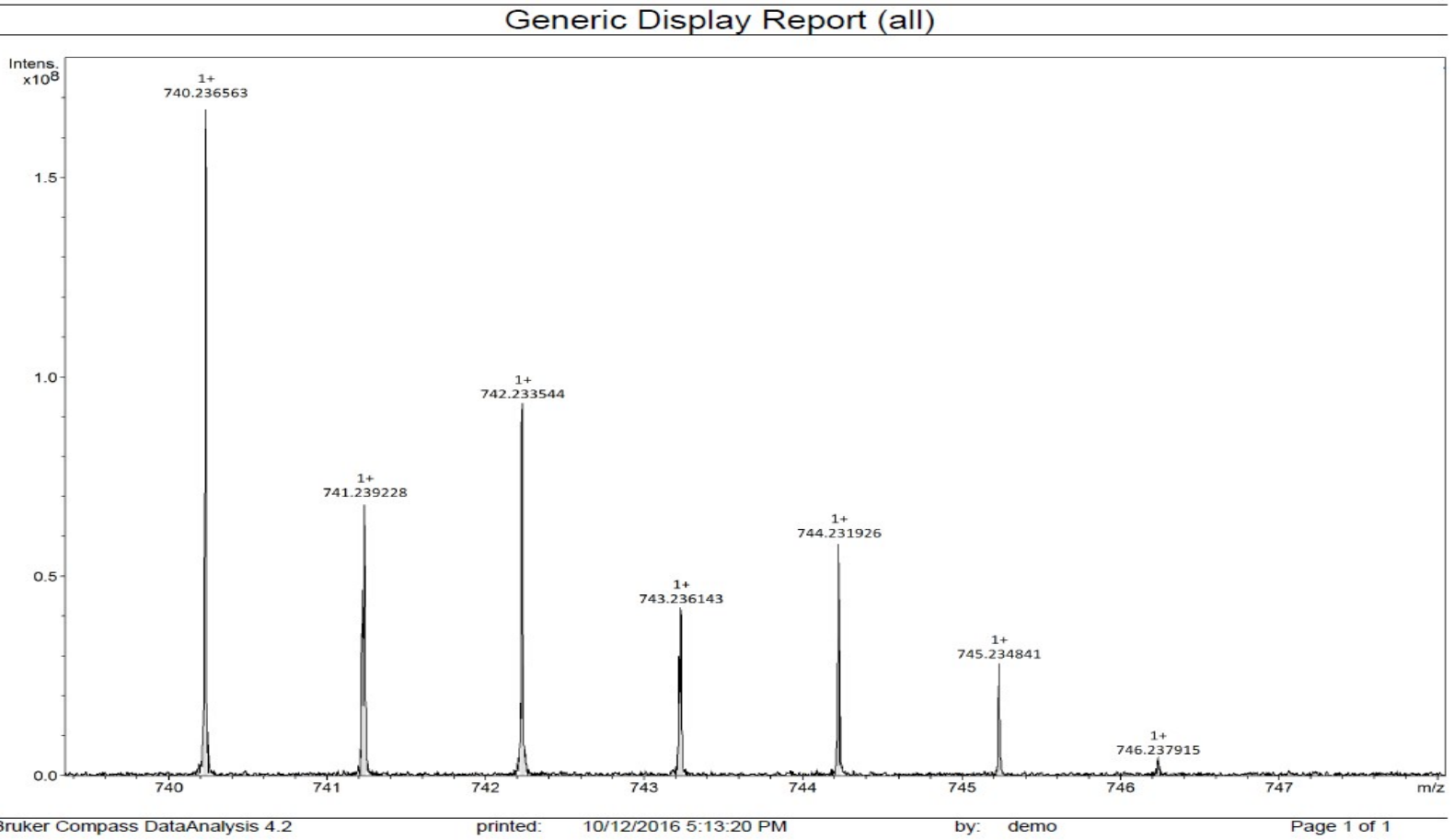

Figure S1. HR MALDI-FT-ICR spectrum of *TMPyPZn* in water solution (ionizing the sample in the positive ion mode)

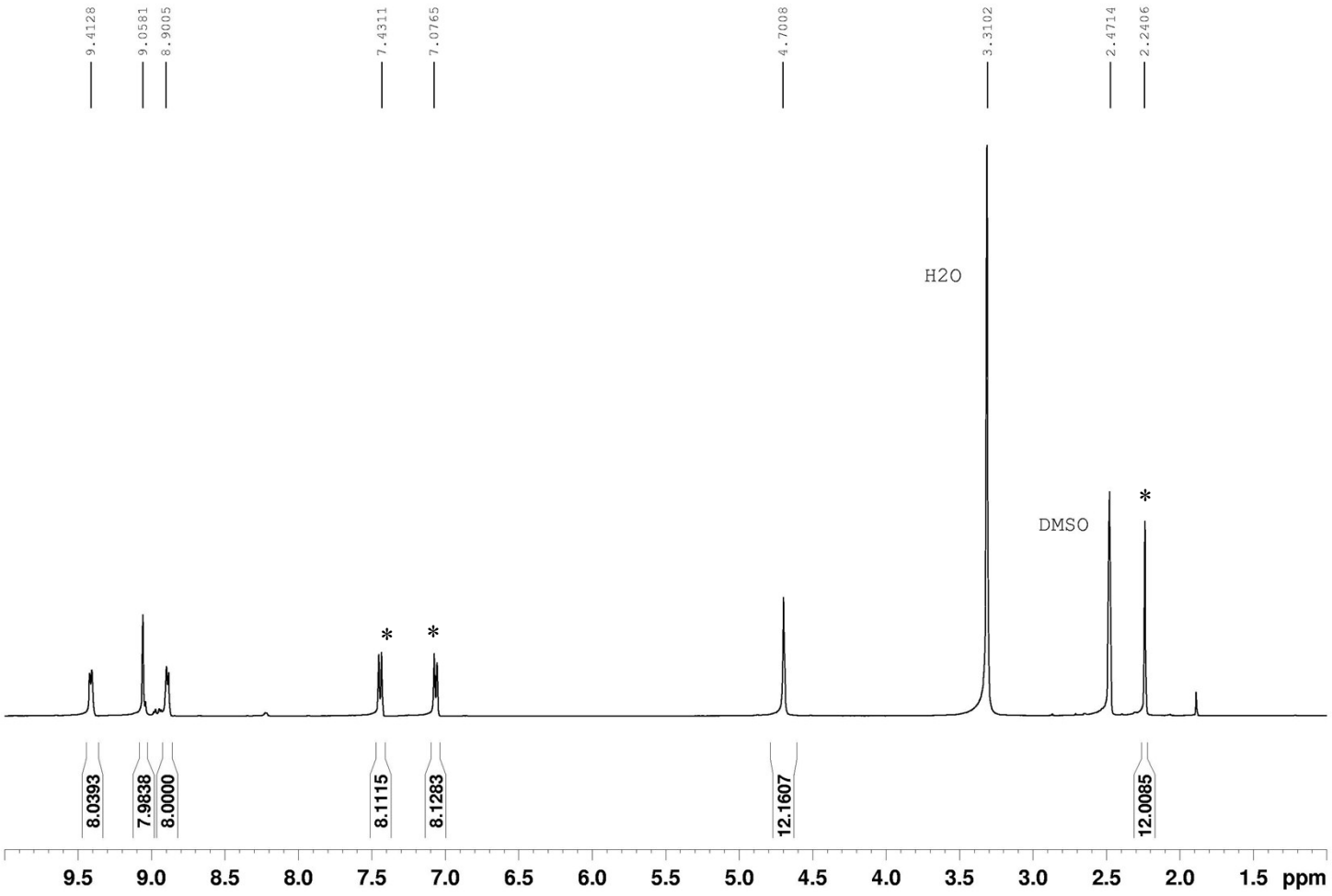

Figure S2. [1]H NMR spectrum of *TMPyPZn* in DMSO-d_6 (rt, 400.13 MHz). Peaks denoted with a (*) correspond to the toluenesulfonate counterion.

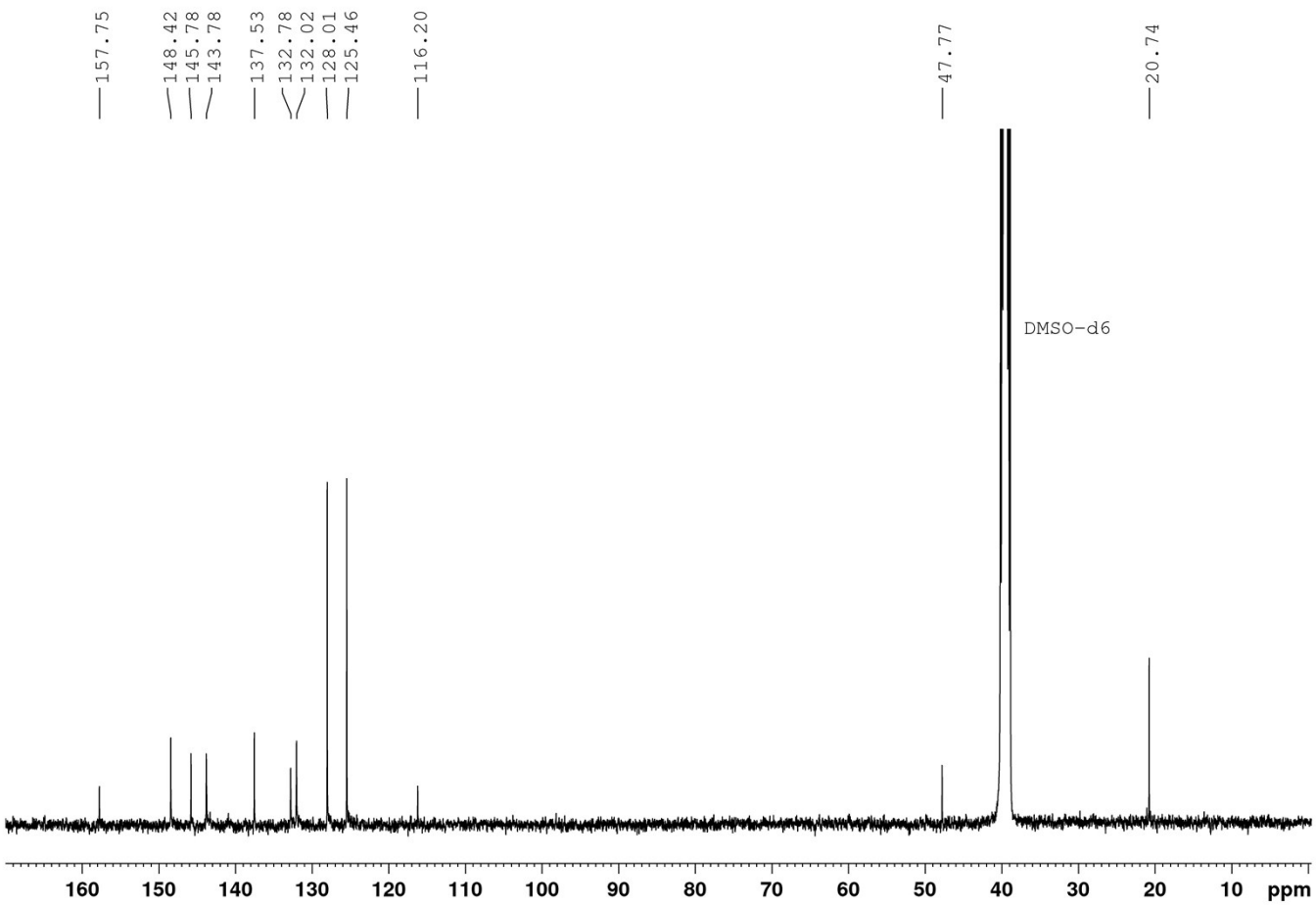

Figure S3. ^{13}C NMR spectrum of *TMPyPZn* in DMSO-d_6 (rt, 400.13 MHz)

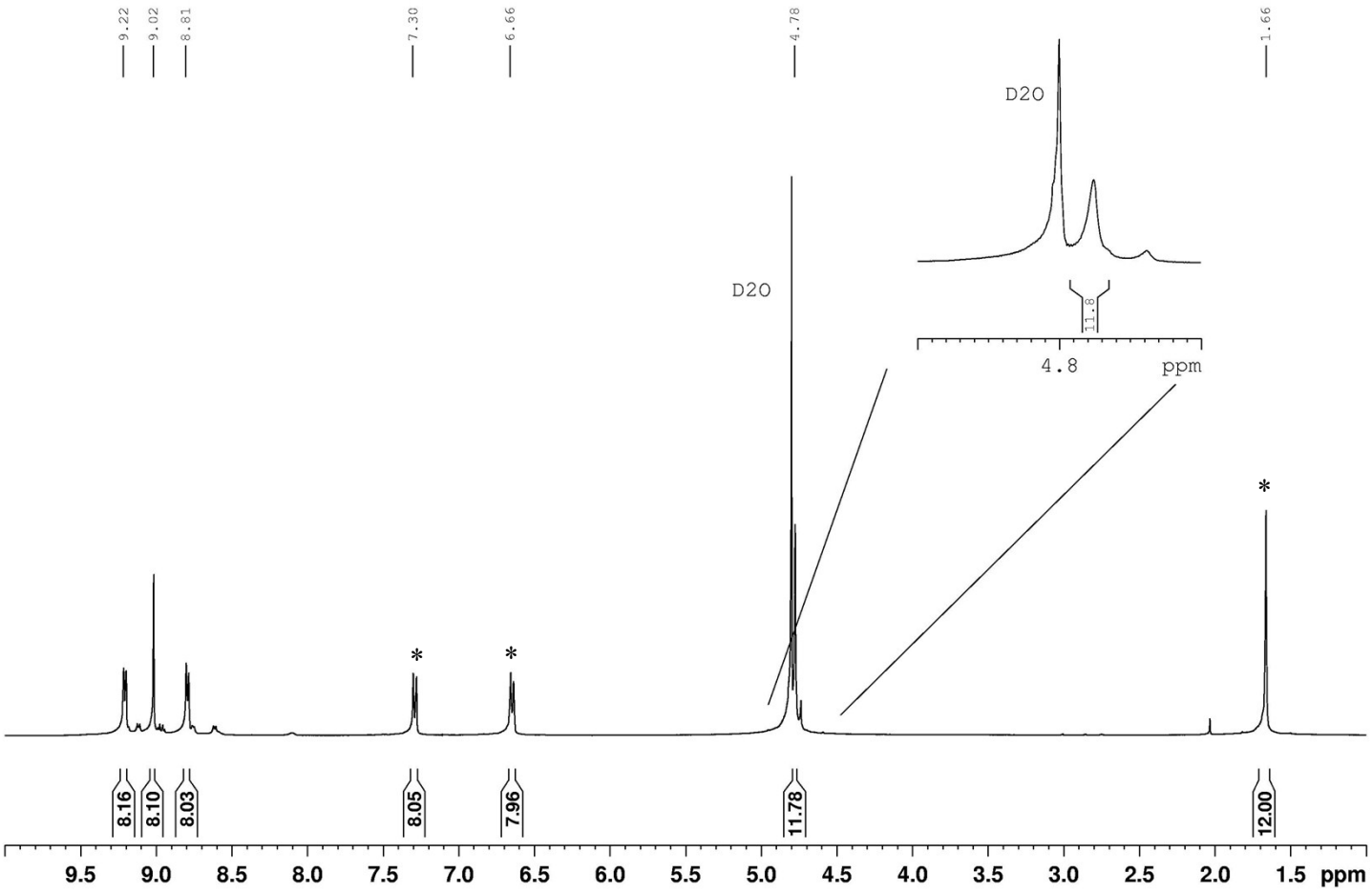

Figure S4. ^{1}H NMR spectrum of *TMPyPZn* in D_2O (rt, 400.13 MHz). Peaks denoted with a (*) correspond to the toluenesulfonate counterion.

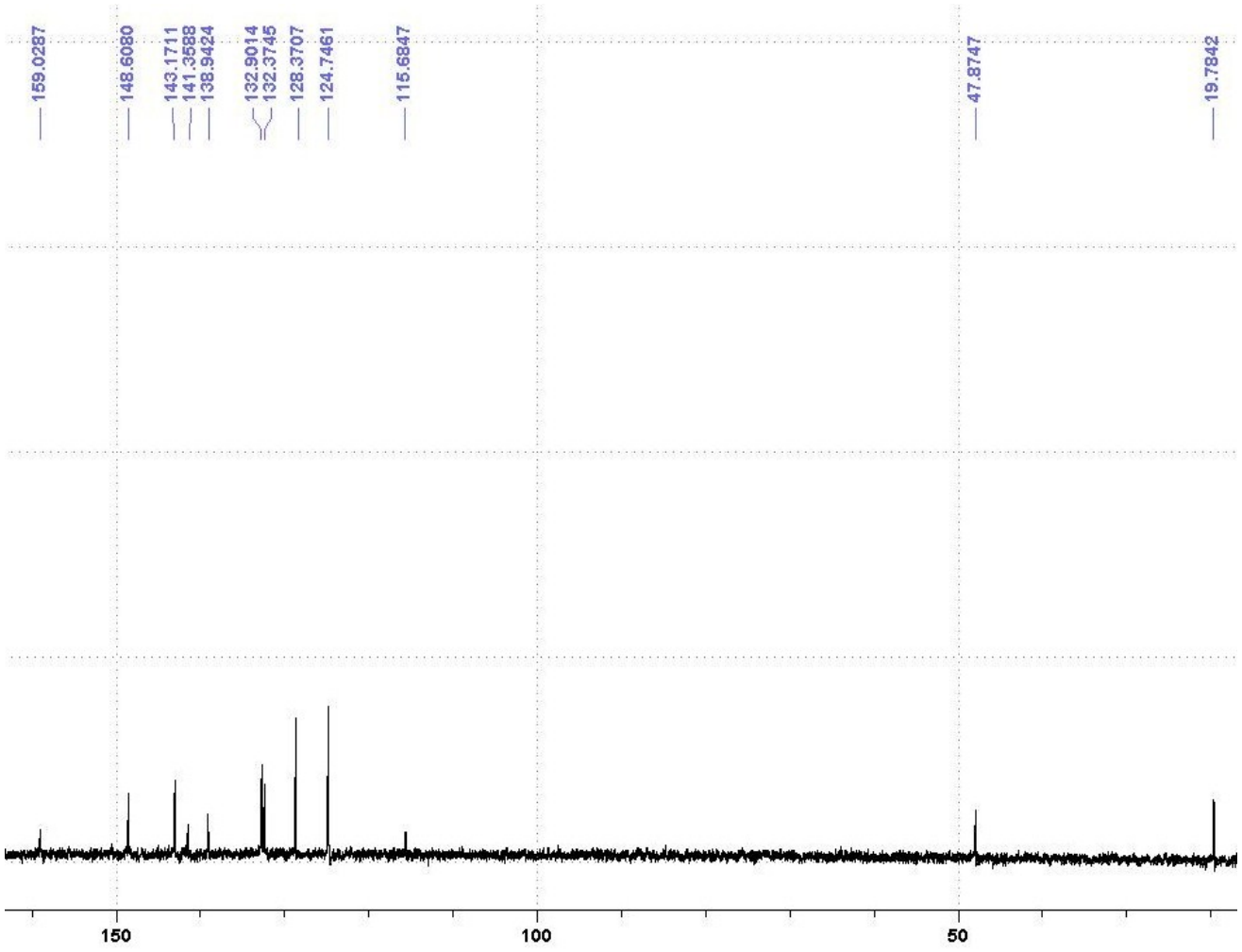

Figure S5. ^{13}C NMR spectrum of *TMPyPZn* in D_2O (rt, 400.13 MHz)

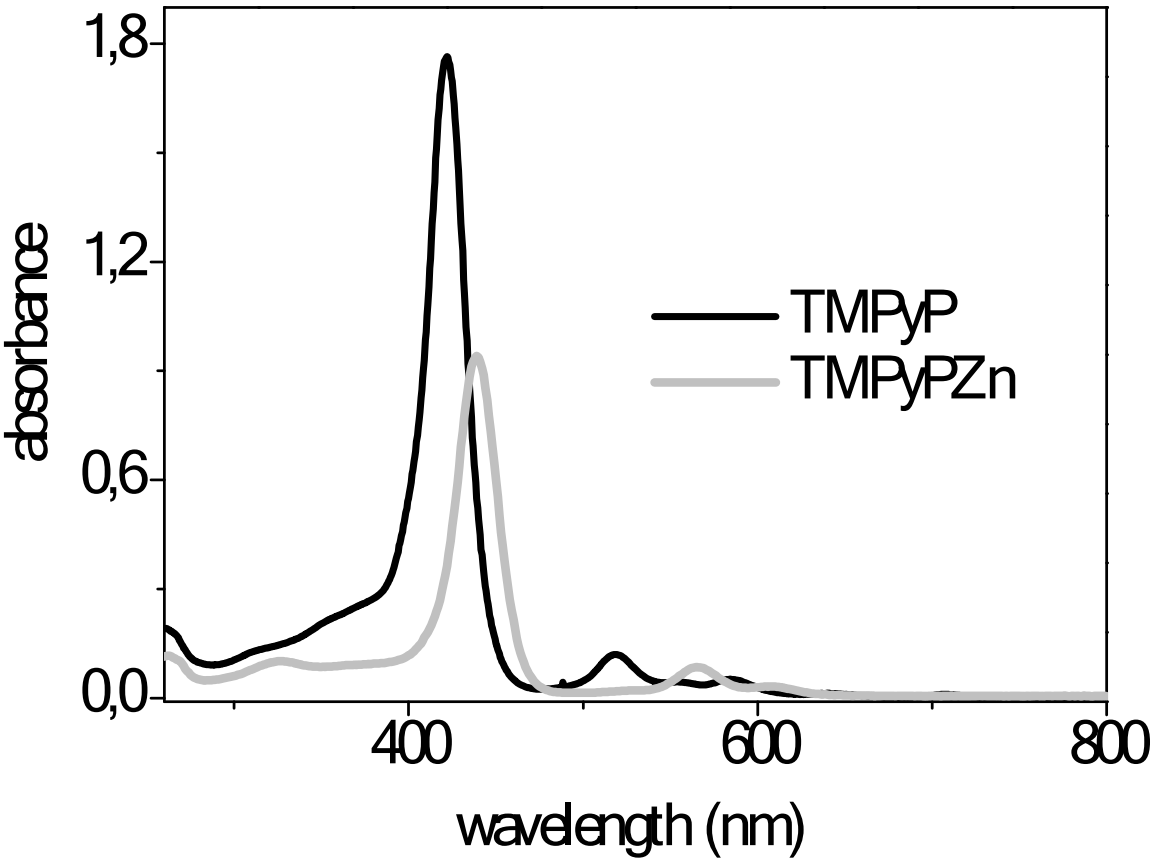

Figure S6. Electronic absorption spectra of TMPyP and *TMPyP*Zn (rt, hepes 25 mM, pH 7.4). [TMPyP] = 5μM [*TMPyPZn*] = 5μM**.**

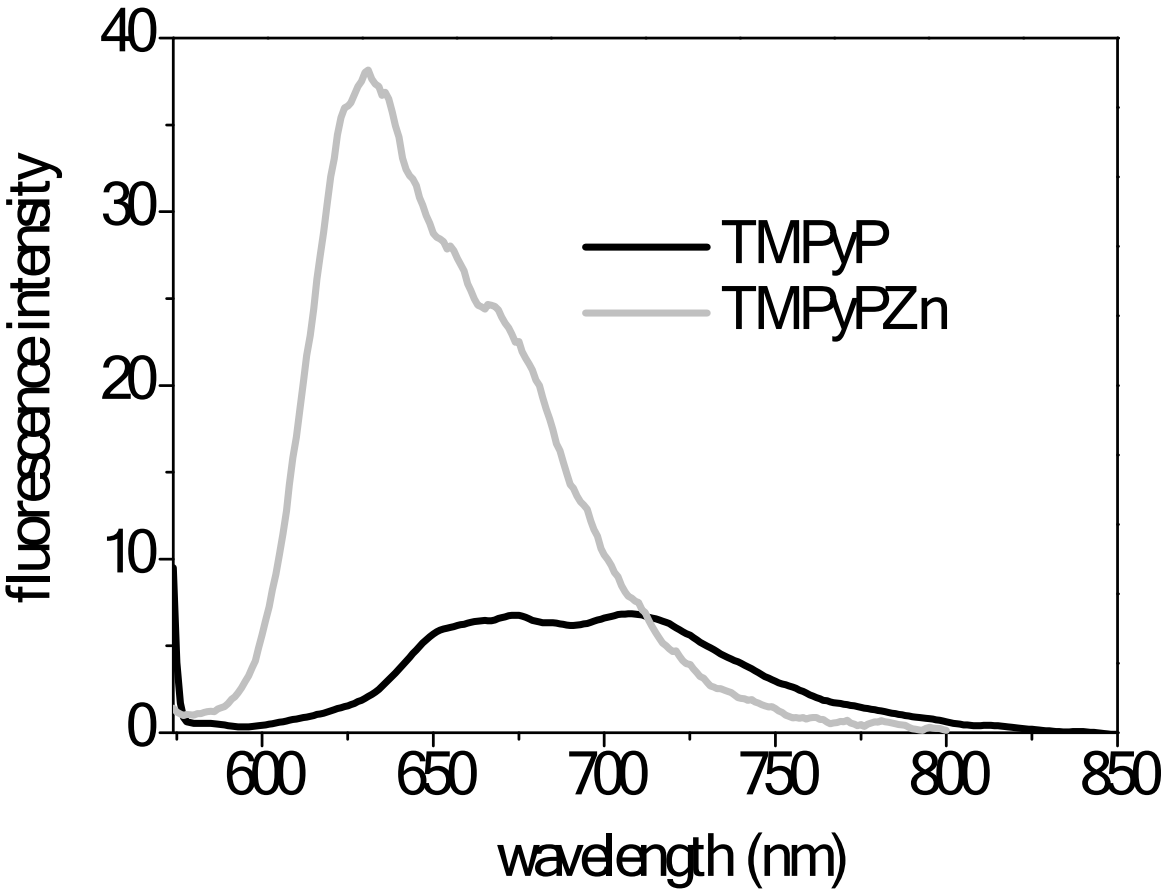

Figure S7. Fluorescence spectra of *TMPyP* and *TMPyPZn* (rt, hepes buffer 25mM, pH 7.4) upon excitation at 563 nm. [TMPyP] = 5µM [TMPyPZn] = 5µM**.**

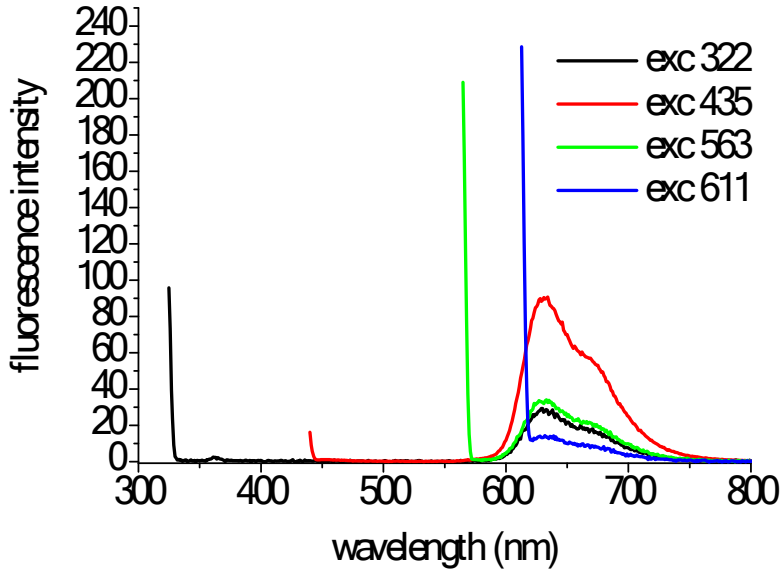

Figure S8. Fluorescence spectra of *TMPyPZn* (rt, hepes buffer 25 mM, pH 7.4) upon excitation at 322, 435, 563 and 611 nm. [TMPyPZn] = 5µM**.**

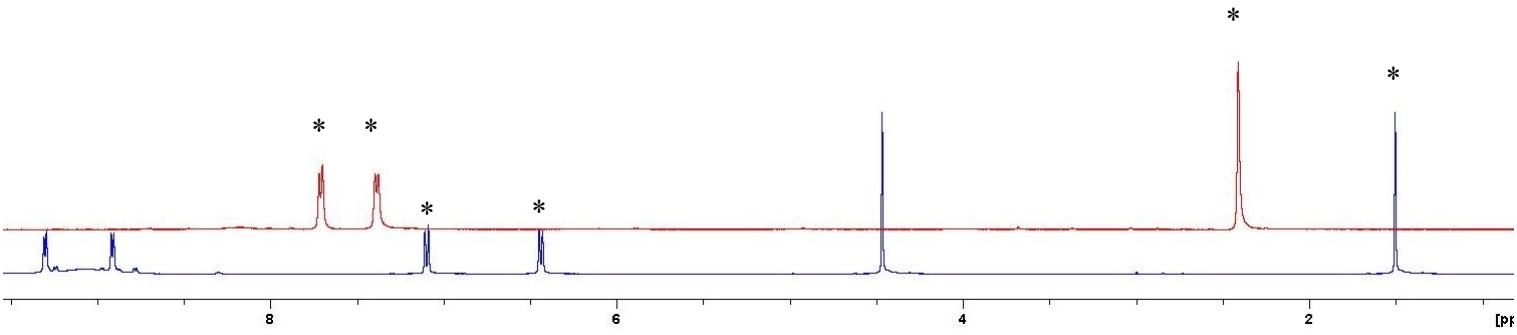

Figure S9. ^{1}H NMR spectrum of *TMPyP* in D_2O (lower trace), after addition of an excess of HS^- (upper trace). Peaks denoted with a (*) correspond to the toluenesulfonate counterion.

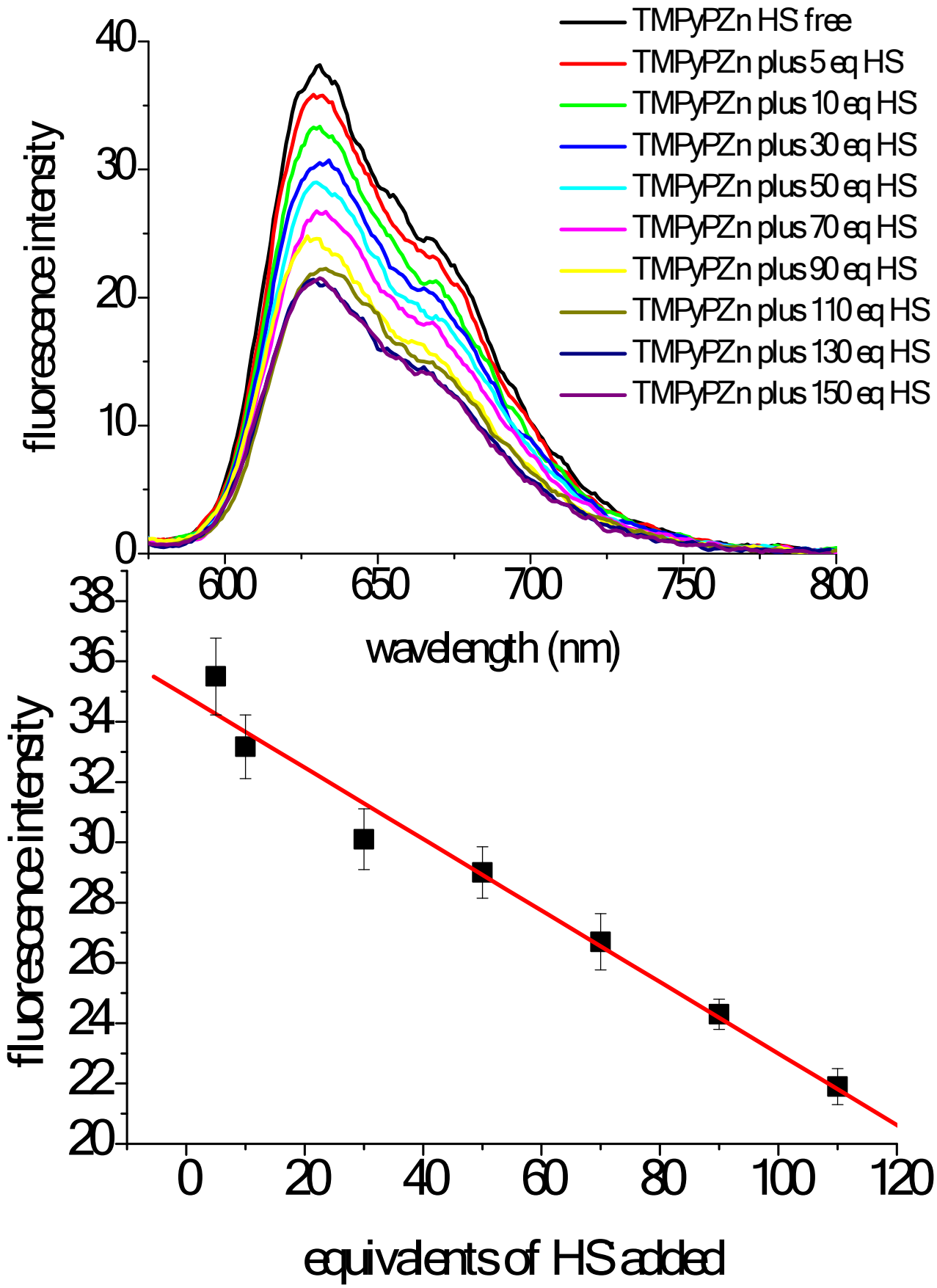

Figure S10. (A) Emission spectra of TMPyPZn (exc 563 nm) when titrated with NaSH (rt, hepes buffer 25 mM, pH = 7.4). [TMPyZn] = $5*10^{-6}$ M; end concentration of NaSH varied in the range 25-750 µM. (B) Fluorescence intensity of the system versus HS^- concentration.

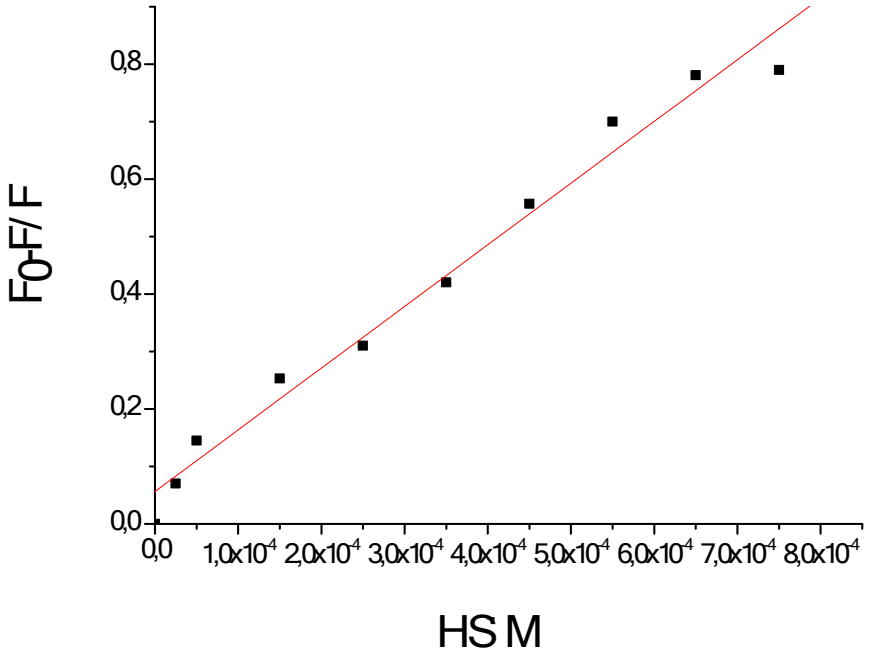

Figure S11. Fluorescence titration of TMPyPZn (λ_{ex} = 563 nm; λ_{em} = 630 nm) with NaSH (rt, hepes buffer 25 mM, pH = 7.4). [TMPyZn] = $5*10^{-6}$ M; end concentration of NaSH varied in the range 25-750 μM. F_0 is the fluorescence intensity of the solution without HS^-. The ratio F_0-F/F is plotted versus the total HS^- concentration. The solid line represents the best fit to a linear fitting with a K_b of 1036 ± 53 M^{-1}. The equation used for data fitting is :[1]

$$F_0\text{-}F/F = K_b\,[HS^-]$$

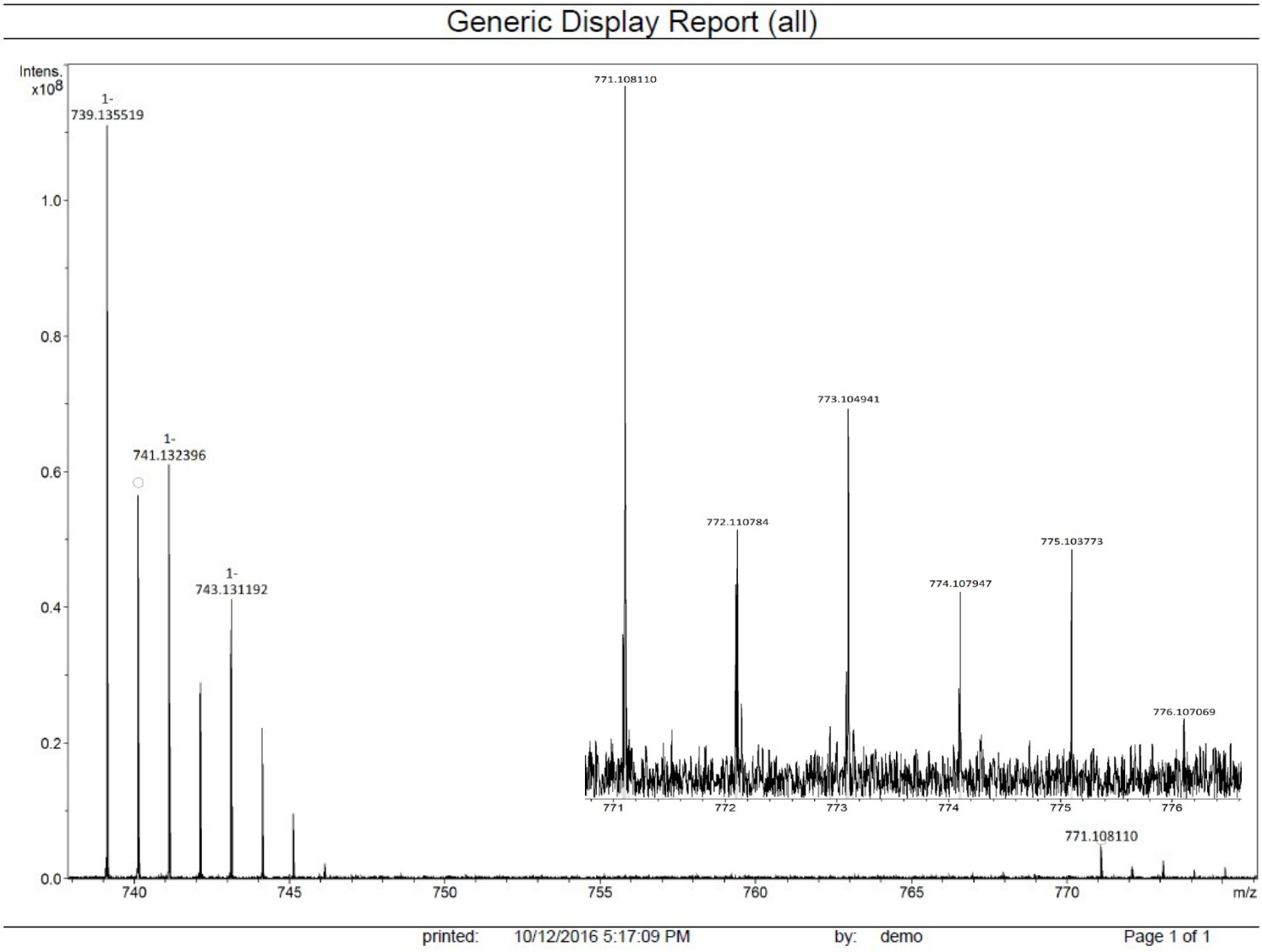

Figure S12. HR MALDI-FT-ICR spectrum of the *TMPyPZn-HS* adduct in water solution (ionizing the sample in the negative ion mode) with the enlargement of the zone in the range 771 – 776 m/z.

Reference List

(1) Lakovicz J.R. *Principles of Fluorescence Spectroscopy*; Kluwer Academic/Plenum, New York, Boston, Dordrecht, Moscow: 1996.