

Electronic Supplementary Information to

Selective fluorometric detection of pyrophosphate by interaction with alizarin red S - dimethyltin(IV) complex

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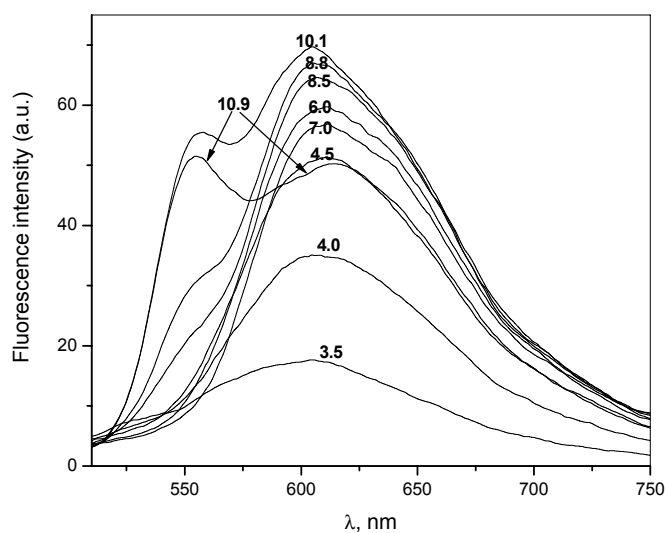


Figure S1. Fluorescence spectra of 30 μM ARS in the presence of 40 μM Me_2SnCl_2 at different pH.

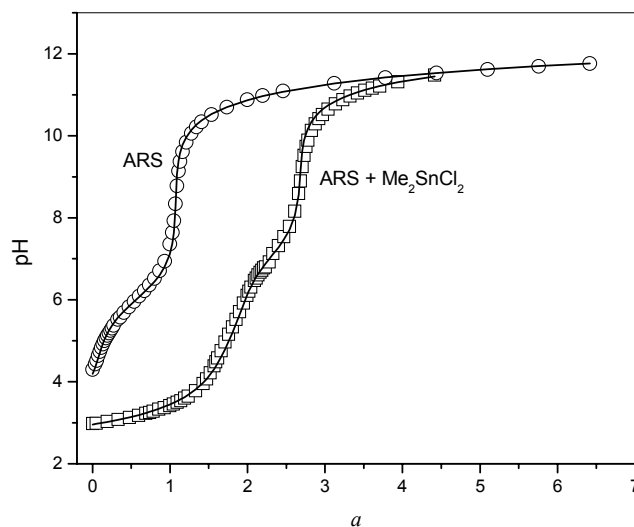


Figure S2. Potentiometric titrations of 0.72 mM ARS (circles) and 0.72 mM ARS plus 1.0 mM Me₂SnCl₂ (squares) by NaOH in water with 5 mM NaCl as background electrolyte; a is the number of added equivalents of NaOH. Solid lines are the fitting curves generated by Hyperquad 2003.

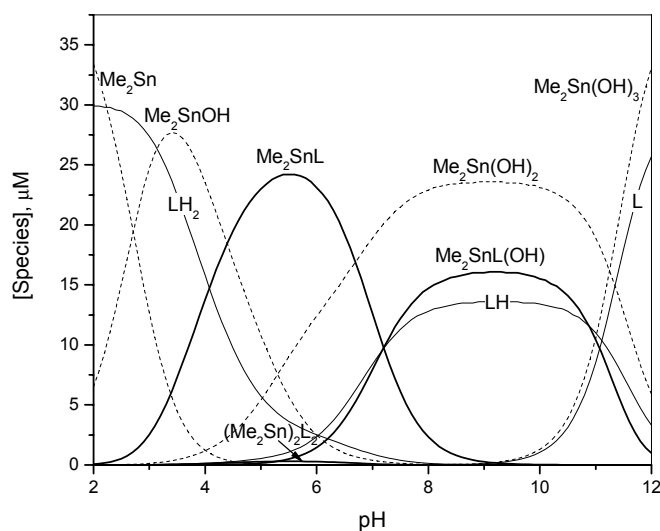


Figure S3. Species distribution diagram for the mixture of 30 μM ARS and 40 μM Me₂SnCl₂.

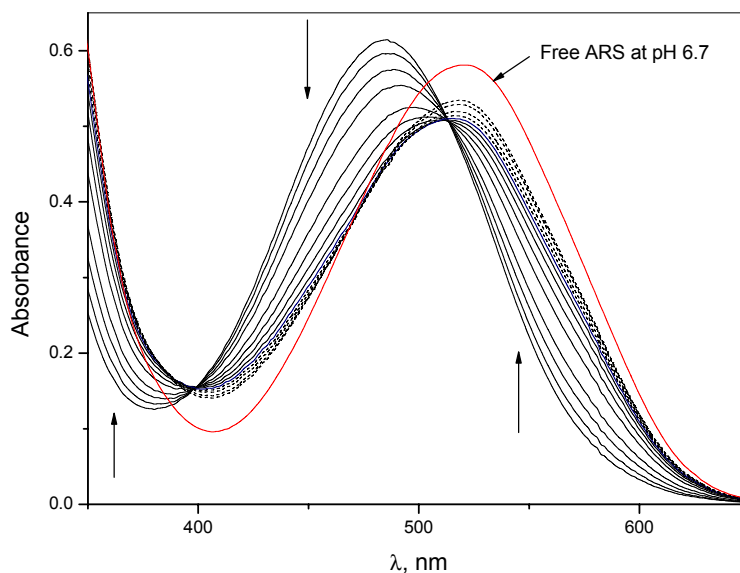


Figure S4. Spectrophotometric titration of the mixture of 70 μM ARS and 100 μM Me_2SnCl_2 in 5 mM phosphate buffer at pH 6.7 by PPI. Solid lines are recorded in the concentration range 0-0.5 mM PPI and dashed lines in the range 0.5-2 mM PPI. Arrows show the directions of spectral changes at increasing concentrations of PPI. The red line is the spectrum of free ARS.

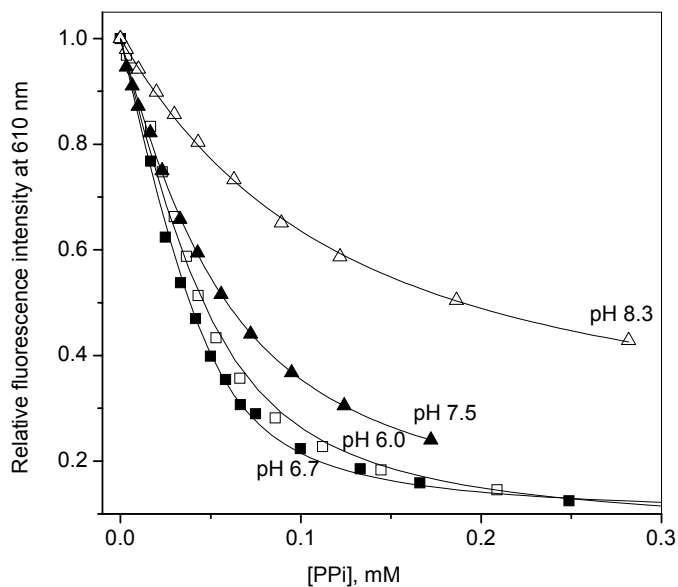


Figure S5. Fluorometric titrations of the mixture of 30 μM ARS and 40 μM Me_2SnCl_2 in 5 mM phosphate buffer by PPI at different pH values.

Table S1. Apparent binding constants of anions to the dimethyltin(IV)-ARS complex obtained by fluorometric titrations in 5 mM phosphate buffer solution at 25°C.

Anion	pH	K_{app}, M⁻¹
HPO ₄ ²⁻	6.7	130±10
MeOPO ₃ ²⁻	6.7	180±50
Glucose-6-P	6.7	330±70
AMP	6.7	330±50
ADP	6.7	590±40
ATP	6.7	920±80
PPi	6.7	(5.9±0.3)×10 ⁴
PPi ^{a)}	6.7	(6.4±0.8)×10 ⁴
PPi	6.0	(3.3±0.3)×10 ⁴
PPi	7.5	(3.0±0.1)×10 ⁴
PPi	8.3	(9.3±0.4)×10 ³

^{a)} in 5 mM MOPS