## Supporting Information (SI)

## Simultaneous spectrophotometric determination of peracetic acid and the coexistent hydrogen peroxide using potassium iodide as the indicator

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Prepared for Analytical Methods

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Table S1 Main indexes of water quality of natural water samples

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Water quality indexes	Underground water samples	Lake water samples	Reservoir water samples				
Dissolved organic carbon (mg L <sup>-1</sup> )	3.67	14.36	5.36				
Alkalinity (mg L <sup>-1</sup> , calculated as CaCO <sub>3</sub> )	271.93	48.76	157.93				
Hardness (mg L <sup>-1</sup> , calculated as CaCO <sub>3</sub> )	230.58	125.56	49.85				
pH	7.12	6.89	7.52				

Samplas	Absorbance of blank samples at 350 nm (n=5)					σ	k	LOD= $3\sigma/k$	
Samples	1	2	3	4	5	(cm <sup>-1</sup> )	$(M^{-1} cm^{-1})$	(µM)	
Total peroxides	0.000	0.001	0.003	0.004	0.000	1.625×10 <sup>-3</sup>	2.596×10 <sup>4</sup>	0.19	
PAA	0.002	0.004	0.003	0.000	0.000	1.600×10 <sup>-3</sup>	2.616×10 <sup>4</sup>	0.18	

Table S2 Limits of detection of the proposed spectrophotometric method using KI as the indicator



**Fig. S1.** Effect of reaction time on absorption value of generated  $I_3^-$  at 350 nm when excess KI reacted with different concentrations of  $H_2O_2$  with the presence of Mo(VI) (a) and without the presence of Mo(VI) (b). Reaction conditions:  $[Mo(VI]_0 = 700 \ \mu\text{M}$  for (a) and 0  $\mu\text{M}$  for (b),  $[H_2O_2]_0 = 0.37.93 \ \mu\text{M}$ ,  $[KI]_0 = 48 \ \text{mM}$ , pH = 4.5, reaction time (t) = 30 s, and room temperature (22 ±3 °C). Error bars represent standard deviations (n=2).



**Fig. S2.** Linear relationship between absorption value at 350 nm and the concentration of total peroxides with the presence of Mo(VI) (a) and the concentration of PAA without the presence of Mo(VI) (b). Reaction conditions:  $[PAA+H_2O_2]_0 = 0.70 \ \mu\text{M}$ ,  $[Mo(VI)]_0 = 700 \ \mu\text{M}$  for (a) and 0  $\mu\text{M}$  for (b),  $[KI]_0 = 48 \ \text{mM}$ , pH = 4.5,  $t = 30 \ \text{s}$ , and room temperature (22 ±3 °C).