

Supplementary material for:

Investigation on a sensitive chemiluminescence system based on Ni(IV) complex to determine two β_2 -agonist drugs in urine and swine feed and their mechanism

Xiao Dong^{1,2}, Yajie Diao^{1,2}, Xinghua Li¹, Tingting Dai¹, Hongmei Shi^{1,*} and Shan Li^{1,*}

¹ *Department of Nursing, Xingtai Medical College, Xingtai 054000, China;*

² *School of Public Health, Hebei Medical University, Hebei Key Laboratory of Environment and Human Health, Shijiazhuang 050017, China;*

Four supporting figures (Figures S1-S5) are included in this supplementary material.

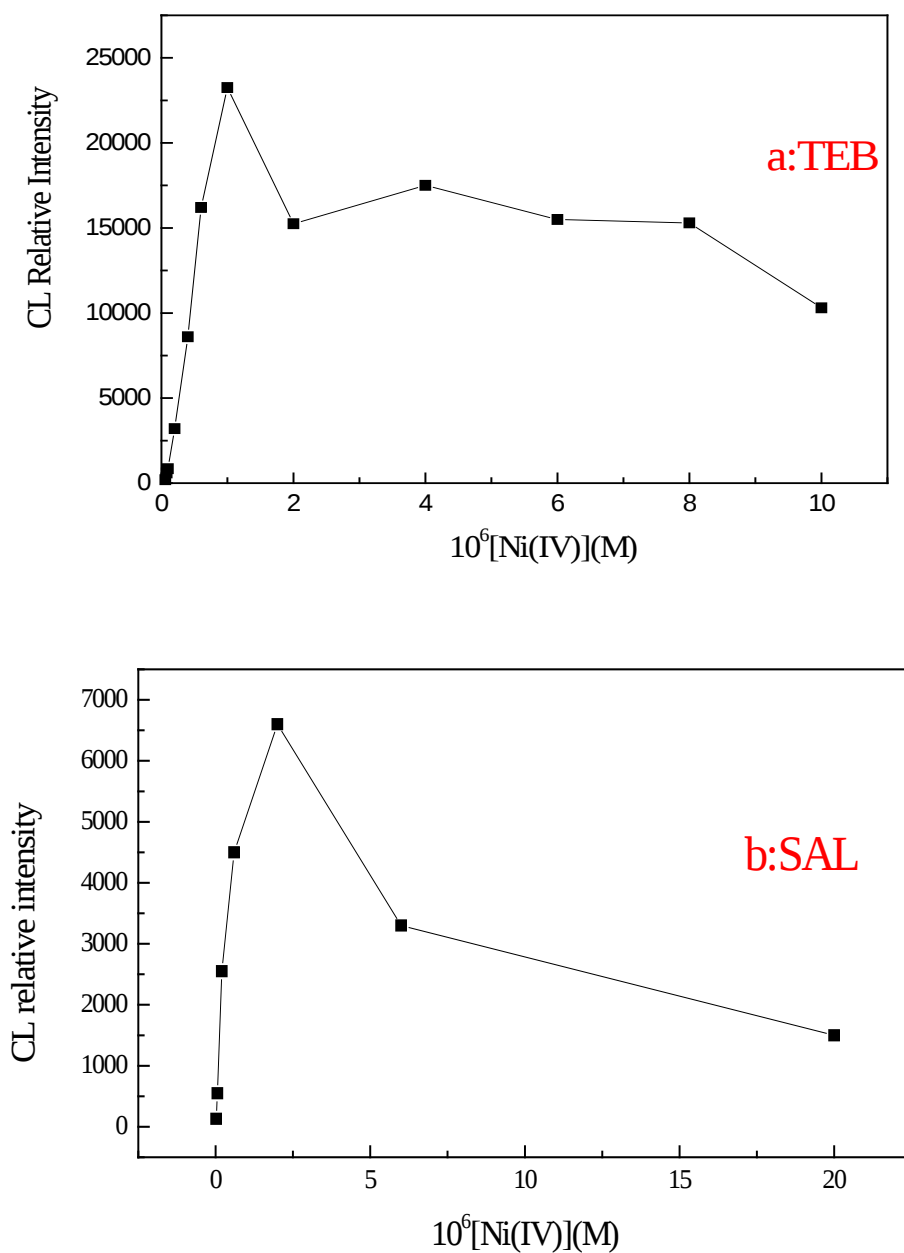


Figure S1 Effect of Ni(IV) concentrations on CL intensity.

Conditions: (a) $[\text{Ni(IV)}]=6.0 \times 10^{-8}$ - $1.0 \times 10^{-5} \text{ M}$ (in 0.001 M OH^-); $[\text{TEB}]=1.0 \times 10^{-7} \text{ M}$; $[\text{Lu}]=4.0 \times 10^{-7} \text{ M}$ (in 0.002 M OH^-). (b) $[\text{Ni(IV)}]=2.0 \times 10^{-8}$ - $2.0 \times 10^{-5} \text{ M}$ (in 0.001 M OH^-); $[\text{SAL}]=1.0 \times 10^{-7} \text{ M}$; $[\text{Lu}]=2.0 \times 10^{-7} \text{ M}$ (in 0.002 M OH^-)

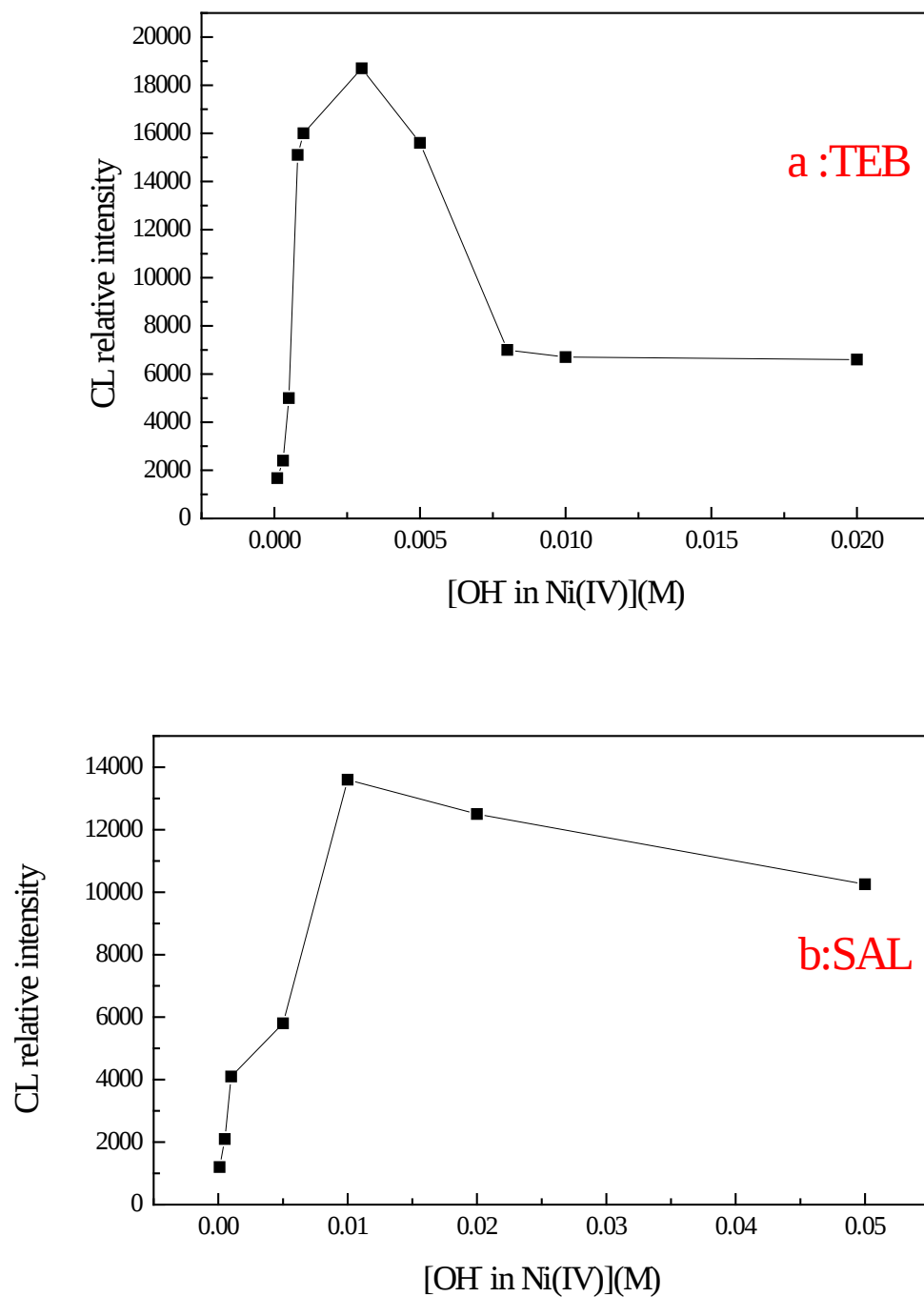


Figure S2 Effect of $[\text{OH}^-]$ in Ni(IV) solutions on CL intensity.

Conditons: (a) $[\text{Ni(IV)}]=6.0 \times 10^{-7} \text{M}$ (in 0.0001-0.02M OH^-); $[\text{TEB}]=1.0 \times 10^{-7} \text{M}$; $[\text{Lu}]=4.0 \times 10^{-7} \text{M}$ (in 0.002M OH^-). (b) $[\text{Ni(IV)}]=6.0 \times 10^{-7} \text{M}$ (in 0.0001-0.05M OH^-); $[\text{SAL}]=1.0 \times 10^{-7} \text{M}$; $[\text{Lu}]=2.0 \times 10^{-7} \text{M}$ (in 0.002M OH^-)

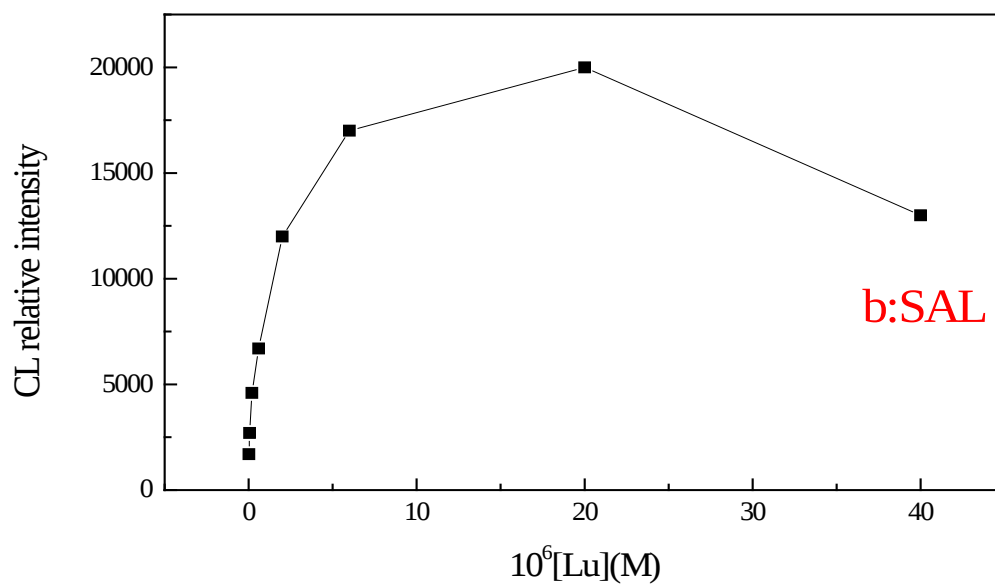
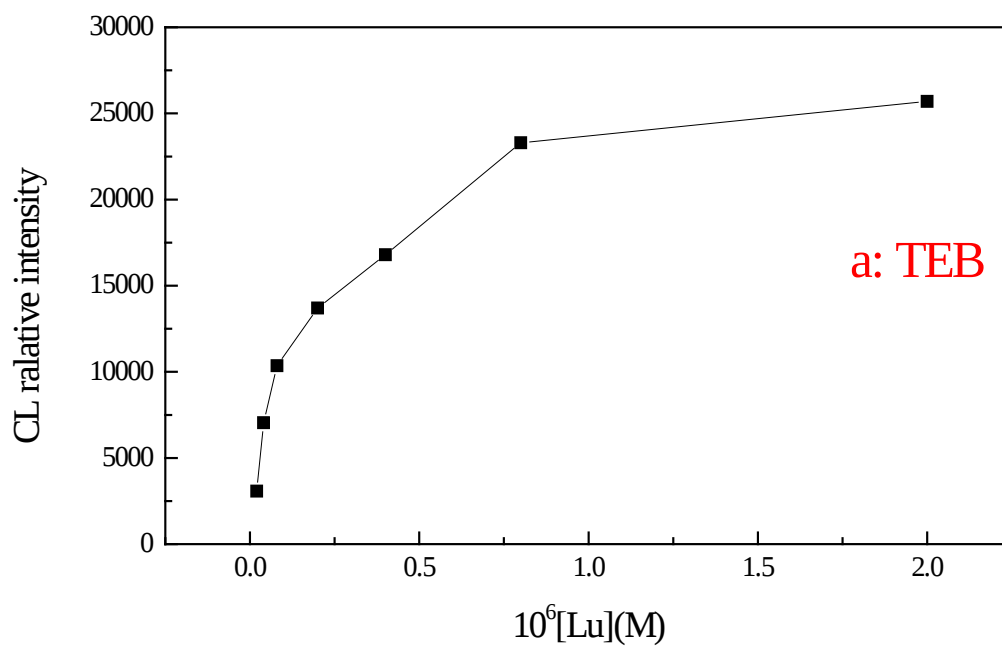


Figure S3 Effect of luminol concentrations on CL intensity.

Conditons: (a) $[\text{Lu}] = 2.0 \times 10^{-8} - 2.0 \times 10^{-6} \text{ M}$ (in 0.002 M OH^-); $[\text{Ni(IV)}] = 6.0 \times 10^{-7} \text{ M}$ (in 0.003 M OH^-); $[\text{TEB}] = 1.0 \times 10^{-7} \text{ M}$. (b) $[\text{Lu}] = 2.0 \times 10^{-8} - 4.0 \times 10^{-5} \text{ M}$ (in 0.002 M OH^-); $[\text{Ni(IV)}] = 6.0 \times 10^{-7} \text{ M}$ (in 0.001 M OH^-); $[\text{SAL}] = 1.0 \times 10^{-7} \text{ M}$.

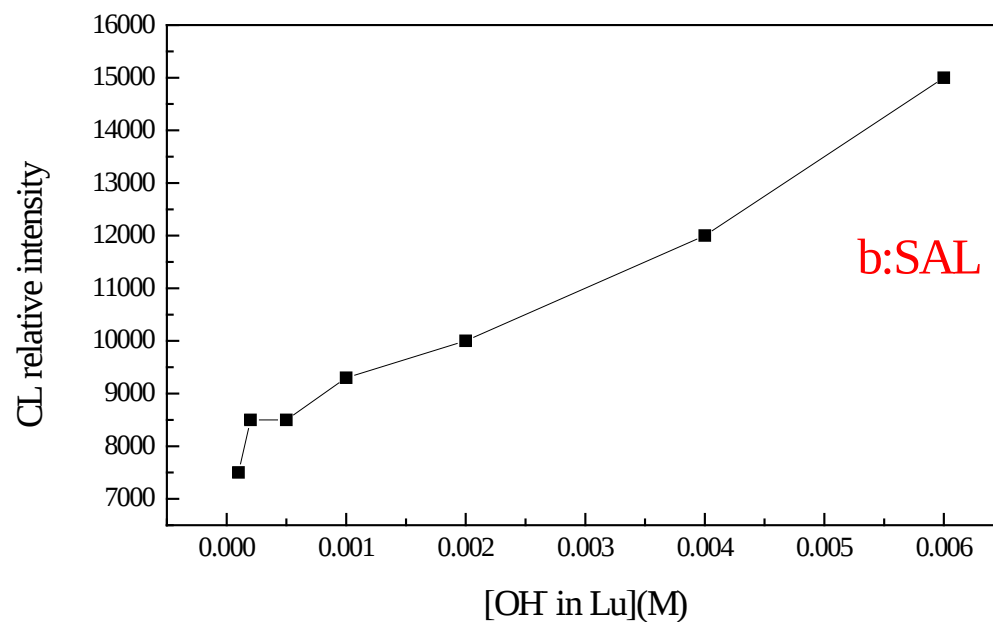
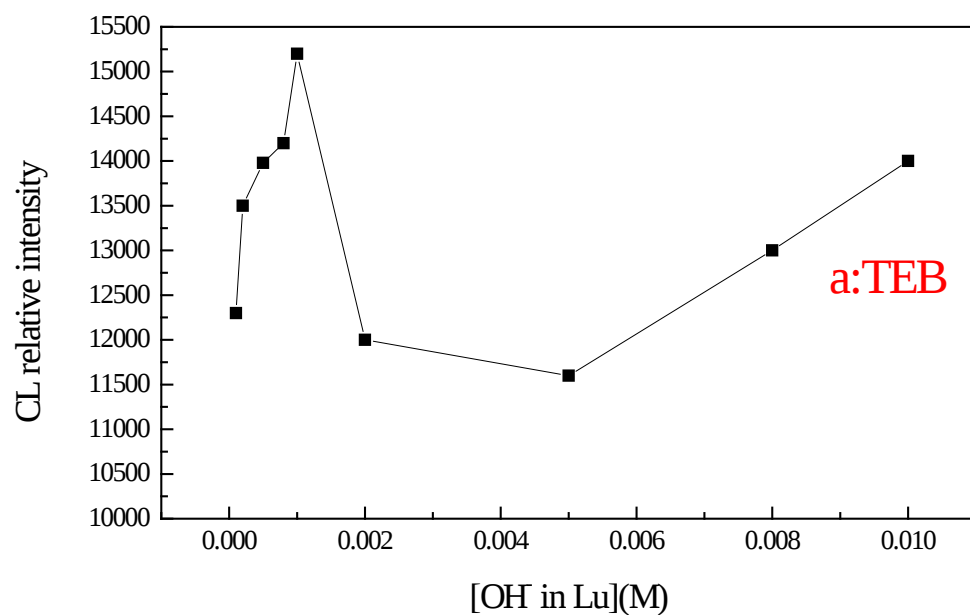


Figure S4 Effect of $[\text{OH}^-]$ in luminol solutions on CL intensity.

Conditions: (a) $[\text{Ni(IV)}]=6.0 \times 10^{-7} \text{M}$ (in 0.003M OH^-); $[\text{Lu}]=2.0 \times 10^{-7} \text{M}$; $[\text{TEB}]=1.0 \times 10^{-7} \text{M}$. (b) $[\text{Ni(IV)}]=6.0 \times 10^{-7} \text{M}$ (in 0.001M OH^-); $[\text{Lu}]=2.0 \times 10^{-6} \text{M}$; $[\text{SAL}]=1.0 \times 10^{-7} \text{M}$.