Two Novel Salen Based Chemosensors for Selective Recognition of Zinc(II) Ion

Longchao Du^{*}, Xiaoju Qin, Shixin Huang

School of Chemistry and Chemical Engineering & the Key Laboratory of Environment-friendly Polymer Materials of Anhui Province, Anhui University, Hefei, PRC

^{*}E-mail: dulongchao@sina.com

doi: 10.20964/2018.09.71

Received: 16 May 2018 / Accepted: 20 June 2018 / Published: 5 August 2018

Two novel salen based chemosensors were synthesized and identified by FT-IR, ¹H-NMR and Elemental analysis. We evaluated the selectivity and sensitivity of probe L1 and L2 toward zinc ions via UV-vis, Cyclic voltammetry and ¹H-NMR measurement. The finding suggested the selective and sensitive recognition toward zinc ions was more typical than the other metal ions. The Zn²⁺ can be detected well even the concentration of the probes are low to 10 μM. The stoichiometries of the complexes formed between the probes and Zn²⁺ are 1:1, as determined by Job's method. And these probes showed distinctly different CV curves with Zn²⁺. ¹H-NMR research showed that the hydrogens in N=CH- and OH- are evidently up-field shift. These changes are due to the transform of N2O2 coordination plane of Schiff bases.

Keywords: Schiff base; Zinc ion; Chemosensor; Recognition

[FULL TEXT](#)

© 2018 The Authors. Published by ESG (www.electrochemsci.org). This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).