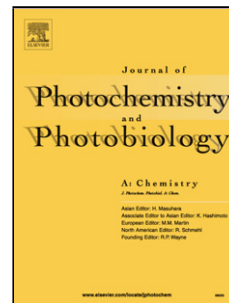


Accepted Manuscript

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PII: S1010-6030(17)31526-5
DOI: <https://doi.org/10.1016/j.jphotochem.2018.01.012>
Reference: JPC 11100

To appear in: *Journal of Photochemistry and Photobiology A: Chemistry*

Received date: 17-10-2017
Revised date: 26-12-2017
Accepted date: 9-1-2018

Please cite this article as: Chiseop Lim, Hansol Seo, Jun-Hyeak Choi, Ki-Soo Kim, Aasif Helal, Hong-Seok Kim, Highly selective fluorescent probe for switch-on Al^{3+} detection and switch-off F^- detection, *Journal of Photochemistry and Photobiology A: Chemistry* <https://doi.org/10.1016/j.jphotochem.2018.01.012>

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Highly selective fluorescent probe for switch-on Al^{3+} detection and switch-off F^- detection

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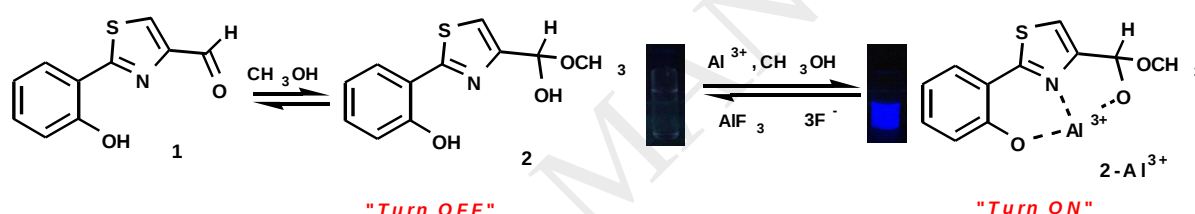
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Graphical abstract



Highlights

- A highly selective Al^{3+} probe (**1**) was synthesized and investigated.
- Al^{3+} was detected via "switch on" complexation by hemiacetal **2** formed from **1** in MeOH.
- *In situ* generated **2-Al³⁺** detected F^- through a "switch off" response.
- The fluorescence mechanism of **1** was explained by combined ESIPT and CHEF effects.
- Sequential detection of Al^{3+} and F^- was achieved.

Abstract

A new 2-(2'-hydroxyphenyl)thiazole-4-carboxaldehyde based fluorescent probe (**1**) was designed and synthesized for sequential detection of Al^{3+} and F^- ions in methanol. Probe **1** selectively detected Al^{3+}

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