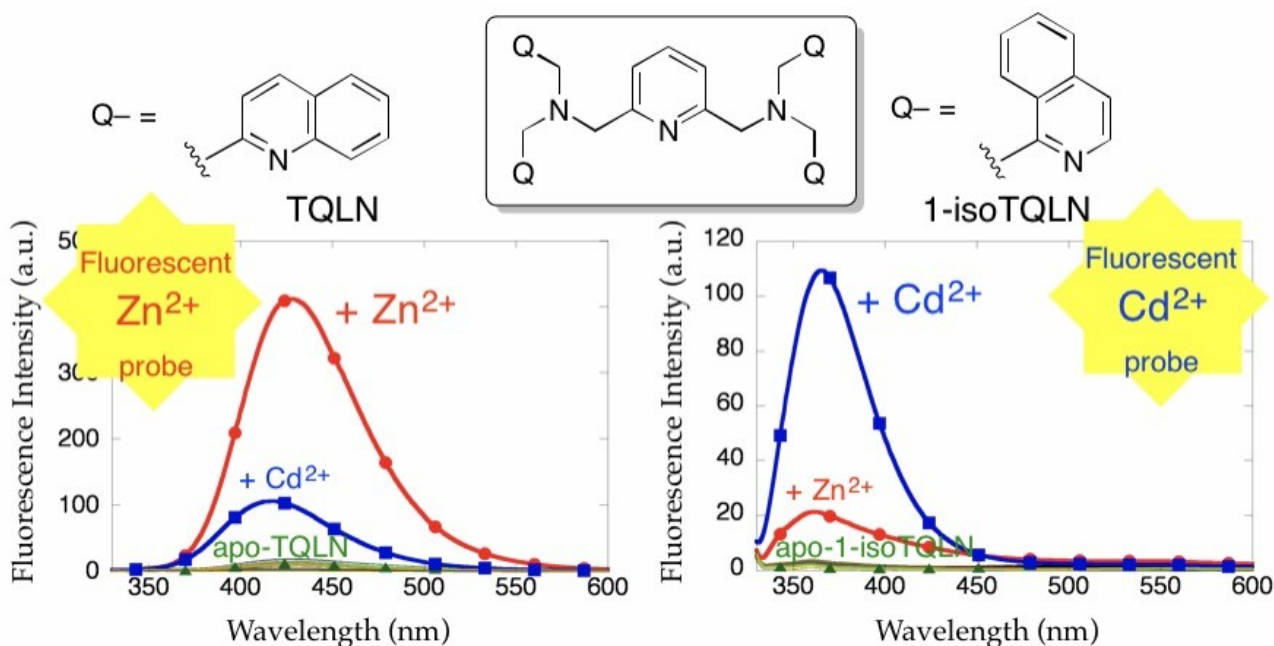


Development of Fluorescent Sensors for Specific Metal Ions

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Specific discrimination of zinc and cadmium ions by **TQLN** and **1-isoTQLN**.

Fluorescent sensor molecules that respond to a specific metal ion have been extensively exploited. Since Cd²⁺ is a pollutant metal ion in the environment, development of Cd²⁺-specific fluorescent probes is of significant importance. Most of such fluorescent Cd²⁺ probes, however, respond to both Cd²⁺ and Zn²⁺ because these metal ions are in the same group. In this context, discrimination of cadmium and zinc *via* a single fluorescent probe attracts significant interest. We have been investigating the target metal switching from Zn²⁺ to Cd²⁺ by partial molecular modification in "quinoline"-based molecules.

Here describes an example of our recent progress, where the replacement of quinoline with isoquinoline affords target metal ion switching from Zn²⁺ to Cd²⁺ in the fluorescent sensor **TQLN/1-isoTQLN** (Figure).

Keywords : Fluorescence, Sensor, Zinc ion, Cadmium ion