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## Exploration the effect of structural adjustment on identifying medium and bio-targeting based on two similar coumarin compounds

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### Graphical abstract

Two novel similar structural coumarin-based fluorescent compounds **L1** and **L2** were designed and prepared. The obtained **L2** through slightly adjusting structure of **L1** could recognize Hg<sup>2+</sup> and Cu<sup>2+</sup> in H<sub>2</sub>O by the different fluorescent responses, which could monitor the corresponding metal ions in mitochondria. Bio-imaging experiments revealed that **L1** and **L2** could qualitatively monitor Hg<sup>2+</sup> or Cu<sup>2+</sup> in Hela cells and mouse kidney tissues.

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