# Article information:

Recognition of d-Glucose in Water with Excellent Sensitivity, Selectivity, and Chiral Selectivity Using γ-Cyclodextrin and Fluorescent Boronic Acid Inclusion Complexes Having a Pseudo-diboronic Acid Moiety | ACS Sensors
<https://pubs.acs.org/doi/10.1021/acssensors.2c02087>

# Article summary:

1. This article presents a method for the recognition of d-glucose in water with excellent sensitivity, selectivity, and chiral selectivity using γ-cyclodextrin and fluorescent boronic acid inclusion complexes having a pseudo-diboronic acid moiety.

2. The article includes experimental details, synthetic procedures, NMR spectra, single crystal X-ray structural analysis, fluorescence spectra at various γ-CyD concentrations, determination of the inclusion constants, pH dependence of the UV-vis absorption spectra, determination of the acid dissociation constants, fluorescence intensities under various pH conditions, fluorescence spectra at various saccharide concentrations, determination of conditional equilibrium constants, structures of saccharides, selectivity experiments, competitive experiments, limits of detection and quantification tests and more.

3. The article also includes fluorescence spectra in the presence of D-and L-glucose to demonstrate chiral selectivity as well as fluorescence spectra in the presence of horse serum to demonstrate its potential application in biological samples.

# Article rating:

May be slightly imbalanced: The article presents the information in a generally reliable way, but there are minor points of consideration that could be explored further or claims that are not fully backed by appropriate evidence. Some perspectives may also be omitted, and you are encouraged to use the research topics section to explore the topic further.

# Article analysis:

This article is generally reliable and trustworthy due to its detailed description of experimental methods and results. The authors provide evidence for their claims through data from experiments such as NMR spectra and single crystal X-ray structural analysis. Furthermore, they provide evidence for their claims by performing competitive experiments to demonstrate selectivity as well as limits of detection and quantification tests to demonstrate sensitivity. Additionally, they present both sides equally by including fluorescence spectra in the presence of D-and L-glucose to demonstrate chiral selectivity as well as fluorescence spectra in the presence of horse serum to demonstrate its potential application in biological samples.

The only potential bias that could be identified is that there is no discussion on possible risks associated with this method or any other alternative methods that could be used for recognition of d-glucose in water with similar sensitivity and selectivity. Additionally there is no mention or exploration into counterarguments or alternative explanations for their findings which could have been beneficial for further understanding their results.

# Topics for further research:

* Chiral selectivity in glucose recognition
* Biological sample recognition of d-glucose
* Risks associated with glucose recognition methods
* Alternative methods for glucose recognition
* Counterarguments for glucose recognition
* Fluorescence spectra for glucose recognition

# Report location:

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