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Title: Graphitic Carbon Nitride Nanosheets-Based Turn-On Fluorescent Biosensor for Highly Sensitive, Label-Free Detection of Adenylate Kinase Activity

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### ACCEPTED MANUSCRIPT

## Graphitic Carbon Nitride Nanosheets-Based Turn-On Fluorescent Biosensor for Highly Sensitive, Label-Free Detection of Adenylate Kinase Activity

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#### Highlights

- The exploration of CNNS-based application in biosensing field was expanded. It is realized for the first time that the activity of enzyme ADK is assessed by fluorescent CNNS probe.
- A turn-on biosensor was established by using CNNS to detect ADK. The limit of detection towards ADK is down to 0.06 U/L, which is comparable or better than most of the previously reported methods.
- The design of CNNS-based strategy affords a simple, label-free and low-cost

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