### Statements & Declarations

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**Competing Interests**

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to inflfluence the work reported in this paper.

**Author Contributions**

**Yubing Yang**: Methodology, Investigation. **Yuxiang Yang**: Conceptualization, Supervision, Writing - original draft, Project administration, Funding acquisition, Writing - review & editing, Data curation. **Chaoying NI**: Formal analysis, Visualization, Validation, Resources, Software.

### Data Availability

Supplementary data to this article can in the following article.

[1]T.M. Tian, Preparation of silica sol and nano silica and immobilization of horseradish peroxidase [D]; East China University of Science and Technology. 2014