

Tentative Outline

Special Thematic Issue for the journal: *Current Protein & Peptide Science (CPPS)*

Title of the Thematic Issue: Natural as well as artificial antibody scaffolds and their applications in biomedicine.

Guest Editor: *Tengchuan Jin*

• **Scope of the Thematic Issue:**

Humoral immunity mediated by antibodies play critical roles in adaptive immunity against pathogens. During evolution, different humoral immune system have been evolved. In addition to the IgG type antibody from majority of advanced organisms, camelids and cartilage have evolved a variant heavy-chain only antibody. Furthermore, there are some naturally occurring antibody-like protein scaffolds that can produce different protein product under different conditions, i.e. fibronectin, anticalin. Lastly, protein engineering and artificial evolution can create novel protein scaffolds that mimic the functionality of antibodies. All of these different variants of antibody have great potential in pharmaceutical industries and biomedical sciences and applications. In this issue, theoretical and practical aspects of all of these "antibodies" are discussed.

Keywords: Ig superfamily, antibody, artificial antibody scaffolds, nanobody, protein drug, antibody design, protein evolution

Sub-topics:

- Naturally occurring antibodies scaffolds
- Antibody engineering
- Antibody design and mimetics

Tentative titles of the articles:

1. Classical Ig-G type antibodies:
2. IgG engineering
3. Nanobody from camels:
4. IgNAR from shark
5. VLR
6. Antibody humanization
7. ScFv
8. Bi-specific antibodies
9. Multivalent antibody design
10. Evolution of antibodies
11. Anti-calin
12. DARPin
13. Fibronectin artificial antibody (adnectins)
14. Affibody
15. Knottin
16. Sso7d
17. Kringle domain
18. Gp2

Schedule:

- ✧ Thematic issue submission deadline: Sep 2021

Contacts:

Guest Editor Name: Tengchuan Jin

Affiliation: University of Science and Technology of China

Email: jint@ustc.edu.cn