Dengguo Wei (位灯国)

Personal details

Date of birth: 26th Oct., 1981 Gender: Male
Nationality: People's Republic of China Marital Status: Married
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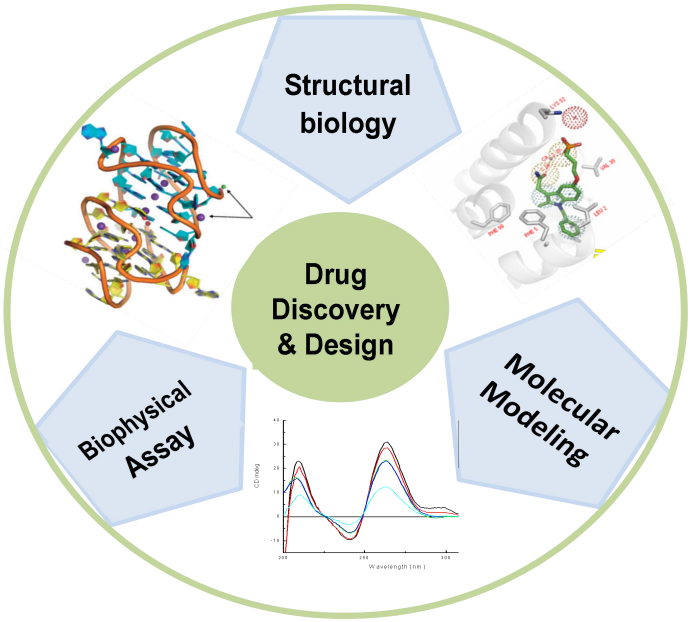
Research interests

I am dedicated to study biomolecular structures and their interactions with chemical compounds through structural biology, bio-physical assay and computational modelling.



Employment

2015.6- Huazhong Agriculture University, Professor

2013.6 – 2015.5 The Chemical Biological Centre, Umeå University,
Post doctoral fellow,
Supervisor: Professor Elisabeth Sauer-Eriksson

2009.10:~2012.10 School of Pharmacy, University College London (UCL),
Cancer Research UK China fellowship,
Supervisor: Professor Stephen Neidle

Education

2005.9:~2009.7 Ph.D. in Bio-Physical Chemistry, Peking University, Beijing, China
Dissertation title: Multi-target inhibitor design and improvement virtual screening success ratio by molecular docking
Supervisor: Professor Luhua Lai

2002.9~2005.7 M.S. in Bio-organic Chemistry Central China Normal University, China
Dissertation title: Quantitative structure–activity Relationship (QSAR) and its Application in Molecular Design of Novel Pesticides
Supervisor: Professor Guangfu Yang

1998.9 ~ 2002.7 B.S. in Chemistry, Central China Normal University, China

Publications

1. BMPQ-1 binds selectively to (3+1) hybrid topologies in human telomeric G-quadruplex multimers. Chao Gao, Zhu Liu， Haitao Hou, Jieqin Ding, Xin Chen, Congbao Xie, Zibing Song, Zhe Hu, Mingqian Feng, Hany I Mohamed, Shengzhen Xu *, Gary N Parkinson, Shozeb Haider *, **Dengguo Wei** *. ***Nucleic Acids Res.*** 2020 48(20):11259-11269.

2. Native de novo structural determinations of non-canonical nucleic acid motifs by X-ray crystallography at long wavelengths Yashu Zhang, Kamel El-Omari, Ramona Duman, Sisi Liu, Shozeb M. Haider, Armin Wagner, Gary N. Parkinson *, **Dengguo Wei** * ***Nucleic Acids Res.***; 2020;48(17):9886-9898

3. G2-quadruplex in the 3'UTR of IE180 Regulates Pseudorabies Virus Replication by Enhancing Gene Expression. Ya-Shu Zhang, Si-Si Liu, Hui Jiang , Hui Deng, Chen Dong, Wei Shen, Hai-Feng Chen, Chao Gao, Shao-Bo Xiao, Zheng-Fei Liu*, **Dengguo Wei***; ***RNA Biol.*** 2020;17(6):816-827.

4. Specific recognition of telomeric multimeric G-quadruplexes by a simple-structure quinoline derivative. JingfangZhao，ZiyanYang，QianqianZhai，**DengguoWei** - ***Analytica Chimica Acta,*** 2020; 1132: 93-100

5. Selective recognition of c-MYC Pu22 G-quadruplex by a fluorescent probe. Qianqian Zhai, Chao Gao, Jieqin Ding, Yashu Zhang, Barira Islam, Wenxian Lan, Haitao Hou, Hua Deng, Jun Li, Zhe Hu, Hany I Mohamed, Shengzhen Xu, Chunyang Cao, Shozeb M Haider, and **Dengguo Wei***. ***Nucleic Acids Res.*** 2019;47(5):2190-2204.

6. Mechanism of the temperature-responsive material regulating porous morphology on epoxy phenolic novolac resin microcapsule surface. Xianpeng Zhang, Luxia Zhang, Daxia Zhang, Sisi Liu*, **Dengguo Wei***, Feng Liu* *Colloids and Surfaces A: Physicochemical and Engineering Aspects* 2020 10.1016/j.colsurfa.2020.124581

7. Oligo(ethylene glycol)-Functionalized Ratiometric Fluorescent Probe for the Detection of Hydrazine in Vitro and in Vivo. Jun Li , Yuanchao Cui， Chenxi Bi, Shaoqiong Feng, Fengzhen Yu, En Yuan, Shengzhen Xu, Zhe Hu, Qi Sun*, **Dengguo Wei***, Juyoung Yoon* ***Anal. Chem.,*** 2019，91 (11), 7360-7365

8. Intensive Distribution of G-Quaduplexes in the Pseudorabies Virus Genome and Their Sensitivity to Cations and G-Quadruplex Ligands. Hui Deng, Bowen Gong, Zhiquan Yang, Zhen Li, Huan Zhou, Yashu Zhang, Xiaohui Niu, Sisi Liu*, and **Dengguo Wei*** ***Molecules.*** 2019; 24(4). pii: E774. doi: 10.3390/molecules24040774.

9. Flexibility and structural conservation in a c-KIT G-quadruplex. **Dengguo Wei**, Jarmila Husby and Stephen Neidle. ***Nucleic Acids Res.*** 2015, 43 (1):629-44

10. Crystal structure of a promoter sequence in the B-raf gene reveals an intertwined dimer quadruplex. **Dengguo Wei**, Alan K. Todd, Mire Zloh, Mekala Gunaratnam, Gary N. Parkinson, and Stephen Neidle ***J. Am. Chem. Soc.***, 2013, 135 (51):19319–29

11. Small-molecule binding to the DNA minor groove is mediated by a conserved water cluster. **Dengguo Wei**, W David Wilson and Stephen Neidle, ***J. Am. Chem. Soc.*** 2013, 135(4):1369-77

12. Crystal structure of a c-kit promoter quadruplex reveals the structural role of metal ions and water molecules in maintaining loop. **Dengguo Wei**, Gary N. Parkinson, Anthony P. Reszka and Stephen Neidle ***Nucleic Acids Res.*** 2012, 40(10):4691-700

13. Binding Energy Landscape Analysis Helps to Discriminate True Hits from High-Scoring Decoys in Virtual Screening. **Dengguo Wei**, Hao Zheng, Naifang Su, Minghua Deng and Luhua Lai ***J. Chem. Inf. Model.***, 2010, *50* (10), 1855–64

14. Discovery of Multitarget Inhibitors by Combining Molecular Docking with Common Pharmacophore Matching. **Dengguo Wei**, Xiaolu Jiang, Lu Zhou, Jing Chen, Zheng Chen, Chong He, Kun Yang,Ying Liu, Jianfeng Pei and Luhua Lai, ***J. Med. Chem.***, 2008, *51* (24), 7882–8

15. Binding Model Construction of Antifungal 2-Aryl-4-chromanones Using CoMFA, CoMSIA, and QSAR Analyses. **Dengguo Wei**, Guangfu Yang, Jian Wan and Changguo Zhan, J. ***Agric. Food Chem***., 2005, 53 (5), 1604–11

16. Synthesis, herbicidal activities, and 3D-QSAR of 2-cyanoacrylates containing aromatic methylamine moieties. Yu-Xiu Liu, **Dengguo Wei**, Ye-Rong Zhu, Shao-Hua Liu, Yong-Lin Zhang, Qi-Qi Zhao, Bao-Li Cai, Yong-Hong Li, Hai-Bin Song, Ying Liu, Yong Wang, Run-Qiu Huang and Qing-Min Wang ***J. Agric. Food Chem.*** 2008, 56, 204–12 (Contributed equally to the first author）

17. Modulating the substrate specificity of LTA4H aminopeptidase by using chemical compounds and small-molecule-guided mutagenesis. Xiaolu Jiang, Lu Zhou, Yiran Wu, **Dengguo Wei**, Chunyi Sun, Jia Jia, Ying Liu and Luhua Lai ***Chembiochem.*** 2010 May 17; 11(8):1120-8

18. Controlling arachidonic acid metabolic network: from single- to multi-target inhibitors of key enzymes. Ying Liu, Zheng Chen, Er-chang Shang, Kun Yang, **Dengguo Wei**, Lu Zhou, Xiaolu Jiang, Chong He, Luhua Lai. ***Acta Pharmaceutica Sinica*** 2009, 44 (3): 231–41

19. Resurveying the Tris buffer solution: the specific interaction between tris (hydroxymethyl) aminomethane and lysozyme. Li Quan, **Dengguo Wei**, Xiaolu Jiang, Yang Liu Zhiyu Li, Na Li, Kean Li, Feng Liu and Luhua Lai. ***Anal Biochem***. 2008; 378(2):144-50.

20. Activation and Inhibition of Leukotriene A4 Hydrolase Aminopeptidase Activity by Diphenyl Ether and Derivatives, Xiaolu Jiang, Lu Zhou, **Dengguo Wei**, Hu Meng, Ying Liu and Luhua Lai, ***Bioorg. med. lett.*** 2008; 18(24):6549-52.

Honors and Awards

2009 The prize for the systematic biology in Center for Theoretical Biology, Peking

University

2008 "Best Computational Part Design for conference poster competition" in **The Fourth International Meeting on Synthetic Biology** (SB4.0) (Hong Kong)

2005 Excellent graduate in Central China Normal University

The crystal structures submitted to PDB

PDB code	Title of PDB
3QXR	Crystal structure of the brominated CKIT-1 proto-oncogene promoter quadruplex DNA
4WO2	Crystal structure of Human CKIT-1 proto-oncogene promoter quadruplex DNA
4WO3	The second C-kit1 DNA quadruplex crystal structure
3U0U	Crystal structure of the DB1883-D(CGCGAATTCGCG)2 complex at 1.24 Å
3U2N	Crystal structure of DNA(CGCGAATTCGCG)2 at 1.25 angstroms
3U08	Crystal structure of DB1963-D(CGCGAATTCGCG)2 complex at 1.25 Å
3U05	Crystal structure of DB1804-D(CGCGAATTCGCG)2 complex
4H29	B-raf dimer DNA quadruplex

Referee

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