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Research Interests:

Health and diseases related chemical biology and structure biology mainly by NMR

- (1) Research on the Mechanism of Specificity of Protein and Nucleic Acid, Protein and Protein Associated with Cancer or HIV Virus Infection
- (2) Design and Screening of Drug Molecules for Targeting Nucleic Acids or Proteins Associated with Cancer or HIV Virus Infection
- (3) Novel method development on protein expression and structure determination based on Nuclear Magnetic Resonance Spectroscopy

Educational and professional experiences

- (1) 2006–present: Professor, State Key Laboratory of Bioorganic Chemistry, Shanghai Institute of Organic CAS
- (2) 2005-2006: Salk Institute for Biological Studies, Sandiago, Washington D.C., USA 2001-2005: Johns Hopkins Medical School, Baltimore, Maryland, USA
- (3) 1998-2001: Ph.D., Shanghai Institute of Organic Chemistry, CAS

Publication list

- (1) FangJ, Cheng JD, WangJL, Cao C*, et al. Hemi-methylated DNA opens a closed conformation of UHRF1 to facilitate its histone recognition, Nature Communications, 2016, 7, art. No.11197.
- (2) Lan WX, Hu ZP, Shen J, Cao C*, et al. Structural investigation into physiological DNA phosphorothioate modification, Scientific Reports, 2016, 6, art. No.25737.
- (3) Shen J, YangZZ, Wang JL, Cao C*, et al. NMR studies on the interactions between yeast Vta1 and Did2 during the multivesicular bodies sorting pathway, Scientific Reports, 2016, 6, art. No.38710.
- (4) Lu XX, Zhang TL, Xu Z, Cao C*, et al. Crystal structure of DNA cytidinedeaminease ABOBEC3G catalytic deamination domain suggests a binding mode of full-length enzyme to single-stranded DNA, Journal of Biological Chemistry, 2015, 290(7):4010-4021.
- (5) Liu SS, Guo H, Zhang TL, Cao C*, et al. Structure-based Mechanistic Insights into Terminal Amide Synthase in Nosiheptide-Represented Thiopeptides Biosynthesis, Scientific Reports, 2015, 5, art. No.12744.

- (6) Zhang Y, Yang HR, Guo X, Cao C*, et al. The PHD1 finger of KDM5B recognizes unmodified H3K4 during the demethylation of histone H3K4me_{2/3} by KDM5B, *Protein and Cell*, 2014, 5(11):837-850.
- (7) Lan WX, Wang ZH; Yang ZZ, Cao C*, et al. Structural basis for cytochrome c Y67H mutant to function as a peroxidase, *PLoS ONE*, 2014, 9(9), art. No.E107305.
- (8) Liu SS, Zhang W, Gao ZQ, Cao C*, et al. NMR structure of the N-terminal-most HRDC1 domain of RecQ helicase from *Deinococcus radiodurans*, *FEBS Letters*, 2013, 587(16):2635-2642.
- (9) Hu W, Wang CW, Liang JD, Cao C*, et al. Structural insights into DndE from *Escherichia coli* B7A involved in DNA phosphorothioation modification, *Cell Research*, 2012, 22(7):1203-1206.
- (10) Zhu SY, Peigneur S, Gao B, Cao C*, et al. Evolutionary diversification of Mesobuthus α -scorpion toxins affecting sodium channels, *Molecular and Cellular Proteomics*, 2012, 11(1).
- (11) Yang ZZ, Vild C, Ju JY, Cao C*, et al. Structural basis of molecular recognition between ESCRT-III-like protein Vps60 and AAA-ATPase regulator Vta1 in the multivesicular body pathway, *Journal of Biological Chemistry*, 2012, 287(52):43899-43908.
- (12) Wang CK, Shen J, Yang ZZ, Cao C*, et al. Structural basis of readout of unmodified H3R2 by UHRF1 PHD, *Cell Res*, 2011, 21(9):1379-82.
- (13) Tong XT, Lan WX, Zhang X, Cao C*, et al. Solution structure of all parallel G-quadruplex formed by the oncogene RET promoter sequence, *Nucleic Acid Res*, 2011, 39(15):6753-63.