BIOGRAPHICAL SKETCH

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NAME: **Yang Mei**

eRA COMMONS USER NAME (credential, e.g., agency login): **YANGMEI01**

POSITION TITLE: **Postdoctoral Fellow**

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	Completion Date MM/YYYY	FIELD OF STUDY
Hunan University, Changsha, China	BS	06/2006	Biotechnology
East China University of Science and Technology, Shanghai, China	MS	06/2009	Bioengineering, tissue and cell engineering
North Dakota State University, Fargo, ND	PhD	07/2016	Structural biology, cellular and molecular biology
Tufts University	Postdoc	03/2018	Chemical biology
Wistar Institute	Postdoc		Molecular biology, Structural biology

A. Personal Statement

Dr Yang Mei has the expertise and training background in cellular and molecular biology, biochemistry especially protein structural biology. Structural biology is required in elucidating the function of biological macromolecules and has played important roles in drug development. Epstein-Barr Virus (EBV)-encoded protein EBNA1 controls viral DNA replication, episome maintenance, and host-cell survival during latent infection via binding to EBV OriP. EBNA1 is the only viral protein that is consistently expressed in all EBV associated tumors. Dr Mei is committed use structural biology approaches to determine the EBNA1-OriP complex structure to help develop drugs for EBV-related diseases. Dr Mei has successfully expressed and purify the proteins involved in EBNA1 OriP replication, formed the protein-DNA complex using various biochemical methods, conducted initial Cryo-EM screen and data collection and got preliminary data for the complex.

B. POSITIONS AND HONORS

Editorial Boards

2021 Topic Board Editor Plants

C. Contributions to Science

1. Structural Biology Study of BECN1, an Autophagy Regulator. My first structural biology experience starts during my PhD study. The scientific work focused on structural and functional characterization of BECN1 and its binding partners in autophagy induction. We redefined the domains of BECN1 and determined the structures of different domains and delineated the arrangements of various domains in autophagy pathway. We elucidated how the autophagy is regulated by different domains with their binding partners.

a. Mei Y., Glover K., Su M., and Sinha S. Conformational flexibility of BECN1: Essential to its key role in autophagyand beyond. Protein Science. 2016.

b. Mei Y., Su M., Sanishvili R., Chakravarthy S., Colbert CL. and Sinha S. Identification of BECN1 and ATG14 coiled-coil interface residues important for starvation-induced autophagy. Biochemistry. 2016.

c. **Mei Y**, Ramanathan A, Glover K, Christopher , Stanley C, Sanishvili R, Chakravarthy S, et al. Conformational Flexibility Enables Function of a BECN1 Region Essential for Starvation-Mediated Autophagy. Biochemistry. 2016.
d. Glover K., **Mei Y.** and Sinha S. Identifying intrinsically disordered protein regions likely to undergo binding-induced helical transitions. BBA. 2016.
e. **Mei, Y**., Su, M., Soni, G., Salem, S., Colbert, C.L. and Sinha, S. Intrinsically disordered regions in autophagy proteins. Proteins: Struct., Func. Bioinform. 2014,82(4): 565-578
f. Su, M., **Mei, Y**., Sanishvili, R., Levine, B., Colbert, C.L., and Sinha, S. Targeting γ-herpesvirus 68 Bcl-2 mediated down-regulation of autophagy. J Biol Chem. 2014, 289 (12); 8029-8040
g. Su, M., **Mei, Y**. and Sinha, S. (2013) Role of the Crosstalk between Autophagy and Apoptosis in Cancer. J. Oncol. 14. doi0.1155/2013/102735.
h. **Mei Y**, Luo H, Tang Q, Ye Z, Zhou Y, Tan WS. Modulating and modeling aggregation of cell-seeded microcarriers in stirred culture system for microtissue engineering. J Biotechnol. 2010 Nov;150(3):438-46.

2. Developing Cell-penetrated Peptide for Autophagy Regulation. We designed peptide based on structural information to disrupt protein-protein interaction, modified peptide to enable it to penetrate mammalian cells directly, cell-based SAR analysis, characterized the function of peptide in protein interaction and autophagy function using biochemical, biophysical and cellular biology methods, identified the interaction partner using pull-down and mass spectrometry.

a. Cerulli RA, Shehaj L, Brown H, Pace J, **Mei Y**, Kritzer JA. Stapled Peptide Inhibitors of Autophagy Adapter LC3B [published online ahead of print, 2020 May 14]. *Chembiochem*. 2020;10.1002/cbic.202000212. doi:10.1002/cbic.202000212

3. Epigenetic regulation of telomeric chromatin. Telomeres are protective structures at the end of chromosomes that require specialized chromatin and replication for their maintenance. Although telomeric chromatin is thought to be heterochromatic, the telomere and subtelomere are highly dynamic nucleoprotein structures that have a major impact on overall genome stability. We have studied human telomere chromatin and its dynamic regulation by the non-coding telomere-encoded repeat RNA (TERRA) on the function of telomere telomeric chromatin, replication, and innate immune signaling.

a. **Mei Y**, Deng Z, Vladimirova O, Gulve N, Johnson FB, Drosopoulos WC, Schildkraut CL, Lieberman PM. 2021. TERRA G-quadruplex RNA interaction with TRF2 GAR domain is required for telomere integrity. Sci Rep. ;11(1):3509. .PMID: 33568696

4. Structural Biology Study on EBNA1 and Shelterin Complex in EBV Replication Epstein-Barr virus (EBV) is associated with several human cancers. Epstein-Barr nuclear antigen 1 (EBNA1), appearing in all latency phases, is required to bind the DS of EBV OriP for successful replication of the EBV episome. It was also shown that shelterin components TRF1, TRF2, RAP1 are also involved in the OriP replication regulation. The existence of TRF1 and TRF2 binding site at DS element enables the TRF1, TRF2 to recruit EBNA1 to DS and further recruit other factors. We have successfully purified the full-length proteins of EBNA1, TRF1, TRF2 and RAP1 and made complexes including EBNA1-DS, EBNA1-TRF1-half DS, EBNA1-TRF2-RAP-half DS. Initial data collection was performed.

CV Information		
Last Name (Surname)	First Name	Middle Name or NMN (no middle initial)
Mei	**Yang**	

List all science and technology specialties that apply to your experience (e.g., materials sciences, battery technology, geosciences, fuel elements, waste management, etc.):

Protein structural biology

Cell and molecular biology

Biochemistry

Chemical biology

List dates in chronological order as MM/YYY for all work positions and all academic institutions attended (from age 18). Include the city, state/province, and country for each entry. **If there is more than a 4-month date gap between entries, provide a brief explanation why no work or academic institutions were attended.**

09/2002-06/2006 BS North Hunan University, Changsha, China

09/2006-06/2009 MS East China University of Science and Technology, Shanghai, China

07/2009-08/2010 Lab manager Fudan University, Shanghai, China

08/2010-07/2016 PhD North Dakota State University, Fargo ND, US

07/2016-03/2018 Postdoc Fellow Tufts University, Medford MA, US

04/2018-current Posdoc Fellow Wistar Institute, Philadelphia PA, US