# Yun-Ru (Ruby) Chen
# 陳韻如

## Current Position:
## Professor & Deputy Director

**Laboratory for Protein Misfolding and Neurodegenerative Diseases**
Professor & Deputy Director
Division of Chemical Biology
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## Education:

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| 1998-2003 | Ph.D., Department of Molecular and Structural Biochemistry, North Carolina State University, USA (under Prof. A. Clay Clark's Laboratory) |
| 1992-1996 | B.S., Department of Agricultural Chemistry, National Taiwan University, Taiwan |

## Professional Experience:

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|---|---|
| 2023-present | Deputy Director, Genomics Research Center, Academia Sinica, Taiwan |
| 2022-2025 | President, Asia Pacific Protein Association (APPA) |
| 2022-present | Adjunct Professor/Adjunct Research Fellow, Biomedical Translation Research Center, Academia Sinica, Taiwan |
| 2021-present | Professor/Research Fellow, Genomics Research Center, Academia Sinica, Taiwan |
| 2021-present | Adjunct Professor, Dept. of Biochemical Science & Technology, National Taiwan University, Taiwan |
| 2014-2021 | Associate Research Fellow, Genomics Research Center, Academia Sinica, Taiwan |
| 2015-2021 | Adjunct Associate Professor, Dept. of Biochemical Science & Technology, National Taiwan University, Taiwan |
| 2015-2019 | The World Academy of Sciences (TWAS) Young Affiliate |
| 2014-2017 | Council Member of Asia Pacific Protein Association (APPA) |
| 2007-2014 | Assistant Research Fellow, Genomics Research Center, Academia Sinica, Taiwan |
| 2006-2007 | Postdoctoral Fellow, Genomics Research Center, Academia Sinica, Taiwan (Prof. Chi-Huey Wong Laboratory) |
| 2004-2006 | Postdoctoral Fellow, Dept. of Molecular Biology & Biochemistry, University of California, Irvine, USA (Prof. Charles C. Glabe Laboratory) |
| 1998-1999 | Teaching Assistant, Dept. of Molecular and Structural Biochemistry, North Carolina State University, USA |
| 1996-1998 | Research Assistant, Institute of Botany, Academia Sinica |

## Research Interests:

**Protein Folding/Misfolding, Amyloids, and Neurodegenerative Diseases**

My research focuses on understanding the mechanism of protein misfolding diseases, amyloidosis, by various techniques including biochemical, biophysical, molecular, and cellular methods. Our long-term goal is to elucidate the disease mechanisms of amyloidosis in the aspects of protein folding and structure, pathogenic protein interactions, and relate the results to the medical consequences. We further utilize the knowledge to develop novel diagnostic means and therapeutic modalities. Many ageing-related neurodegenerative diseases such as *Alzheimer's disease (AD)* and *Parkinson's disease (PD)* belong to amyloidosis. Among them, AD is the most serious problem in the 21st century. Amyloidosis is caused by aggregation of misfolded proteins to form amyloid fibrils comprising specific cross-β structures. Amyloid oligomers that exist in several neurodegenerative diseases imply a common toxicity mechanism in different neurodegenerative diseases. Currently, we are working on three amyloid and amyloid-like proteins and their interacting partners in neurodegenerative diseases. They are **amyloid-β** (Aβ) peptide and **tau** protein, the major substance in senile plaques and neurofibrillary tangles of AD patients respectively, **TDP-43**, an inclusion found in a subtype of *frontotemporal lobar dementia* (FTLD), *amyotrophic lateral sclerosis* (ALS), and AD, and **C9Orf72-translated dipeptide repeats** in FTD/ALS. We start from elucidating the mechanism of such aggregation and further developing the diagnostic method, antibodies, and small molecule inhibitors. Moreover, we study the structure, function, and interactions of the related glycan conjugates, precursor proteins, and modifiers. The major research interests are listed as follows:

- Protein folding and misfolding of amyloids in neurodegenerative diseases.
- Amyloid protein oligomerization and the toxicity mechanisms in neurodegenerative diseases.
- Interactions of proteins, glycans, and lipids with the proteins involved in pathogenesis of the neurodegenerative diseases.
- Drug screening, diagnostic, and therapeutic development in neurodegenerative diseases.

## Honors:

- 2024 第 21 屆國家新創精進獎。「對抗漸凍人及相關神經退化疾病的結構專一型單株抗體」。The 21th National Innovation Improvement Award. "A novel conformation-dependent monoclonal antibody against ALS and related neurodegenerative diseases"
- 2024 National Biotechnology Research Park Demo Day, The Investment Award. 國家生技研究園區招商暨人才與技術媒合會-投資青睞獎 (Judged by a team of MIT Professors including Academicians Harvey Lodish and Andrew Lo)
- 2023 Awarded by Boehringer Ingelheim's BioMedicine Innovation Program 百靈佳殷格翰 2023 獨角獸 2.0 -- 生醫新創加乘行動計畫
- 2023 NBRP PITCH DAY Potential Team Award "A novel therapeutic monoclonal antibody against ALS and related neurodegenerative diseases" 國家生技園區全國生醫轉譯選拔媒合會-潛力團隊獎「針對漸凍人及相關神經退化疾病之新穎性治療抗體」。
- 2023 中華扶輪教育基金會 2022-23 年度「傑出/特殊人才」獎。Outstanding Award by Chung Hwa Rotary Education Foundation, 2022-2023.
- 2023 Investigator Project Grant, Academia Sinica 中央研究院深耕計畫
- 2022 第 19 屆國家新創獎。「對抗漸凍人及相關神經退化疾病的結構專一型單株抗體」。The 19th National Innovation Award. "A novel conformation-dependent monoclonal antibody against ALS and related neurodegenerative diseases"
- 2021 第十九屆有庠科技論文獎 The 19th Y. Z. Hsu Scientific Paper Award, Far Eastern Y. Z. Hsu Science and Technology Memorial Foundation, 2021
- 2019 National China Youth Corps Youth Medal, Taiwan. 108 年度救國團青年獎章

- 2018 Selected work for Future Tech Exhibition "A novel potential therapeutic antibody to combat ALS and related neurodegenerative diseases". 技術團隊入選 2018 科技部未來科技展，作品"治療漸凍人及相關神經退化疾病的新穎抗體"
- 2018 年第 14 屆永信李天德青年醫藥科技獎 The 14th Young Investigator Award, TienTe Lee Biomedical Foundation
- 2017 Career Development Award, Academia Sinica 中央研究院前瞻計畫
- 2016 年中國化學會傑出青年化學家獎章 2016 Young Chemists Award of the Chemical Society, Taipei
- 2015 104 年度科技部吳大猷先生紀念獎 2015 Ta-You Wu Memorial Award
- **2015 第三世界科學院年輕學者成員 TWAS Young Affiliate, 2015-2019, East & Southeast Asia and Pacific Region (International Award)**
- 2015 第十三屆有庠科技論文獎 The 13th Y. Z. Hsu Scientific Paper Award, Far Eastern Y. Z. Hsu Science and Technology Memorial Foundation, 2015
- 2015 104 年度中央研究院年輕學者著作學獎 Academia Sinica Research Award for Junior Research Investigators, 2015
- **2015 Junior Faculty Award, the 12th International Conference on Alzheimer's Disease and Parkinson's Disease, 2015 (International Award)**
- 2014 財團法人吳健雄學術基金會 103 年度台灣女科學家新秀獎 Promising Women in Science Award, Wu Chieh Shiung Education Foundation, 2014
- 2013 中華民國生物物理學會 102 年度傑出年輕學者獎 Young Investigator Award, Biophysical Society of R.O.C., 2013
- 台灣臨床失智症學會財團法人立夫醫藥文教基金會學術獎第一名之指導教授 2012 和 2015，第二名之指導教授 2011，佳作指導教授 2014。 Taiwan Dementia Society, LiFu Medical Research Foundation Academic Award, Advisor of the 1st Price in 2012 and 2015, 2nd Price in 2011, excellent work in 2014.
- 台灣生物化學及分子生物學會年輕學者出國研習優秀論文獎助 The Taiwan Society for Biochemistry and Molecular Biology Traveling Fellowship, 2012
  2012 FAOBMB Congress

## Manuscripts in preparation, submission, or revision:

**1.** Wei-Wei Chang†, Yuh-Shen Lye†, Yao-Hsiang Shih†, Yu-Sheng Fang, Jeng-Jung Wu, Rong-Shou Chen, Justin Kwan, and **Yun-Ru Chen***. TDP-43-oligomer specific monoclonal antibodies identify TDP-43 oligomers in ALS patients and rescue abnormality in ALS mouse models. In preparation. **(2024)**

## Publications in current position: (*corresponding author; times cited from Google Scholar)

**2.** Gary Jen-Wei Chen§, Ming-Yun Chang§, Xin-Peng Lin, Debapriya Kundu, Yu-Jen Chang, and **Yun-Ru Chen***. Tau destabilization in a familial deletion mutant K280 accelerates its fibrillization and enhances the seeding effect. **J. Biol. Chem.** 301(2):108184 (**2025**). PMID: 39814228.

**3.** Ya-Ling Chiang, Yu-Jen Chang, Yun-Ru Chen, Ing-Shouh Hwang*. Evidence Supporting Enrichment of Dissolved Air Gases near Hydrophobic Macromolecules in Aqueous Solutions. **Langmuir**. 41(1):285-291 (**2024**). PMID: 39736133.

4. Tien-Chang Lin‡, Orion Shih‡, Tien-Ying Tsai, Yi-Qi Yeh, Kuei-Fen Liao, Bradley W. Mansel, Ying-Jen Shiu, Chi-Fon Chang, An-Chung Su, **Yun-Ru Chen*** and U-Ser Jeng*. Binding structures of SERF1a with NT17-polyQ peptides of huntingtin exon 1 revealed by SECSWAXS, NMR and molecular simulation. **IUCrJ**. 11(Pt 5):849-858. PMID: 39120045 (**2024**).

5. Yu-Jen Chang, Kai-Tai Lin, Orion Shih, Chi-Hua Yang, Ching-Yu Chuang, Ming-Han Fan, Yi-Chung Lee, Hung-Chih Kuo, Shang-Cheng Hung, Chi-Kuang Yao, U-Ser Jeng, **Yun-Ru Chen***. Sulfated disaccharide protects membrane and DNA damages from poly-glycine-arginine in ALS. **Science Advances**. Feb 23;10(8) **(2024).** PMID: 38394210. (IF=13.6, times cited=1)
   Research Highlights in Press:
   - AS: https://www.sinica.edu.tw/News_Content/55/2452
   - GRC: https://www.genomics.sinica.edu.tw/tw/news/lastest-news/759-als-polygr-pg
   - UDN 聯合新聞網: https://udn.com/news/story/7266/7838315

6. Yu-Jen Chang, Yi-Hsin Chien, Chieh-Chun Chang, Pei-Ning Wang, **Yun-Ru Chen***, Yun-Chorng Chang*. Detection of Femtomolar Amyloid-β Peptides for Early-Stage Identification of Alzheimer's Amyloid-β Aggregation with Functionalized Gold Nanoparticles. **ACS Applied Materials & Interfaces.** 16(3):3819-3828 **(2024).** PMID: 38214471. (IF=9.5, times cited=5)

7. Tien-Ying Tsai, Wei-Ting Jhang, Hung-Kai Hsu, Yi-Tsu Chan, Chi-Fon Chang, **Yun-Ru Chen***. Amyloid Modifier SERF1a Accelerates Alzheimer's Amyloid-β Fibrillization and Exacerbates the Cytotoxicity. **ACS Chemical Neuroscience**. 15, 3, 479–490 **(2024).** PMID: 38211979. (IF=5.0, times cited=1)

8. Tien-Ying Tsai§, Chun-Yu Chen§, Tien-Wei Lin, Tien-Chang Lin, Feng-Lan Chiu, Orion Shih, Ming-Yun Chang, Yu-Chun Lin, An-Chung Su, U-Ser Jeng, Hung-Chih Kuo, Chi-Fon Chang, and **Yun-Ru Chen***. Amyloid Modifier SERF1a Interacts with PolyQ-expanded Huntingtin Exon 1 via Helical Interactions and Exacerbates PolyQ-induced Toxicity. **Communications Biology**. 6, 767 **(2023)** PMID: 37479809. (IF=5.9, times cited=2)

9. Tien-Wei Lin†, Jung-Kai Chang†, Yih-Ru Wu, Tsung-Hsien Sun, Yang-Yu Cheng, Chien-Tai Ren, Mei-Hung Pan, Jin-Lin Wu, Kuo-Hsuan Chang, Hwai-I Yang, Chiung-Mei Chen*, Chung-Yi Wu*, and **Yun-Ru Chen***. Ganglioside-focused Glycan Array Reveals Abnormal Anti-GD1b Auto-antibody in Plasma of Preclinical Huntington's Disease. **Molecular Neurobiology.** 60(7):3873-3882. **(2023)** PMID: 36976478. (IF=5.1, times cited=1)

10. Jin-Lin Wu and **Yun-Ru Chen***. Signal peptide stabilizes folding and inhibits misfolding of serum amyloid A. **Protein Science**. 31(12):e4485. **(2022)** PMID: 36309973. (IF=6.725, times cited=3)

11. Wan-Chin Chiang§, Yu-Sheng Fang§, Yuh Shen Lye, Tzu-Yu Wong, Kiruthika Ganesan, Shih-Han Huang, Lan-Yun Chang, Shih-Chieh Chou, **Yun-Ru Chen***. Hyperphosphorylation-mimetic TDP-43 Drives Amyloid Formation and Possesses Neuronal Toxicity at the Oligomeric Stage. **ACS Chemical Neuroscience**. 13, 17, 2599–2612 **(2022).** PMID: 36007056. **(Selected as SI cover)** (IF=5.0, times cited=3)

12. Jin-Lin Wu, Tung-Hung Su, Pei-Jer Chen, and **Yun-Ru Chen***. Acute Phase Serum Amyloid A and its Prion-like Property as a Potential Serum Diagnosis Biomarker for Hepatocellular Carcinoma. **Scientific Reports.** 12:5799 **(2022).** PMID: 35388082. (IF=4.6, times cited=8)

13. Yuh Shen Lye and **Yun-Ru Chen***. TAR DNA-binding protein 43 Oligomers in Physiology and Pathology. **IUBMB Life**. **Review**. 74(8):794-811 **(2022)** PMID: 35229461. (IF=4.83, times cited=12) (WILEY Top Cited Article 2022-2023)

14. Ming-Che Lee‡, Yi-Hung Liao‡, Shih-Hui Chen, and **Yun-Ru Chen***. Amyloid-β E22K Fibril in Familial Alzheimer's Disease is More Thermo-stable and Susceptible to Seeding. **IUBMB Life**. 74(8):739-747. **(2021)** PMID: 34724333. **(Cover Story)** (IF=4.83, times cited=2)

15. Katrin H. P. Vu, Ming-Che Lee, Gerhard H. Blankenburg, Yu-Jen Chang, Ming-Lee Chu, Andreas Erbe, Leonardo Lesser-Rojas, **Yun-Ru Chen***, and Chia-Fu Chou* Time-evolved SERS signatures of DEP-trapped Aβ and $Zn^{2+}$Aβ peptides revealed by a sub-10 nm electrode nanogap. **Analytical Chemistry.** 93(49):16320-16329 **(2021)** PMID: 34817990**.** (**Supplementary Cover Story**) (IF=7.4, times cited=10)

16. Ya-Ling Chiang, Yu-Jen Chang, **Yun-Ru Chen***, and Ing-Shouh Hwang*. Effects of dissolved gases on the amyloid fibril morphology. **Langmuir**. 37, 1, 516–523 **(2021)** PMID: 33352048. (IF=3.882, times cited=2)

17. Yao-Hsiang Shih§, Ling-Hsien Tu§, Ting-Yu Chang, Kiruthika Ganesan, Wei-Wei Chang, Pao-Sheng Chang, Yu-Sheng Fang, Yeh-Tung Lin, Lee-Way Jin, and **Yun-Ru Chen***. TDP-43 interacts with amyloid-β, inhibits fibrillization, and worsens pathology in a model of Alzheimer's disease. **Nature Communications**. 11: 5950 **(2020)** PMID: 33230138. (IF=14.919, times cited=68) (selected as annual important publication in Academia Sinica)
Research Highlights in Press:
   - GRC: https://www.genomics.sinica.edu.tw/index.php/tw/news/lastest-news/637-tdp-43
   - Liberty Times 自由時報:https://news.ltn.com.tw/news/life/paper/1415430
   - UDN 聯合新聞網: https://udn.com/news/story/7266/5047708
   - 民視: https://www.ftvnews.com.tw/news/detail/2020B27L04M1
   - Radio Taiwan International 中央廣播電台 https://www.rti.org.tw/news/view/id/2085768

18. Phillip Smethurst, Emmanuel Risse, Giulia E. Tyzack, Jamie S. Mitchell, Doaa M. Taha, Yun-Ru Chen, Jia Newcombe, John Collinge, Katie Sidle and Rickie Patani*. Distinct responses of neurons and astrocytes to TDP-43 proteinopathy in amyotrophic lateral sclerosis. **Brain**. 143 (2):430-440 **(2020)** PMID: 32040555. (IF=13.501, times cited=96)

19. Shih-Ling Huang, Lien-Szu Wu, Min Lee, Chin-Wen Chang, Wei-Cheng Cheng, Yu-Sheng Fang, Yun-Ru Chen, Pei-Lin Cheng, Che-Kun James Shen*. A Robust TDP-43 Knock-In Mouse Model of ALS. **Acta Neuropathologica Communications (2020)** 8(1):3. PMID: 31964415. (IF=7.801, times cited=62)

20. Ling-Hsien Tu, Ning-Hsuan Tseng, Ya-Ru Tsai, Tien-Wei Lin, Yi-Wei Lo, Jien-Lin Charng, Hua-Ting Hsu, Yu-Sheng Chen, Rong-Jie Chen, Ying-Da Wu, Yi-Tsu Chan, Chang-Shi Chen, Jim-Min Fang*, and **Yun-Ru Chen***. Rationally Designed Divalent Caffeic Amides Inhibit Amyloid-β Fibrillization, Induce Fibril Dissociation, and Ameliorate Cytotoxicity. **European Journal of Medicinal Chemistry**. 158: 393-404 **(2018)** PMID: 30227353. (IF=6.514, times cited=14)

21. Chia-Jung Kuo, Hsu-Cheng Chiang, Chi-Ang Tseng, Chin-Fu Chang, Rajesh Kumar

Ulaganathan, Tzu-Ting Ling, Yu-Jen Chang, Chiao-Chen Chen, Yun-Ru Chen, and Yit-Tsong Chen*. A Lipid-Modified Graphene-Transistor Biosensor for Monitoring Amyloid-β Aggregation. **ACS Applied Materials & Interfaces.** 10(15):12311-12316 **(2018)** PMID: 29611693. (IF=9.229, times cited=31)

**22.** Ming-Che Lee, Wan-Cheng Yu, Yao-Hsiang Shih, Chun-Yu Chen, Zhong-Hong Guo, Shing-Jong Huang, Jerry C. C. Chan, and **Yun-Ru Chen***. Zinc ion rapidly induces toxic, off-pathway amyloid-β oligomers distinct from amyloid-β derived diffusible ligands in Alzheimer's disease. **Scientific Reports** 8, Article number: 4772 **(2018)** PMID: 29555950. (IF=4.379, times cited=135)

**23.** Tien-Wei Lin, Chi-Fon Chang, Yu-Jen Chang, Yi-Hung Liao, Hui-Ming Yu, and **Yun-Ru Chen***. Alzheimer's Amyloid-β A2T Variant and its N-terminal Peptides Inhibit Amyloid-β Fibrillization and Rescue the Induced Cytotoxicity. **PLoS One**. 12(3):e0174561 **(2017)** PMID: 28362827. (IF=3.240, times cited=36)

**24.** Smethurst, Phillip*; Newcombe, Jia; Troakes, Claire;Simone, Roberto; Wadsworth, John; Hardy, John; **Chen, Yun-Ru**; Patani, Rickie; Sidle, Katie. In vitro prion-like mechanisms of TDP-43 in ALS. **Neurobiology of Disease**, 96:236-247 **(2016)** PMID: 27590623. (IF=5.996, times cited=151)

**25.** Nguyen Quoc Thai, Ning-Hsuan Tseng, Mui Thi Vu, Tin Trung Nguyen, Huynh Quang Linh, Chin-Kun Hu*, **Yun-Ru Chen***, and Mai Suan Li*. Discovery of DNA dyes Hoechst 34580 and 33342 as good candidates for Alzheimer's disease: in silico and in vitro study. **Journal of Computer-Aided Molecular Design,** Aug;30(8):639-50 **(2016)** PMID: 27511370. (IF=3.686, times cited=1)

**26.** Yu-Jen Chang, Nguyen Hoang Linh, Yao-Hsiang Shih, Hui-Ming Yu, Mai Suan Li*, and **Yun-Ru Chen***. Alzheimer's Amyloid-β Sequesters Caspase-3 in vitro via its C-terminal Tail. **ACS Chemical Neuroscience**, 7(8):1097-106 **(2016)** PMID: 27227450. (IF=4.418, times cited=23)

**27.** Yu-Jen Chang, U-Ser Jeng, Ya-Ling Chiang, Ing-Shouh Hwang, and **Yun-Ru Chen***. The Glycine-Alanine Dipeptide Repeat from C9orf72 Hexanucleotide Expansions Forms Toxic Amyloids Possessing Cell-to-cell Transmission Properties. **J Biol. Chem.**, 291(10):4903-11. **(2016)** PMID: 26769963**.** (IF=5.157, times cited=132)

**28.** Chia‐Wei Lee, Lan‐Ling Jang, Huei‐Jyuan Pan, **Yun‐Ru Chen**, Chih‐Cheng Chen, and Chau‐Hwang Lee. "Membrane roughness as a sensitive parameter reflecting the status of neuronal cells in response to chemical and nanoparticle treatments". **Journal of Nanobiotechnology**, 14:9. **(2016)** PMID: 26821536. (IF=10.435, times cited=25)

**29.** Yi-Hung Liao and **Yun-Ru Chen***. A novel method for expression and purification of authentic amyloid-β with and without 15N labels. **Protein expression and purification**, 113, 63-71. **(2015)** PMID: 25969353. (IF=1.650, times cited=16)

**30.** Patricia F. Kao, **Yun-Ru Chen**, Xiao-Bo Liu, Charles DeCarli, William W. Seeley, and Lee-Way Jin*. Detection of TDP-43 oligomers in frontotemporal lobar degeneration-TDP. **Annals of Neurology**, 78(2):211-21. **(2015)** PMID: 25921485. (IF=10.422; times cited=28)

**31.** Yu-Sheng Fang, Kuen-Jer Tsai, Yu-Jen Chang, Patricia Kao, Rima Woods, Pan-Hsien Kuo, Cheng-Chun Wu, Jhih-Ying Liao, Shih-Chieh Chou, Vinson Lin, Lee-Way Jin, Hanna S. Yuan, Irene H Cheng, Pang-Hsien Tu, and **Yun-Ru Chen***. Full-Length TDP-43 Forms Toxic Amyloid Oligomers that are Present in Frontotemporal Lobar Dementia-TDP Patients. **Nature Communications,** 5:4824 **(2014)** PMID: 25215604. (IF=14.919; times cited=231, R/C=4/73, Multidisciplinary Sciences)

Research Highlights in Press

- Alzforum News: http://www.alzforum.org/news/research-news/does-tdp-43-oligomerize-and-coax-av-do-same
- PTS News Network 公視新聞: https://www.youtube.com/watch?v=N1QNiBg4uFw#action=share
- CTS News Magazine 華視新聞雜誌專訪: https://www.youtube.com/watch?v=aVlVrimF4J0&feature=youtu.be
- UDN 聯合新聞網專訪: https://video.udn.com/news/254960
- United Daily News 聯合報
- China Times 中國時報

**32.** Yu-Jen Chang and **Yun-Ru Chen***. The Co-existence of an Equal Amount of Alzheimer's Amyloid-β 40 and 42 forms Structurally Stable and Toxic Oligomers through a Distinct Pathway. **FEBS Journal**, 281, 2674-2687 **(2014)** PMID: 24720730. (IF=5.542, times cited=66)

**33.** Huei-Jyuan Pan, Ruei-Lin Wang, Jian-Long Xiao, Yu-Jen Chang, Ji-Yen Cheng, **Yun-Ru Chen**, and Chau-Hwang Lee*. Using optical profilometry to characterize cell membrane roughness influenced by Amyloid-beta peptide and electric fields. **Journal of Biomedical Optics**, 19 (1):011009 **(2014)** PMID: 23892727. (IF=3.170, times cited=9)

**34.** Man Hoang Viet, Chun-Yu Chen, Chin-Kun Hu, **Yun-Ru Chen***, and Mai Suan Li*. Discovery of Dihydrochalcone as a potential lead for Alzheimer's disease: in silico and in vitro study. **PLoS One**, 8(11):e79151. **(2013)** PMID: 24260164. (IF=3.057, times cited=45)

**35.** Wei-Chieh Cheng*, Chen-Yi Weng, Wen-Yi Yun, Shang-Yu Chang, Yu-Chun Lin, Fuu-Jen Tsai, Fu Yung Huang, **Yun-Ru Chen**. Rapid modifications of *N*-substitution in iminosugars: Development of new β-glucocerebrosidase inhibitors and pharmacological chaperones for Gaucher disease. **Bioorganic & Medicinal Chemistry**, 21(17) 5021-5028. **(2013)** PMID: 23880081**.** (IF=3.641, times cited=35)

**36.** Rong-Jie Chen, Wei-Wei Chang, Yu-Chun Lin, Pei-Lin Cheng, and **Yun-Ru Chen***. Alzheimer's Amyloid-β Oligomers Rescue Cellular Prion Protein Induced Tau Reduction via Fyn pathways. **ACS Chemical Neuroscience,** 4(9):1287-96. **(2013)** PMID: 23805846**.** (IF=4.418, times cited=45)

**37.** Yi-Ting Wang, Pan-Hsien Kuo, Chien-Hao Chiang, Jhe-Ruei Liang, **Yun-Ru Chen**, Shuying Wang, James C. K. Shen, and Hanna S. Yuan. The truncated C-terminal RRM domain of TDP-43 plays a key role in forming proteinaceous aggregates. **J Biol. Chem.**, 288 (13), 9049-57. **(2013)** PMID: 23372158. (IF=5.157, times cited=124)

**38.** Winny Ariesandi, Chi-Fon Chang, Tseng-Erh Chen, and **Yun-Ru Chen***. Temperature-dependent structural changes of Parkinson's α-synuclein reveal the role of pre-existing oligomers in α-synuclein fibrillization. **PLoS One**, 8(1):e53487. **(2013)** PMID: 23349712. (IF=3.057,

times cited=48)

**39.** Yi-Hung Liao, Yu-Jen Chang, Yuji Yoshiike, Yun-Chorng Chang*, and **Yun-Ru Chen***. Negatively charged gold nanoparticles inhibit Alzheimer's amyloid-β fibrillization, induce fibril dissociation, and mitigate neurotoxicity. **Small**, 8(23):3631-3639. **(2012)** PMID: 22915547. (IF=13.281, times cited=365).

**40.** Wei-Ting Chen, Chen-Jee Hong, Ya-Tzu Lin, Wen-Han Chang, He-Ting Huang, Jhih-Ying Liao, Yu-Jen Chang, Yi-Fang Hsieh, Chih-Ya Cheng, Hsiu-Chih Liu, **Yun-Ru Chen***, and Irene H Cheng *. Amyloid-beta (Aβ) D7H mutation increases oligomeric Aβ42 and alters properties of Aβ-zinc/copper assemblies. **PLoS One**, 7(4): e35807. **(2012)** PMID: 22558227. (IF=3.240, times cited=139).

**41.** Chun-Lun Ni, Hoi-Ping Shi, Hui-Ming Yu, Yun-Chorng Chang, and **Yun-Ru Chen***. Folding Stability of Amyloid-β40 Monomer is an Important Determinant of the Nucleation Kinetics in Fibrillization. **FASEB J.**, 25(4), 1390-401. **(2011)** PMID: 21209058. **(featured as a key scientific article in Global Medical Discovery)** (IF=5.191, times cited=64)

**42.** Wei-Ting Chen, Yi-Hung Liao, Hui-Ming Yu, Irene Cheng, and **Yun-Ru Chen***. Distinct Effects of $Zn^{2+}$, $Cu^{2+}$, $Fe^{3+}$, and $Al^{3+}$ on Amyloid-β Stability, Oligomerization, and Aggregation: Amyloid-β Destabilization Promotes Annular Protofibril Formation. **J Biol. Chem.**, 286 (11), 9646-56. **(2011)** PMID: 21216965. (IF=5.157; times cited=246)

**43.** Ni-Shian Lin, John Ching-Hao Chao, Fang-Chieh Chou, Chi-Fon Chang, **Yun-Ru Chen**, Yu-Jen Chang, Shing-Jong Huang, Wei-Hsiang Tseng, and Jerry C. C. Chan. Molecular Structure of Amyloid Fibrils Formed by Residues 127 to 147 of the Human Prion Protein. **Chemistry - A European Journal,** 16(18), 5492-9 **(2010)** PMID: 20358555. (IF=5.236, times cited=17)

**44.** Yuji Yoshiike, Ryoichi Minai, Yo Matsuo, **Yun-Ru Chen**, Tetsuya Kimura, Akihiko Takashima. Amyloid Oligomer Conformation in a Group of Natively Folded Proteins. **PLoS One**, 3(9), e3235 **(2008)** PMID: 18800165. (IF=3.240, times cited=85)

## Publications prior to current position:

**45.** **Yun-Ru Chen**, Charles G. Glabe*. Distinct Early Folding and Aggregation Properties of Alzheimer Amyloid-β Peptide Aβ40 and Aβ42: Stable Trimer or Tetramer Formation by Aβ42. **J Biol. Chem.**, Aug 25;281(34):24414-22 **(2006)** (IF=5.157; times cited=306)

**46.** **Yun-Ru Chen**, A. Clay Clark*. Substitutions of prolines examine their role in kinetic trap formation of the caspase recruitment domain (CARD) of RICK. **Protein Science**. Mar;15(3):395-409 **(2006)** PMID: 16809342. (IF=6.725, times cited=10)

**47.** **Yun-Ru Chen**, A. Clay Clark*. Kinetic traps in the folding/unfolding of procaspase-1 CARD Domain. **Protein Science**. Aug;13(8):2196-206. **(2004)** PMID: 15273313. (IF=6.725, times cited = 25)

**48.** **Yun-Ru Chen**, A. Clay Clark*. Equilibrium and Kinetic Folding of the α-Helical Greek Key Protein Domain: Caspase Recruitment Domain (CARD) of RICK. **Biochemistry**, 42(20); 6310-6320. **(2003)** PMID: 12755636. (IF=3.162, times cited = 26)

**49.** Pop C, **Chen YR**, Smith B, Bose K, Bobay B, Tripathy A, Franzen S, Clark AC*. Removal of the pro-domain does not affect the conformation of the procaspase-3 dimer. **Biochemistry**. Nov 27; 40(47);14224-14235. **(2001)** PMID: 11714276. (IF=3.162, times cited = 86)

**50.** Y. Y. Charng, C. W. Sun, S. L. Yan, S. J. Chou, **Y. R. Chen** and S. F. Yang*. cDNA sequence of a putative ethylene receptor from carnation petals. **Plant Physiol.** 115. 863. **(1997)** (IF=8.340, times cited = 33)

## Book Chapter

**1.** Chang, Y.J. and **Chen, Y.R.*** (2017). "Folding and Misfolding of Amyloid-β 40 and 42 in Alzheimer's Disease" in Yuan, J.M and Zhou, H.X. (Ed.), "Biophysics and biochemistry of protein aggregation". Singapore, World Scientific.

## Conference Publication:

**1.** **Yun-Ru Chen***. Recombinant TDP-43 Forms Toxic and Stable Amyloid-like Oligomers. **Alzheimer's and Dementia**, ISSN: 1552-5260, Vol: 6, Issue: 4, e44 (**2010**)

## Patent

1. US 9796778 B1. ANTIBODIES AGAINST PATHOLOGICAL FORMS OF TDP-43 AND USES THEREOF. Yun-Ru Chen. (2017.10.24-2035.9.14)
2. 台灣專利 I592423 B.可辨識致病性 TDP-43 之抗體及其用途 (2017.7.21-2035.3.8)
3. (PCT/US22/42938) SYNTHETIC COMPOUND, KIT COMPRISING THE SAME, AND USES THEREOF
4. 台灣專利 I82831.1 合成化合物、包含該合成化合物的套組及其用途／SYNTHETIC COMPOUND, KIT COMPRISING THE SAME, AND USES THEREOF(2024.1.1-2042.9.7)
5. 28A-1091014 METHOD FOR TREATING HEPATOCELLULAR CARCINOMA US Provisional Patent. (2021.1.23-)
6. 台灣專利 I816286 偵測肝細胞癌的方法/ METHOD FOR TREATING HEPATOCELLULAR CARCINOMA (2023.9.21-2042.1.20)
7. SACCHARIDES AND USES THEREOF IN TREATING NEUROLOGICAL DISEASES (28A-1110824) US Provisional Patent. (2023.9.1.-)

## Selected Presentations:

**Invited Oral Presentations since 2006** (Talk abroad) (Invited Talk in Major Scientific Conferences)

1. Feb. 11, 2025. **The 50th Lorne Protein Conference, Lorne, Australia.** APPA session "Protein misfolding, pathogenic mechanism, and therapeutic potential for TDP-43 and dipeptide repeats in the neurodegenerative diseases".
2. Sep. 27, 2024. **Nara Medical University, Osaka, Japan.** Medical and Nursing Seminar in English. **"**Pathogenic mechanism and therapeutic potential for misfolded TDP-43 and dipeptide repeats in the neurodegenerative diseases"
3. Sep. 24-26, 2024. **IPR Seminar, Osaka University, Japan.** The 8th symposium/ The Biophysical Society of Japan Joint Seminar: Toward establishing LLPS research systems. "Understanding aggregation of TDP-43 and dipeptide repeats in neurodegenerative diseases".

4. Jun. 24-28, 2024. **The 21th IUPAB congress**. Kyoto, Japan. "Investigation of Toxicity and Structural Mechanism of Dipeptide Repeats in ALS and the Therapeutic Strategy" (IUPAB: International Union of Pure and Applied Biophysics)
5. Jun. 11-13, 2024. **The 24th Annual Meeting of Protein Science Society of Japan (PSSJ)**, Sapporo, Japan. "Introduction of APPA and Research on Protein Misfolding in Neurodegenerative Diseases"
6. May. 16-17, 2024. **Annual GlycoRetreat**. Yilan, Taiwan. "Pathogenic mechanism and therapeutic potential for dipeptide repeats in ALS"
7. Mar. 23-24, 2024. **JACBS. The 38th Joint Annual Conference of Biomedical Science**, Taipei, Taiwan."Pathogenic mechanism and therapeutic potential for misfolded proteins in ALS" 第三十八屆生物醫學聯合學術年會
8. Jan. 24-26 **TPS 2024 Annual Meeting**. Taipei, Taiwan. "The protein misfolding problem and the therapeutic approach" 2024 台灣物理年會
9. Jul. 2-7, 2023. **Gordon Research Conference. ALS and related Motor Neuron Diseases. Les Diablerets, VD, Switzerland**. "Pathogenic mechanism and therapeutic potential for misfolded TDP-43 oligomers in ALS".
10. June 19-21. **The 17th meeting of the Asian-Pacific Society for Neurochemistry, Singapore**. "Pathogenic mechanism and therapeutic potential for misfolded TDP-43 oligomers in ALS"
11. March 28-April 1, 2023. **The International conference on Alzheimer's and Parkinson's diseases AD/PD 2023, Gothenburg, Sweden.** "Misfolded TDP-43 forming toxic oligomers rescued by TDP-43 oligomer-specific antibody in ALS mouse models"
12. **Aug. 30-Sep. 01. NSRRC 2022 Annual Users' Meeting & Workshops**. NSRRC, Hsinchu, Taiwan. "Investigating Structure-function Relationship of Dipeptide Repeats in Neurodegenerative Diseases"
13. March 15-20, 2022. **The International conference on Alzheimer's and Parkinson's diseases AD/PD 2022, Barcelona, Spain.** (virtual) "TDP-43 Promotes Amyloid-β Oligomerization via Interaction and Worsens Pathology in a model of Alzheimer's disease"
14. Nov. 30, 2021. **Dept. of Biomedical Sciences and Engineering, National Central University, Taoyuan, Taiwan.** "From Protein Misfolding to Translational Medical Research for Alzheimer's Disease and ALS"
15. Nov. 19 2021. **The 25th Biophysics Conference, National Cheng-Kung Univ., Tainan, Taiwan. Plenary Talk** "Investigation of misfolded TDP-43 oligomers and its role in Alzheimer's Disease"
16. Apr. 22, 2021**. IUBMB focused meeting** on "Neurodegenerative Diseases", Academia Sinica, Taipei, Taiwan." Investigation of the Role of TDP-43 in Alzheimer's Disease". Main Organizer. (Chair of the Organizing Committee)
17. Jul. 7, 2020 (postponed). **World Conference on Protein Science, Sapporo, Japan**. "TBA"
18. Nov. 17, 2019. **THE TAIWAN SOCIETY FOR BIOCHEMISTRY AND MOLECULAR BIOLOGY (TSMBM) annual symposium**. "Neurodegenerative Diseases" Organizing committee. "TDP-43 Interacts with Amyloid-β and Exacerbates Pathology of Alzheimer's Disease"
19. Oct. 3, 2019. **Asian Pacific Prion Symposium 2019, RIKEN, Wako, Saitama, Japan.** "Tau destabilization accelerates fibrillization and modulates the seeding template effect"
20. Jul. 29, 2019. **RIKEN Symposium: "Understanding the molecular basis of neuropsychiatric disorders", RIKEN Center for Brain Science, Wako, Saitama, Japan.** "Understanding Protein Misfolding of TDP-43 and Dipeptide Repeats in FTD/ALS and Developing Therapeutic Potentials"
21. Jun. 13, 2019, **FASEB Summer Conference: The Protein Aggregation Conference: From Structure to In Vivo Sequelae, Snowmass Village, CO, USA.** "TDP-43 Interacts with Amyloid-β and Exacerbates Pathology of Alzheimer's Disease"

22. Mar. 27, 2019. **The 14th International conference on Alzheimer's and Parkinson's diseases AD/PD 2019, Lisbon, Portugal.** "TDP-43 interacts with amyloid-β and exacerbates pathology of Alzheimer's disease".
23. Jan. 24, 2019. **RIKEN Symposium: "Recent Progress in Protein Conformation and Aggregation", RIKEN Center for Brain Science, Wako, Saitama, Japan.** "From Protein Misfolding to Translational Medical Research for Alzheimer's Disease and ALS"
24. Dec. 13, 2018. **Frontier research in Alzheimer's disease**, Academia Sinica, Taipei, Taiwan. "Discovery of TDP-43 oligomer and the role in Alzheimer's disease"
25. Dec. 2, 2018. **Asian Biophysics Association Symposium (ABA2018). Melbourne, Australia.** "Protein Misfolding and Therapeutics in Neurodegenerative Diseases".
26. Nov. 24, 2018. **The 4th Taiwan International Congress of Parkinson' Disease and Movement Disorders (4th TIC-PDMD), Taipei, Taiwan.** "TDP-43 aggregation and therapeutic development in neurodegenerative diseases"
27. Nov. 22, 2018. **Biomedical Lecture, Taipei Medical University, Taipei, Taiwan.** "From Protein Misfolding to Translational Medical Research for Alzheimer's Disease and ALS"北醫姆山生物醫學講座
28. Oct. 20, 2017. **Dept. of Neurology, National Taiwan University Hospital, National Taiwan University, Taipei, Taiwan**. "From Protein Misfolding to Translational Medical Research for Alzheimer's Disease and ALS"
29. Aug. 18, 2017. **Inst. of Brain Science, National Yang-Ming University, Taipei, Taiwan**. "From Protein Misfolding to Translational Medical Research for Alzheimer's Disease and ALS"
30. Jul. 12th, 2017. **The 5th Asia Pacific Protein Association Conference, 12th International Symposium of the Protein Society of Thailand. Bangsaen, Thailand.** "Understanding Amyloids in Neurodegenerative Diseases".
31. May. 5, 2017. **Dept. of Biochemistry, National Yang-Ming University, Taipei, Taiwan**. "Understanding Amyloids and Finding Opportunities toward Combating Neurodegenerative Diseases"
32. Apr. 1, 2017. **The 13th International conference on Alzheimer's and Parkinson's diseases AD/PD 2017, Vienna, Austria.** "Understanding TDP-43 Oligomers and Dipeptide Repeats in Frontotemporal Dementia and Amyotrophic Lateral Sclerosis"
33. Mar. 24, 2017. **Osaka University/Genomics Research Center Workshop, Academia Sinica, Taipei, Taiwan.** "Understanding Amyloids in Neurodegenerative Diseases".
34. Jan. 27, 2017. **IPR Seminar / RIKEN Symposium / MEXT Kakenhi "Nascent Chain Biology: New Frontiers in Protein Misfolding and Aggregation, Osaka University, Osaka, Japan.** "Understanding TDP-43 Oligomers and Dipeptide Repeats in Frontotemporal Dementia and Amyotrophic Lateral Sclerosis"
35. Jan. 12, 2017. **Inst. of Medical Sciences, Tzu Chi University, Hualien, Taiwan**. "Understanding Amyloid Oligomers and Finding Opportunities toward Combating Neurodegenerative Diseases: Stories of Amyloid-β and TDP-43"
36. Nov. 2, 2016. **Dept. of Biomedical Engineering and Environmental Sciences, National Tsing Hua University, Hsinchu, Taiwan**. "Understanding Amyloid Oligomers and Finding Opportunities toward Combating Neurodegenerative Diseases"
37. Oct. 17, 2016. **The 23rd East Asia Joint Symposium, the 15th Cross-Strait Symposium on Biomedical Research and the 13th Symposium of the Frontiers of Biomedical Sciences, Taipei, Taiwan.** "Full-length TDP-43 Forms Toxic Amyloid Oligomers in Frontotemporal Lobar Dementia-TDP Patients and Disturbs Amyloid-β Fibrillization"
38. Oct. 7, 2016. **Sunney Chan Symposium: Membrane Proteins: Biochemistry, Diseases, and Energy. Academia Sinica, Taipei, Taiwan.** "Investigation of Pathogenic Proteins in Amyotrophic Lateral Sclerosis: TDP-43 and Dipeptide Repeats"

39. Aug. 8, 2016. **Gordon Conference: Neurobiology of Brain Disorder, Girona, Spain.** "The Discovery of Toxic TDP-43 Oligomers in TDP-43 Proteinopathies" (The only speaker from Asia)
40. Jul. 23, 2016. **生技展 BioTaiwan Exhibition, Taipei, Taiwan.** "A novel antibody for neurodegenerative diseases"
41. May 9, 2016. **Dept. of Life Science, National Taiwan University, Taipei, Taiwan**. "Understanding Amyloid Oligomers and Finding Opportunities toward Combating Neurodegenerative Diseases"
42. Apr. 20, 2016. **Taipei Medical University, Taipei, Taiwan**. "Understanding Amyloid Oligomers and Finding Opportunities toward Combating Neurodegenerative Diseases"
43. Dec. 17, 2015. **神經疾病產學交流研討會, Academia Sinica, Taipei, Taiwan.** "Discovery of Amyloid Oligomers in Neurodegenerative Diseases"
44. Nov. 27, 2015. **Dept. of Life Science, National Normal University, Taipei, Taiwan.** "Understanding amyloid oligomers and finding opportunities toward combating neurodegenerative diseases"
45. Yun-Ru Chen. (Nov. 16, 2015). **Protein Structure and Function-Joint Symposium between the Institute for Protein Research (Osaka University) and the Research School of Chemistry (Australian National University), Australia National University, Canberra, Australia.** "Discovery of Amyloid Oligomers of TDP-43 in Neurodegenerative Diseases"
46. Yun-Ru Chen. (Oct. 16, 2015). **RIKEN-Academia Sinica Joint Conference on Chemical Biology, Academia Sinica, Taipei, Taiwan.** "Understanding the Mechanism of Amyloid Formation: Stories of Amyloid-β and TDP-43"
47. Yun-Ru Chen. (Jun. 14, 2015). **Symposium of Taiwan Dementia Society, Taipei General Veteran Hospital, Taipei, Taiwan.** "An emerging new player in frontotemporal lobar dementia, amyotrophic lateral sclerosis, and Alzheimer's disease"
48. Yun-Ru Chen. (Apr. 23, 2015). **Dept. of Biochemical Science & Technology, National Taiwan University, Taipei, Taiwan.** "Understanding structure and function of amyloid-β and TDP-43 oligomers and the opportunities toward combating neurodegenerative diseases"
49. Yun-Ru Chen. (Mar. 21, 2015) **The 12th International conference on Alzheimer's and Parkinson's diseases AD/PD 2015, Nice, France.** "Full-length TDP-43 Forms Toxic Amyloid Oligomers that are Present in Frontotemporal Lobar Dementia-TDP Patients"
50. Yun-Ru Chen. (Nov. 21, 2014) **The 2nd Korea-Taiwan International Biophysics Workshop, Pusan, Korea.** "Understanding the mechanism of amyloid Formation: Stories of Amyloid-β and TDP-43"
51. Yun-Ru Chen. (Nov. 7, 2014) **The 2nd Proteostasis & Disease Symposium, Wollongong, Australia.** "Full-length TDP-43 Forms Toxic Amyloid Oligomers that are Present in Frontotemporal Lobar Dementia-TDP Patients"
52. Yun-Ru Chen. (Oct. 9, 2014) **National Tsing-Hua University Life Science Seminar Series, Taipei, Taiwan.** "Understanding the mechanism of amyloid Formation: Stories of Amyloid-β and TDP-43."
53. Yun-Ru Chen. (Oct. 6, 2014) **Taipei General Veteran Hospital, Dept. of Neurology Seminar, Taipei, Taiwan.** "Understanding Amyloid-β and TDP-43 Oligomers and the Opportunities toward Combating the Neurodegenerative Diseases."
54. Yun-Ru Chen. (March 21, 2014) **National Yang-Ming University Biomedical Seminar Series, Taipei, Taiwan.** "Understanding the Formation and Function of Amyloid Oligomers in Neurodegenerative Diseases: Alzheimer's Aβ, Parkinson's alpha-synuclein, and FTLD-U/ALS's TDP-43."
55. Yun-Ru Chen. (May 15, 2013) **National Taiwan University Hospital Seminar Series, Taipei, Taiwan.** "Pathogenic Amyloid Proteins in Neurodegenerative Diseases."

56. Yun-Ru Chen. (Jun. 2013) **The 18th Biophysics Conference, Taipei, Taiwan**. **Young Investigator Award Lecture** "The Role of Amyloid Oligomers in Amyloid Fibrillization: Amyloid-β in Alzheimer's Disease and α-Synuclein in Parkinson's Disease."
57. Yun-Ru Chen. (May. 2013) **Frontier in Neurodegenerative Diseases and Beyond-From Basic to Translational, Taipei, Taiwan.** "Distinct, Toxic Oligomer Formation during Co-existence of Alzheimer's amyloid-β 40 and 42"
58. Yun-Ru Chen. (Oct. 2012) **Annual Meeting of Society of Neuroscience (SfN), New Orleans, Louisiana, USA.** "Distinct, Toxic Oligomer Formation during Co-existence of Alzheimer's amyloid β 40 and 42"
59. Yun-Ru Chen. (Nov. 2011) **Annual Meeting of Taiwan Society of Biochemistry and Molecular Biology, Taiwan.** "Oligomerization and its Associated Toxicity in Amyloid-β in Alzheimer's Disease".
60. Yun-Ru Chen. (June 14, 2010) **IPR Seminar: Cooperation in Protein Science between Asian and Pacific Countries, Osaka University, Osaka, Japan.** "Folding Stability and Native Conformation of Amyloid-β Monomer are Important Determinants of the Nucleation Kinetics and Fibril Formation."
61. Yun-Ru Chen. (Jan. 28-29, 2010) **NCTS January Workshop on Critical Phenomena and Complex Systems, National Center for Theoretical Sciences and Inst. of Physics, Academia Sinica.** "The Conformation Stability and Aggregation Mechanism of Amyloid-β".
62. Yun-Ru Chen. (May 19-21, 2010) **15th Joint Biophysics Conference, Taipei, Taiwan.** "Folding Stability and Native Conformation of Amyloid-β Monomer are Important Determinants of the Nucleation Kinetics and Fibril Formation".
63. Yun-Ru Chen. (April, 2009) **PepCon-2009, Seoul, Korea.** "The conformational Stability and Aggregation Mechanisms of Amyloid β in Alzheimer Disease".
64. Yun-Ru Chen. (Jun. 4-5, 2009) **Frontier of Protein Aggregation and Neurodegenerative Diseases, Taipei, Academia Sinica.** "The Conformation Stability and Aggregation Mechanism of Amyloid-β".
65. Yun-Ru Chen. (Jul. 27-28, 2009) **NCTS July Workshop on Critical Phenomena and Complex Systems**. "Conformational Stability of Amyloid-β Predominantly Determines the Nucleation Phase of Fibrillization".
66. Yun-Ru Chen. (Oct. 12-13, 2007) **NCTS July Workshop on Critical Phenomena and Complex Systems.** "Equilibrium Folding and Aggregation of Wild Type and Familial Mutants of Amyloid-β in Alzheimer's Disease".
67. Yun-Ru Chen. (August, 2007) **Neuroscience Society of Taiwan, Hua Lien, Taiwan.** "Equilibrium Folding and Aggregation Properties of Wild Type and Familial Mutants of Amyloid β in Alzheimer Disease".
68. Yun-Ru Chen. (Oct. 2006) **IBC conferences: Structural and Biochemical Properties of Prions and Amyloids, Academia Sinica.** "Distinct Equilibrium Folding Properties of Amyloid β peptide 40 and 42 prior aggregation: Stable Trimer or Tetramer Formation of Aβ42".

**Selected Poster Presentations**

69. Yun-Ru Chen. (Jun. 5-9, 2016) The 16th Annual Meeting of the Protein Science Society of Japan, Fukuoka, Japan. "Glycine-Alanine Dipeptide Repeat from C9orf72 Hexanucleotide Expansions Forms Toxic Amyloids Possessing Cell-to-cell Transmission Property".

70. Yun-Ru Chen. (June 17-22, 2012) **Gordon Research Conferences: Molecular & Cellular Neurobiology**, Hong Kong Univ. of Science and Technology, Hong-Kong, China. "Full-length human TDP-43 forms stable and toxic amyloid-like oligomers in vitro and in vivo".
71. Yun-Ru Chen. (Nov. 25-29, 2012) **The 13th FAOBMB Congress**, Bangkok, Thailand. "Spherical Gold Nanoparticles Retard Aβ40 Fibrillation and Induce Fibril Fragmentation"
72. Yun-Ru Chen. (June 12-17, 2011) **FASEB Summer Research Conferences: The Basic Origins and Medical Consequences of Protein Aggregation**, Snowmass Village, CO, USA. "Folding Stability of Amyloid-β Predominantly Determines Nucleation Kinetics in Fibrillization where Destabilization upon $Zn^{2+}$ and $Al^{3+}$ Binding Promotes Annular Protofibril Formation".
73. Chun-Lun Ni, Hoi-Ping Shi, Yu-Jen Chang, Kuo-Ging Lin, Hui-Mei Yu, and **Yun-Ru Chen***. (June 28-July 3, 2009) **FASEB Summer Research Conferences: Amyloid Fibril Formation and Protein Misfolding-Molecular Mechanisms and Cellular Effects**, Snowmass Village, CO, USA. Conformational Stability and aggregation mechanism of amyloid β in Alzheimer's disease.
74. Yun-Ru Chen. (June, 2007) **Gordon Conference: Proteins**, New Hampshire, USA. Equilibrium Folding and Aggregation Properties of Wild Type and Familial Mutants of Amyloid β in Alzheimer Disease.

## Serving as Organizing Committee or Conference Chairs:

1. IUBMB focused meeting on "Neurodegenerative Diseases", Biotech Park, Taipei, Taiwan, Feb 25-27, 2020. Main Organizer. (Meeting postponed to 2021.4.21-23)
2. TSMBM, Nov. 15-17, 2019. Chairing at session "Neurodegenerative Diseases"
3. Mini-symposium of "Frontier Research in Alzheimer's Disease", Academia Sinica, Taipei, Taiwan, Dec. 13, 2018. Organizing committee.
4. The 23rd Biophysics Conference, R.O.C., May 23-25, 2018, Taichung, Taiwan. Chairing at session: Frontiers of Protein Folding and Misfolding.
5. The 21st Biophysics Conference, R.O.C., May 7-10, 2016, Hsin-Chu,, Taiwan. Chairing at session: Frontiers of Protein Folding and Misfolding.
6. The 19th Biophysics Conference, R.O.C., May 7-10, 2014, Tainan, Taiwan. Chairing at session: Protein Folding and Misfolding.
7. The 3rd APPA (Asian-Pacific Protein Association) Conference, May 6-9, 2011, Shanghai Univ., Shanghai, China. Co-chairing at session 3: Protein Folding, Structure, and Dynamics.
8. Symposium of "Frontier of Protein Aggregation and Neurodegenerative Diseases", Taipei, Academia Sinica, Jun. 4-5, 2009. Organizing Committee.
9. PepCon-2009, Seoul, Korea. April 2-4, 2009. Co-chairing at session 3-3: Promising Protein Therapeutics for CNS Disorders/ Neurodegenerations.

## Memberships:

- Protein Society
- ISTAART (International Society to Advance Alzheimer's Research and Treatment)
- Society of Neuroscience
- APPA (Asian-Pacific Protein Association)
- Taiwan Society for Biochemistry and Molecular Biology 台灣生物化學及分子生物學會
- The Biophysics Society of Taiwan 中華民國生物物理學會
- The Neuroscience Society of Taiwan 中華民國基礎神經科學會

## Serving as President and Council Member

- President, Asia Pacific Protein Association (APPA) (2022.6-2025.7)
- Council member, Taiwanese Neuroscience Society. 台灣基礎神經科學學會理事(2020-present)
- Council member, The Biophysical Society of R.O.C. 中華民國生物物理學會理事(2016-present)
- Council member, The Taiwan Society for Biochemistry and Molecular Biology 台灣生物化學及分子生物學會理事（2015-2020; 2024-present）
- Council member, APPA (Asia Pacific Protein Association) Representative of Taiwan. (2014.5-2017.7)
- Council member, APPA (Asia Pacific Protein Association) Deputy Representative of Taiwan. (2009-2014.5)

## Grant Review

- Ministry of Science and Technology grant proposals, Taiwan
- Ministry of Science & Technology grant proposals, Taiwan
- MRC grant proposals (Medical Research Council, UK)
- Univ. of California, Davis, Pilot project grant proposal (USA)

## Journal Editorial Board

**Associate Editor**

- Frontiers in Pharmacology-Ethnopharmacology (2021.3- now)

**Journal Editorial Board**

- Frontiers in Aging Neuroscience (2019.5- now)

**Journal Referee**

- ACS Chemical Neuroscience
- ACS Nano
- Biochemistry
- BBA-Proteins and Proteomics
- Cell Chemical Biology
- Chem Com
- Frontiers in Aging Neuroscience
- Frontiers in Neuroscience
- Frontiers in Pharmacology
- International Journal of Biological Macromolecules
- JACS
- Journal of Inorganic Chemistry
- Journal of Physical Chemistry
- Nature Neuroscience
- Neurochemistry International
- Neurotherapeutics
- Protein Science
- Small
- Scientific Reports

## Trained lab members as faculty

鄧薇妮 Winny Arisandi, PhD student (2007-2015). Faculty of Biotechnology, Atma Jaya University, Indonesia

杜玲嫻 Ling-Hsien Tu, Post Doctor (2014-2016). 台灣師範大學化學系, Associate Professor, Department of Chemistry, National Taiwan Normal University

施耀翔 Yao-Hsiang Shih, Post Doctor (2015-2019). 高雄醫科大學解剖所, Associate Professor, Department of Anatomy, School of Medicine, Kaohsiung Medical University

簡儀欣 Yi-Hsin Chien, Post Doctor (2015-2017). 逢甲大學材料科學與工程學系, Assistant Professor, Department of Materials Science and Engineering, Feng Chia University