

CURRICULUM VITAE



中文姓名	曾紀綱
English Name	Tseng Chi-Kang
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Birth Date/Place	1982/05/13, Taiwan

EDUCATION & TRAINING

End of 2018	W1 professor Institute of developmental biology and neurobiology. Johannes Gutenberg university, Mainz, Germany
2018/6~present	Visiting scientist Institute of molecular biology, Mainz, Germany
2013/8~present	Research Associate Howard Hughes Medical Institute and Stowers Institute for Medical Research, Kansas City, MO, U.S.A. Supervisor: Peter Baumann
2012/07~2013/7	Academia Sinica Distinguished Postdoctoral Scholar (2 persons annually) Institute of Molecular Biology Academia Sinica, Taipei, Taiwan. Supervisor: Dr. Soo-Chen Cheng
2011/10~2012/06	Postdoctoral fellow Institute of Molecular Biology Academia Sinica, Taipei, Taiwan. Supervisor: Dr. Soo-Chen Cheng
2010/11~2011/10	Military service
2004/09~2010/07	Ph.D (I was awarded my PH.D in July of 2010) Institute of Microbiology and Immunology National Yang-Ming University, Taiwan Advisor: Dr. Soo-Chen Cheng
2000/09~2004/06	Bachelor Department of Medical Technology Chung Shan Medical University, Taiwan

REASERCH ACHIEVEMENTS AND INTEREST

My current research is focused on a fascinating RNP: telomerase. The core of telomerase is comprised of the catalytic protein subunit telomerase reverse transcriptase (TERT) and a non-coding RNA component telomerase RNA (TER). TERT copies a template within TER to replenish terminal DNA sequences that are lost from chromosome ends during each DNA replication cycle. Mutations in telomerase components cause several degenerative. My research interests lie in the areas of (1) molecular mechanisms of telomerase RNP biogenesis in different species including humans and yeast, (2) roles of RNA structure/sequence in regulating biogenesis, and (3) telomerase RNA evolution. Currently my work on human telomerase uncovered new roles of protein factors and RNA structures in 3' end maturation. My data suggest that kinetic competition is the basis of fidelity control during telomerase RNA biogenesis.

PEER-REVIEWED PUBLICATIONS

1. Chung, C.S., **Tseng, C.K.**, Lai, Y.H., Wu, N.Y., Newman A.J. and Cheng, S.C (2018). Crosslinking Analyses Revealed a Central Role for Prp8 in Positioning of Splice Sites. (submitted). **(Co-first author)**
2. **Tseng, C.K.**, Wang, H.F., Schroeder, M.R., and Baumann, P. (2018). The H/ACA complex disrupts triplex in hTR precursor to permit processing by RRP6 and PARN. **Nature communication**. (Accepted).
3. **Tseng, C. K.**, Chung, C. S., Chen, H. C., and Cheng, S. C (2017). A central role of Cwc25 in spliceosome dynamics during the catalytic phase of pre-mRNA splicing. **RNA** 23, 546-556.
4. **Tseng, C.K.**, Wang, H.F., Burns, A.M., Shroeder, M.R., Gaspiri, M., and Baumann, P. (2015). Human telomerase RNA processing and quality control". **Cell Reports** 13, 1-12.
5. **Tseng, C.K.**, and Cheng, S.C. (2013). The spliceosome catalyzes debranching in competition with reverse of the first reaction. **RNA** 19, 1-11.
6. Chen, H.C., **Tseng, C.K.**, Tsai, R.T., Chung, C.S., and Cheng, S.C. (2013). Link of NTR-mediated spliceosome disassembly with DEAH-box ATPases Prp2, Prp16, and Prp22. **Molecular and cellular biology** 33, 514-525.
7. **Tseng, C.K.**, Liu, H.L., and Cheng, S.C. (2011). DEAH-box ATPase Prp16 has dual roles in remodeling of the spliceosome in catalytic steps. **RNA** 17, 145-154.
8. Chiu, Y.F., Liu, Y.C., Chiang, T.W., Yeh, T.C., **Tseng, C.K.**, Wu, N.Y., and Cheng, S.C. (2009). Cwc25 is a novel splicing factor required after Prp2 and Yju2 to facilitate the first catalytic reaction. **Molecular and cellular biology** 29, 5671-5678.
9. **Tseng, C.K.**, and Cheng, S.C. (2008). Both catalytic steps of nuclear pre-mRNA splicing are reversible. **Science** 320, 1782-1784.
10. Tsai, R.T., **Tseng, C.K.**, Lee, P.J., Chen, H.C., Fu, R.H., Chang, K.J., Yeh, F.L., and Cheng, S.C. (2007). Dynamic interactions of Ntr1-Ntr2 with Prp43 and with U5 govern the recruitment of Prp43 to mediate spliceosome disassembly. **Molecular and cellular biology** 27, 8027-8037. **(Co-first author)**
11. Tsai, R.T., Fu, R.H., Yeh, F.L., **Tseng, C.K.**, Lin, Y.C., Huang, Y.H., and Cheng, S.C. (2005). Spliceosome disassembly catalyzed by Prp43 and its associated components Ntr1 and Ntr2. **Genes & development** 19, 2991-3003.
12. Lai, S.C., Twu, J.J., Jiang, S.T., Hsu, J.D., Chen, K.M., Chiaing, H.C., Wang, C.J., **Tseng, C.K.**, Shyu, L.Y., and Lee, H.H. (2004). Induction of matrix metalloproteinase-9 in murine eosinophilic meningitis caused by *Angiostrongylus cantonensis*. **Annals of tropical medicine and parasitology** 98, 715-724.

REMARKABLE HONORS

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| 2012 | Academia Sinica Distinguished Postdoctoral Scholarship |
| 2009 | Ray Wu Prize of Excellence in Life Sciences, Ray Wu Memorial Foundation |
| 2009 | First prize, Dr. Chien-Tien Hsu's Thesis Award at Seventeenth Symposium on Recent Advances in Cellular and Molecular Biology, Taiwan |
| 2009 | Tien-Te Lee Award-Distinguished Thesis, Tien-Te Lee Biomedical Foundation, Taiwan |
| 2009 | Award of Outstanding Thesis, Taiwan Foundation For Rare Disorders |

- 2008 Outstanding Students Conference Travel Grant, Foundation For The Advancement of Outstanding Scholarship, Taiwan
- 2008 Award of Outstanding PhD Thesis, National Yang Ming University, Taiwan
- 2007 Award of Outstanding Poster, 2007 Taiwan Yeast Biology Annual Meeting

LICENSE

- 2004 National Medical Technologist license, Taiwan

BOOK CHAPTERS

1. **Tseng, C.K.**, and Cheng, S.C. (2010). RNA splicing. **CHEMISTRY** (The Chinese Chemical Society, Taipei) 68, 249-257.

TEACHING EXPERIENCE

Lectures: RNA Biology

Seminars: Literature Review in RNA Biology, biweekly series.

SCIENTIFIC TALK IN THE INTERNATIONAL CONFERENCE

- 2018 Poster** **Chi-Kang Tseng**, Hui-Fang Wang, Morgan R. Schroeder, and Peter Baumann (2018). The multiple roles of the H/ACA complex in human telomerase RNA biogenesis. May 1-6, 2018 Troia, Portugal.
- 2016 Poster** **Chi-Kang Tseng**, Hui-Fang Wang, Duncan Tormey, Morgan R. Schroeder, and Peter Baumann (2016). Modulation of human telomerase activity by a novel mechanism. The 21st annual meeting of the RNA society. Abstract 657, June 28~July 2, 2016 Kyoto, Japan.
- 2015 Oral** **Chi-Kang Tseng**, Hui-Fang Wang, Burns AM, Peter Baumann (2015). The role of exosomes in telomerase RNA biogenesis. The 20th annual meeting of the RNA society. Abstract 76, May 26–31, 2015 University of Wisconsin Madison, U.S.A.
- 2014 Poster** **Chi-Kang Tseng** and Peter Baumann (2014). Quality control of telomerase RNA biogenesis. The 19th annual meeting of the RNA society. Abstract 278, June 3~8, 2014 Quebec City, Canada.
- 2013 Oral** **Chi-Kang Tseng**, Hui-Fang Wang, Che-Sheng Chung, Soo-Chen Cheng (2013). Versatile reaction catalyzed by the Spliceosome in a competitive manner. Eighteenth Annual Meeting of the RNA Society Abstracts 33. Congress Center, Davos, Switzerland, June 12, 2013.
- 2012 Oral** **Chi-Kang Tseng**, Soo-Chen Cheng. (2012). Spliceosome Dynamics In The Catalytic Center. Seventeenth Annual Meeting of the RNA Society Abstracts 75. University of Michigan, Ann Arbor, Michigan, May 31, 2012.
- 2010 Oral** **Chi-Kang Tseng**, Soo-Chen Cheng. (2010). Spliceosome Dynamics In The Catalytic Center. RNA Biology Abstracts 34. Cold Spring Harbor Laboratory, Cold Spring Harbor Conferences Asia, November 2, 2010.
- 2009 Oral** **Chi-Kang Tseng**, Hsiao-Chan Yeh, Soo-Chen Cheng. (2009). Spliceosome Dynamics during Catalytic Steps. RNA Symposium Abstracts 24. National Cheng Kung University, Tainan, Taiwan. February 14, 2009.
- 2008 Oral** **Chi-Kang Tseng**, Hsiao-Chan Yeh, Soo-Chen Cheng. (2008). Versatile Catalytic Potential of the Spliceosome in Competitive Pathways. Thirteenth Annual Meeting of the RNA Society Abstracts 57. Free University Berlin, Germany, July 29, 2008.
- 2007 Oral** **Chi-Kang Tseng** and Cheng, S.-C. (2007). Disassembly of Spliceosome By NTR Complex. Twelfth Annual Meeting of the RNA Society Abstracts 37. University of Wisconsin-Madison, Wisconsin, May 30, 2007.