Tsai-Kun Li, Ph.D.

Affiliation:

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Academic History:

1991	Department of Microbiology	BD in Microbiology Soochow University, Taiwan, ROC
1999	Department of Pharmacology,	PhD in Pharmacology Rutgers University & University of Medicine and Dentistry of New Jersey, USA

Professional/Scientific Career:

1987- 1990	Voluntary Research Assistant	Soochow University, Taiwan, ROC
1993- 1994	Research Assistant	Institute of Molecular Biology Academia Sinica, Taiwan, ROC
1999- 2003	Postdoctoral Fellow	Rutgers University & University of Medicine and Dentistry of New Jersey, USA
2000- 2003	Research Teaching Specialist	Rutgers University & University of Medicine and Dentistry of New Jersey, USA
2001- 2001	Visiting Scientist	Institute of Molecular Biology Academia Sinica, Taiwan, ROC
2003- 2007	Assistant Professor	Dept. & Graduate Institute of Microbiology, National Taiwan University, Taiwan, ROC
2007- 2011	Associate Professor	Dept. & Graduate Institute of Microbiology, National Taiwan University, Taiwan, ROC
2008- Now	Principal Investigator	Center for Biotechnology National Taiwan University, Taiwan, ROC
2008- Now	Chief	Division of Research and Development, Center for Biotechnology, National Taiwan University, Taiwan, ROC
2011- Now	Professor	School of Integrative and Global Majors, University of Tsukuba, Tsukuba, Japan

2011- Now	Professor	Dept. & Graduate Institute of Microbiology, National Taiwan University, Taiwan, ROC
2012- Now	Director	Office for International Affairs, NTUCM, National Taiwan University, Taiwan, ROC
2012- Now	Associate Dean	College of Medicine, National Taiwan University, Taiwan, ROC
2015- Now	Associate Editor	Journal "Genes to Cell", Japan
2015- Now	PI	NTU SPARK Program, Taiwan Supra Integration and Incubation Center
2015- Now	CEO	NTU Center for Genome Medicine, National Taiwan University, Taiwan, ROC

Awards/Professional Societies:

Topoisomerases, Topoisomerase-targeting drugs, DNA damage and repair.

- DNA topology and its biological implications
- Topoisomerases and their targeting drugs
- Repair and signaling pathways for DNA damage

Research Area/ Interests:

The research conducted in my laboratory combines both molecular and biochemical approaches toward investigating the following interrelated programs of research:

Roles of DNA topoisomerases in DNA organization: Topoisomerases are ubiquitous, essential nuclear enzymes that participate in the regulation of DNA different topological states by transient breakage and rejoining of DNA. Cellular functions of different topoisomerases are currently under investigation.

Studies on topoisomerase-mediated DNA damage: Due to its delicate act of breaking/rejoining DNA, topoisomerase is highly vulnerable while performing its enzymatic reaction on DNA. In agreement with this notion, DNA topoisomerases have been firmly established as highly effective molecular targets for antibiotics (e.g. quinolones) and anti-tumor drugs (e.g. camptothecins). Our lab also interested in understanding the molecular determinants for topoisomerase-targeting conditions.

Post-translational modification of DNA topoisomerases: Modification and proteolytic pathways have been suggested to participate in regulating functions and activities of DNA topoisomerases. For

example, ubiqutin/26S proteasome pathway has been implicated to degrade topoisomerases from cleavable complexes.

Publications * corresponding author

Selected publications (Original article, ; Review,)

1. Yeh Y-H, Wang S-W, Yeh Y-C, Hsiao H-F, Li T-K* (2016) Rhapontigenin inhibits TGF-β-mediated epithelial□mesenchymal transition via the PI3K/AKT/mTOR pathway and is not associated with HIF-1α degradation Oncol Rep. May, 35(5): 2887-95.
2. Chou S-M, Lai W-J, Hong T, Tsai S-H, Chen Y-H, Kao C-H, Chu R, Shen T-L*, Li T-K* (2015) Involvement of p38 MAPK in the Anticancer Activity of Cultivated *Cordyceps militaris*. Am. J. Chin. Med. 43(5): 1043-57.
3. Hsieh M-Y, Fan J.R., Chang H-W, Chen H-C, Shen T.-L., Teng SC, Yeh Y-H, Li T-K*. (2014) DNA topoisomerase IIIalpha cooperates with p53 in senescence and tumor-suppression. Clinical Cancer Research. 20(6): 1489-501.
4. Yeh Y-H, Yang Y-C, Hsieh M-Y, Yeh Y-C, Li T-K*. (2013) A negative feedback of the HIF-1α pathway via interferon-stimulated gene 15 and ISGylation. Clinical Cancer Research, 19(21): 5927-39.
5. Wu, C-C, Li, T-K*, Farh L, Lin LY, Lin TS, Yu YJ, Yen TJ, Chiang CW and Chan NL. (2011) Structural basis of type II topoisomerase inhibition by the anticancer drug etoposide. Science. 333:459-62.