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Research Interests

1. Genetic and molecular mechanisms involved in the longevity response to dietary restriction in *C. elegans*.
2. Anti-aging drug development by drug screening in *C. elegans*

Publications

1. Chang, Y.C., **Ching, T.T.**, and Syu, W.J. (1996) "Assaying the activity of HIV-1 integrase with DNA-coated plates", *J. of Virol. Methods*, 59, 135-140.
2. **Ching, T.T.**, Wang, D.S., Hsu, A.L., Lu, P.J., and Chen, C.S. (1999) "Identification of multiple phosphoinositide-specific phospholipases D as new regulatory enzymes for phosphatidylinositol 3,4,5-triphosphate." *J Biol Chem*. 274: 8611-8617.
3. Hsu, A.L., **Ching, T.T.**, Wang, D.S., Song, X.Q., Rangnekar, V.M., and Chen, C.S. (2000) "The cyclooxygenase-2 inhibitor celecoxib induces apoptosis by blocking Akt activation in human prostate cancer cells independently of Bcl-2." *J Biol Chem*. 275: 11397-11403.
4. Wang, D.S., **Ching, T.T.**, Pyrek, J.S., and Chen, C.S. (2000), "Biotinylated Phosphatidylinositol 3,4,5-Trisphosphate as Affinity Ligand". *Anal. Biochem*. 280: 301-307.
5. Hsu, A.L., **Ching, T.T.**, Sen, G., Wang, D.S., Bondada, S., Authi, K.S., and Chen, C.S. (2000) "A novel function of phosphoinositide 3-kinase in T-cell calcium signaling: A phosphatidylinositol 3,4,5-triphosphate-mediated Ca²⁺ entry mechanism." *J Biol Chem*. 275: 16242-16250.
6. **Ching, T.T.**, Hsu, A.L., Johnson, A.J., and Chen, C.S. (2001) "Phosphoinositide 3-kinase facilitate antigen-stimulated Ca²⁺ influx in RBL-2H3 mast cells via a phosphatidylinositol 3,4,5-triphosphate-sensitive Ca²⁺ entry mechanism." *J Biol Chem*. 276: 14814-14820.
7. **Ching, T.T.**, Lin, H.P., Oliveira, O., Lu, P.J., and Chen, C.S. (2001), "Specific Binding of the C-Terminal Src Homology 2 Domain of the p85a Subunit of Phosphoinositide 3-Kinase to Phosphatidylinositol 3,4,5-Triphosphate." *J.Biol. Chem*. 276: 43932-43938
8. Zhang, F., Tom, C.C., Kugler, M.C., **Ching, T.T.**, Kreidberg, J.A., Wei, Y., and Chapman, H.A. (2003) "Distinct Ligand Binding Sites in Integrin $\alpha 3\alpha 1$ Regulate Matrix Adhesion and Cell-cell Contact." *J Cell Biol*. 163: 177-188.
9. **Ching, T.T.**, Maunakea, A., Jun, P., Hing, C., Zardo, G., Pinkel, D., Albertson, D., Fridlyand, J., Mao, J.H., Shchors, K., Weiss, W. and Costello, J. (2005) "Epigenome Analyses using BAC Microarrays Identify Evolutionary Conservation of Tissue-specific Methylation of SHANK3." *Nature Genetics*. 37: 645-51.
10. Cadieux, B., **Ching, T.T.**, VandenBerg, S.R., and Costello, J. (2006) "Genome-wide hypomethylation in human glioblastomas associated with specific copy number alteration, methylenetetrahydrofolate reductase allele status, and increased proliferation." *Cancer Res*. 66: 8469-76.
11. **Ching, T.T.**, Paal, A., Mehta, A., Zhong, L., and Hsu, A.L. (2010) "*drr-2* encodes an eIF4H that

- acts downstream of TOR in diet-restriction-induced longevity of *C. elegans*.” *Aging Cell*. 9: 545-557.
12. **Ching, T.T.** and Hsu, A.L. (2011) “Solid plate-based dietary restriction in *Caenorhabditis elegans*.” *J Vis Exp*. 51. [<http://www.jove.com/details.stp?id=2701>].
 13. **Ching, T.T.**, Chiang, W.C., Chen, C.S., and Hsu, A.L. (2011) “Celecoxib extends *C. elegans* lifespan via inhibition of insulin-like signaling but not cyclooxygenase-2 activity.” *Aging Cell*. 10: 506-519.
 14. Chiang, W.C*, **Ching, T.T.***, Lee, H.C., and Hsu, A.L. (2012) “A complex containing DDL-1 and HSF-1 links insulin-like signaling to heat-shock response in *C. elegans*.” *Cell*. 148: 322-334(*Co-first authors)
 15. Yuan, Y.Y.*, Kadiyala, C.*, **Ching, T.T.***, Hakimi, P., Saha, S., Xu, H., Yuan, C., Mullangi, V., Wang, L., Hanson, R.W., Ewing, R., Miyagi, M., Hsu, A.L., and Feng, Z. (2012): “Enhanced energy metabolism contributes to the extended life span of calorie-restricted *Caenorhabditis elegans*.” *J Biol Chem*. 287:31414-26. (*Co-first authors)
 16. Kumsta, C., **Ching, T.T.**, Nishimura, M., Davis, A.E., Gelino, S., Catan, H.H., Yu, X., Chu, C.C., Ong, B., Panowski, S.H., Baird, N., Bodmer, R., Hsu, A.L., and Hansen M. (2014) “Integrin-linked kinase modulates longevity and thermotolerance in *C. elegans* through neuronal control of HSF-1” *Aging Cell*. 13: 419-430.
 17. Yuan, Y., Hakimi, P., Kao, C., Kao, A., Liu, R., Janocha, A., Boyd-Tressler, A., Hang, X., Alhoraibi, H., Slater, E., Xia, K., Cao, P., Shue, Q., **Ching, T.T.**, Hsu, A.L., Erzurum, S.C., Dubyak, G.R., Berger, N.A., Hanson, R.W., Feng, Z. (2016) “Reciprocal Changes in Phosphoenolpyruvate Carboxykinase and Pyruvate Kinase with Age Are a Determinant of Aging in *Caenorhabditis elegans*.” *J Biol Chem*. 291:1307-19