Name: Yvonne TAY
Current position: Principal Investigator; CSI Singapore (since 2014)
President's Assistant Professor, Department of Biochemistry, NUS (since 2014)
Office address: Centre for Translational Medicine, 14 Medical Drive, MD6-11-02L, S117599
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Employment history:
2010 – 2014 Postdoctoral fellow, Harvard Medical School and Beth Israel Deaconess Medical Center
2009 Postdoctoral fellow, Institute of Medical Biology, A*STAR
2008 Postdoctoral fellow, Experimental Therapeutics Centre, A*STAR

Academic qualifications:
2008 Ph.D., National University of Singapore, Singapore
2003 B.Sc., National University of Singapore, Singapore

Major research interests: MicroRNAs (miRNAs), competing endogenous RNAs, cancer, RNA therapeutics

Research focus: Post-transcriptional regulatory networks in cancer pathogenesis. Dr Tay's early work led to advancements into the understanding of miRNA targeting and the discovery of functional miRNA targeting in coding regions. Recently, she reported a previously uncharacterized dimension to miRNA activity, whereby transcripts can communicate with and regulate expression of the tumor suppressor PTEN by competing for shared miRNAs. Her current focus is on studying the dynamics and complexities of these interactions, and the application of this knowledge to the development of RNA therapeutics.

Awards:
2015 Young Scientist Award
2015 Singapore National Research Foundation Fellowship
2014 NUS President's Assistant Professorship
2011 Leukemia & Lymphoma Society Special Fellowship
2009 Philip Yeo Prize for Outstanding Achievement in Research
2004 A*STAR Graduate Scholarship
2002 Faculty of Science Dean's List

Selected publications:
1. Guarnerio J, Bezzi M, Jeong JC, Paffenholz SV, Berry K, Naldini MM, **Tay Y**, Francesco L, Beck AH, Pandolfi PP. (2016) Oncogenic role of aberrant fusion-circRNAs derived from cancer associated chromosomal translocations. ***Cell.*** *165(2),* 289-302.
2. Zarringhalam K, **Tay Y**, Kulkarni P, Bester A, Pandolfi PP, Kulkarni R. (2016) Identification of competing endogenous RNAs of the tumor suppressor PTEN: A probabilistic approach. *Submitted.*
3. Sanchez-Mejias A & **Tay Y**. (2015) Competing endogenous RNA networks: Tying the essential knots for cancer biology and therapeutics. ***J Hematol Oncol.*** *8,* 30.
4. **Tay Y** & Pandolfi PP. (2015) Post-transcriptional regulation of PTEN by competing endogenous RNAs. ***Methods Mol Biol.*** *Vol 1388,* 139-154.
5. Karreth FA, Reschke M, Ruocco A, Ng C, Chapuy B, Ala U, Leopold V, Seitzer N, Sjoberg M, Keane T, **Tay Y,** Langellotto F, Rodig S, Adams D, Chiarle R, Pandolfi PP. (2015) The BRAF pseudogene is a proto-oncogenic competitive endogenous RNA. ***Cell.*** *161*, 1-14.
6. **Tay Y**, Rinn J, Pandolfi PP. (2014) The multilayered complexity of ceRNA crosstalk and competition. ***Nature***. 505, 344-352.
7. **Tay Y,** Tan SM, Karreth FA, Lieberman J, Pandolfi PP. (2014) Characterization of dual PTEN and p53-targeting microRNAs identifies miR-638/Dnm2 as a two-hit oncogenic locus. ***Cell Rep.*** 8(3), 714-722.

8. **Tay Y*,** Song SJ*, Pandolfi PP. (2013) The Lilliputians and the Giant: An emerging oncogenic microRNA network that suppresses the PTEN tumor suppressor *in vivo.* ***MicroRNA*** 2(2), 127-136.
9. Wang G, Lunardi A, Zhang J, Chen Z, Ala U, Webster KA, **Tay Y**, Gonzalez-Billalabeitia E, Egia A, Shaffer DR, Carver B, Liu XS, Taulli R, Kuo WP, Nardella C, Signoretti S, Cordon-Cardo C, Gerald WL, Pandolfi PP. (2013) Zbtb7a suppresses prostate cancer through repression of a Sox9-dependent pathway for cellular senescence bypass and tumor invasion. ***Nat Genet*** 45(7), 739-746.
10. Ala U, Karreth FA, Bosia C, Pagnani A, Taulli R, Leopold V, **Tay Y**, Provero P, Zecchina R, Pandolfi PP. (2013) Integrated transcriptional and competitive endogenous RNA networks are cross-regulated in permissive molecular environments. ***Proc Natl Acad Sci U S A*** 110(18), 7154-7159.
11. **Tay Y**, Kats L, Salmena L, Weiss D, Tan SM, Ala U, Karreth F, Poliseno L, Provero P, Di Cunto F, Lieberman J, Rigoutsos I, Pandolfi PP. (2011) Coding-independent regulation of the tumor suppressor PTEN by competing endogenous mRNAs. ***Cell*** 147, 344–357.
    - Selected by Faculty of 1000
12. Karreth FA, **Tay Y**, Perna D, Ala U, Tan SM, Rust AG, DeNicola G, Webster KA, Weiss D, Perez-Mancera PA, Krauthammer M, Halaban R, Provero P, Adams DJ, Tuveson DA, Pandolfi PP. (2011) In vivo identification of tumor-suppressive PTEN ceRNAs in an oncogenic BRAF-induced mouse model of melanoma. ***Cell*** 147, 382–395.
13. Salmena L, Poliseno L, **Tay Y**, Kats L, Pandolfi PP. (2011) A ceRNA hypothesis: the Rosetta Stone of a hidden RNA language? ***Cell*** 146(3), 353-358.
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14. **Tay Y**, Ho C, Dröge P, Ghadessy FJ. (2010) Selection of bacteriophage lambda integrases with altered recombination specificity by in vitro compartmentalization. ***Nucleic Acids Res*** 38(4), e25.
15. **Tay Y***, Peter S*, Rigoutsos I, Barahona P, Ahmed S, Dröge P. (2009) Insights into the regulation of a common variant of HMGA2 associated with human height during embryonic development. ***Stem Cell Rev*** 5(4), 328-333.
16. **Tay Y**, Zhang J, Thomson AM, Lim B, Rigoutsos I. (2008) MicroRNAs to Nanog, Oct4 and Sox2 coding regions modulate embryonic stem cell differentiation. ***Nature*** 455(7216),1124-1128.
    - Selected by Faculty of 1000
17. **Tay Y***, Tam WL*, Ang YS*, Gaughwin PM, Yang HH, Wang W, Liu R, George J, Ng HH, Perera RJ, Lufkin T, Rigoutsos I, Thomson AM, Lim B. (2008) MicroRNA-134 modulates the differentiation of mouse embryonic stem cells, where it causes post-transcriptional attenuation of Nanog and LRH1. ***Stem Cells*** 26(1), 17-29.
18. **Tay Y**, Thomson AM, Lim B. (2007) MicroRNAs in embryonic stem cell differentiation and prediction of their targets. Chap 35, 476-489. In **MicroRNAs: From Basic Science to Disease Biology**, K. Appasani, ed (Cambridge University Press).
19. Miranda KC*, Huynh T*, **Tay Y***, Ang YS*, Tam WL, Thomson AM, Lim B, Rigoutsos I. (2006) A pattern-based method for the identification of microRNA binding sites and their corresponding heteroduplexes. ***Cell*** 126(6), 1203-1217.
20. **Tay Y**, Lim KS, Sheu FS, Jenner A, Whiteman M, Wong KP, Halliwell B. (2004) Do mitochondria make nitric oxide? No? ***Free Radic Res*** 38(6), 591-599.

* Co-first authors

Patents filed:

- BIDMC Provisional Patent Application 1480. MicroRNA inhibitors and their uses in disease.
    - Inventors: Pandolfi PP, **Tay Y**, Poliseno L, Salmena L.
- Singapore Patent Application No: 200907415-4. Muteins of the bacteriophage lambda integrases.
    - Inventors: Ghadessy FJ, **Tay Y**, Dröge P.