Junxia MIN M.D.& Ph.D.

Curriculum Vitae

Professor

Institute of Translational Medicine
The First Affiliated Hospital
Zhejiang University
79 Qingchun Rd, Hangzhou, Zhejiang
310058 China

Research Interests

Key Words: Cancer Translational Medicine, Targeted Therapy, Immunotherapy

Novel Target Discovery: Molecularly targeted cancer therapies are designed to specifically block the driving 'oncogenes' that sustain tumorigenesis and tumor progression while sparing normal cells. Gleevec, which targets BCR-ABL in CML, was one of the first demonstrations of this new paradigm of cancer treatment, and has clinically been proven to be more effective and less toxic than chemotherapies. To discover novel cancer therapeutic targets, our laboratory is focusing on applying integrative genomic and functional approaches. For tumor suppressor genes, such as p53, we aim to discover critical synthetic lethal nodes by employing large-scale RNAi screening. Synthetic lethal nodes are defined as genes that only become essential in the context of another mutation. Thus, it is expected that targeting synthetic lethal genes of key cancer pathways would provide wider therapeutic windows compared to cytotoxic chemotherapeutics.

Cancer Immunotherapy: It refers a strategy that harnesses the body's immune system to combat tumors. With remarkable durable-response, cancer immunotherapy was selected as the breakthrough of the Year for 2013. The recent successful story of immune-checkpoint blockade ipilimumab (Yervoy) for melanoma, and novel chimeric T cell therapy-CART19 for CLL and ALL patients, have raised hope that immunotherapy may provide oncologists new options for treatment in the future. By using what we have learned about the immune system, we aim to explore effective immunotherapeutic target for Chinese-prevalent cancer types.

Molecular Mechanism of Resistance: In addition, we are interested in understanding mechanisms of resistance in response to cancer therapies, in particular mechanisms that

circumvent response to targeted therapies. We are using primary xenograft models (PTX) to study the causal genes or pathways that account for the resistance to targeted therapies.

Cancer Network Metadata Analysis: Another area of research interest is to discover novel therapeutic approaches for cancers that currently lack of targeted therapy, such as triple-negative breast cancer (TNBC). Using network analysis in couple with genomic and epigenetic profiling data mining, we aim to define driving pathways in molecularly defined subtypes of Asian prevalent cancer.

Training &Work Experiences

2014-present Professor, Institute of Translational Medicine, Zhejiang University
2010-2014 Group Leader/Research Investigator, Oncology, Novartis
2006-2010 Postdoc Fellow, Genetics, Harvard Medical School

Education

2006 PhD. in Cancer Biology
Division of Biological Sciences,
University of Missouri-Columbia, Columbia, MO
The research projects:

- Systematically studied molecular mechanisms of resistance of anticancer drugs. Familiar with pharmacological action and resistant mechanisms of chemotherapeutic drugs
- Discovered a link between the sphingolipid metabolic pathway and platinum-based anticancer drugs.
- Developed a sensitive cell viability assay for drug screening and for studying the mechanism of action of anticancer drugs.

Honors

2014	**1000 Talents Program**	Zhejiang Province, China
2013	**Outstanding Team Leader**	Department of Oncology, Novartis
2013	**Novartis Spot Award**	Department of Oncology, Novartis
2012	**Novartis Spot Award**	Department of Oncology, Novartis
2012	**Novartis Excellent Team Leader**	Department of Oncology, Novartis 2011
	Novartis Catalyst Award	Novartis
2011	**Novartis Spot Award**	Department of Oncology, Novartis

2011	**Outstanding Performance in Drug Discovery**	Novartis
2006	**Outstanding Thesis Award**	University of Missouri-Columbia, MO
2004	**First Place Award in Poster Competition in the Life Sciences Week**	University of Missouri-Columbia, MO

Research Publications (*corresponding author,)

1) Wang H, An P, Xie E, Wu Q, Fang X, Gao H, Zhang Z, Li Y, Wang X, Zhang J, Li G, Yang L, Liu W, Min J*, Wang F*. Characterization of Ferroptosis in Murine Models of Hemochromatosis. Hepatology 2017, doi:10.1002/hep.29117.

2) Wang X, An P, Zeng J, Liu X, Wang B, Fang X, Wang F*, Ren G*, Min J*. Serum ferritin in combination with prostate-specific antigen improves predictive accuracy for prostate cancer. Oncotarget 2017. doi:10.18632/oncotarget.14977

3) An P, Jiang L, Guan Y, Wang H, Wang J, Tian Y, Yang W, Shi Y, Xue J, Min J, Wang F*. Identification of hereditary hemochromatosis pedigrees and a novel SLC40A1 mutation in Chinese population. Blood Cells, Molecules, and Diseases 2017, 63:34–36.

4) Fang X, Wang K, Han D, He X, Wei J, Zhao L, Imam MU, Ping Z, Li Y, Xu Y, Min J*, Wang F*. Dietary magnesium intake and the risk of cardiovascular disease, type 2 diabetes, and all-cause mortality: a dose–response meta-analysis of prospective cohort studies. BMC Medicine 2016, 14, 210.

5) An P, Wang H, Wu Q, Guo X, Wu A, Zhang Z, Zhang D, Xu X, Mao Q, Shen X, Zhang L, Xiong Z, He L, Liu Y, Min J*, Zhou D*, Wang F*. Elevated serum transaminase activities were associated with increased serum levels of iron regulatory hormone hepcidin and hyperferritinemia risk. Scientific Reports. 2015, 5:13106.

6) Zeng Y#, Nie C#, Min J#, Liu X# et al. Novel loci and pathways significantly associated with longevity. Scientific Reports. 2016 Feb 25;6:21243. (# co-first author)

7) Xuexian Fang, Jiayu Wei, Xuyan He, Peng An, Hao Wang, Li Jiang, Dandan Shao, Han Liang, Fudi Wang* and Min J*. Landscape of dietary factors associated with risk of gastric cancer: A systematic review and dose-response meta-analysis of prospective cohort studies. European Journal of Cancer. 2015 Dec;51(18):2820-322015.

8) Mu M, An P, Shen X, Wu Qian, Shao D, Wang H, Zhang Y, Zhang S, Yao H, Min J*, Wang F*. The dietary flavonoid myricetin regulates iron homeostasis by

suppressing hepcidin expression. Journal of Nutritional Biochemistry. 2015, in press

9) Zeng Y, Chen H, Ni T, Ruan R, Nie C, Liu X, Feng L, Zhang F, Lu J, Li J, Li Y, Tao W, Gottschalk W, Lutz M, Land K, Yashin AI, Tan Q, Yang Z, Bolund L, Qi M, Yang H, Min J, Willcox CD, Willcox B, Gu J, Hauser E, Tian XL, Vaupel JW. Interaction between FOXO1A-209 Genotype and Tea Drinking is Significantly Associated with Reduced Mortality at Advanced Ages. Rejuvenation Res. 2015 Sep 28.

10) WANG Hong-Xiao, MIN Jun-Xia* Advances in discovering anticancer agents from plant secondary metabolites and their derivatives, Chinese Bulletin of Life Sciences, 2015, Aug, 27(8).1006-19. (corresponding author)

11) An P, Zhou D, Wang H, Wu Q, Guo X, Wu A, Zhang Z, Zhang D, Xu X, Mao Q, Shen X, Zhang L, Xiong Z, He L, Min J*, Liu Y* and Wang F*. Elevated serum transaminase activities were associated with increased serum levels of iron regulatory hormone hepcidin and hyperferritinemia risk. Scientific Reports, 2015, Aug 20; 5:13106.

12) Fang XF, Wang H, An P, Min J, and Wang F*. Cardiomyocyte-specific deletion of ferroportin using MCK-Cre has no apparent effect on either cardiac iron homeostasis. International Journal of Cardiology, 2015 Dec 15;201.

13) Zhou Q., Derti A., Ruddy D., Rakiec D., Kao I., Lira M, Gibaja V, Chan H, Yang Y, Min J, Schlabach M, Stegmeier F. A chemical genetics approach for the functional assessment of novel cancer genes. Cancer Research. 2015 May 15;75(10):1949-58.

14) Wu Q, Wang H, An P, Tao Y, Deng J, Zhang Z, Shen Y, Min J*, Wang F*. HJV and HFE Play Distinct Roles in Regulating Hepcidin. Antioxidants & Redox Signaling, Antioxid Redox Signal. 2015 May 20;22(15):1325-36.

15) Huang T#, Lan L#, Fang X, An P, Min J, Wang F*. Promises and Challenges of Big Data Computing in Health Sciences. Big Data Research, 2015,2, 2–11 (Invited review)

16) Wang Y, Lee YM, Baitsch L, Huang A, Xiang Y, Tong H, Lako A, Von T, Choi C, Lim E, Min J, Li L, Stegmeier F, Schlegel R, Eck MJ, Gray NS, Mitchison TJ, Zhao JJ. The oncogenic protein kinase MELK is essential for mitotic progression in basal-like breast cancer cells. ELife. 2014 May 20;3:e01763

17) Jaeger, S,. Min, J, Nigsch, F, Camargo, M, Hutz, J. Cornett, A, Cleaver, S, Buckler, A, Jenkins, J. L. Causal Network Models for Predicting Compound Targets and Driving Pathways in Cancer. (2014) J Biomol Screen. 2014 Feb 11;19(5):791-802 (co-first author)

18) Min J, Fedele G, Zaslavsky A, Reczek E, Guney I, Strochlic D, Bronson RT, Hahn WC,Ryeom S, Loda M and Cichowski K.(2010) An oncogene-tumor suppressor

cascade drives metastatic prostate cancer by coordinately activating Ras and NF-kB. Nature Medicine, Mar;16(3):286-94 (Article)

19) Sridevi P, Alexander H, Laviad EL, Min J , Mesika A, Hannink M, Futerman AH, Alexander S. (2010) Stress-induced ER to Golgi translocation of ceramide synthase 1 is dependent on proteasomal processing. Exp Cell Res. 316(1):78-91.

20) Driessche NV, Alexander H, Min J, Kuspa A, Alexander S and Shaulsky G. (2007)Global Transcriptional Responses to Cisplatin in Dictyosteliumdiscoideum Identify Potential Drug Targets. PNAS, 104(39):15406-11

21) Min J, Mesika A, Sivaguru M, Van Veldhoven PP, Alexander H,Anthony H. Futerman AH and Alexander S. (2007) LASS1 dihydroceramide synthase induced sensitivity to cisplatin is mediated through the activation of p38 MAP kinase and is abrogated by sphingosine kinase 1.Molecular Cancer Research. 5(8):801-12 (Cover article)

22) Min J., Sridetive P., Hanigan MH., Alexander H. (2006) Sensitive cell viability assay for use in drug screens and for studying the mechanism of action of drugs in Dictyosteliumdiscoideum. Biotechniques, 41(5):591-5. (Featured article)

23) Min J., Van Veldhoven PP, Zhang L, Hanigan MH, Alexander H, Alexander S. (2005) Sphingosine-1-Phosphate Lyase Regulates Sensitivity of Human Cells to Select Chemotherapy Drugs in a p38-Dependent Manner.Molecular Cancer Research,3:287-296.

24) Min J., Traynor D., Stegner A.L, Zhang L., Hanigan M.H., Alexander H., and Alexander S. (2005) Sphingosine kinase regulates the sensitivity of DictyosteliumDiscoideumcells to the anticancer drug cisplatin. Eukaryotic Cell, 4:178-189

25) Min J, Stegner A.L, Alexander H. and Alexander S. (2004) Overexpression of sphingosine-1-phosphate lyase or inhibition of sphingosine kinase in Dictyostelium discoideum results in a selective increase in sensitivity to platinum based chemotherapy drugs. Eukaryotic Cell, 3:795-805

26) Min J., Guo J., Zhao F. and Cai D. (2003) Effect of apoptosis induced by different vitamin E homologous analogues in human hepatoma cells (HepG2), Hygiene Research, 32:131-133 (Chinese)

27) Min J., Guo J., Zhao F., Cai D.(2003) Effect of different vitamin E homologous analogues on human hepatoma cell HepG2 proliferation in vitro. Hygiene Research, 32:40-43 (Chinese)

Reviews &Book Chapters

Alexander S, **Min J**., Alexander H. (2006) Dictyostelium discoideum to human cells: Pharmacogenetic studies demonstrate a role for sphingolipids in chemoresistance**.** ***Biochim. Biophys Acta***,1760:301-309 **(review)**

Professional Research Presentations

1) **International Conference on Interdisciplinary Research on Long-term Care and Healthy Aging** (May 22-23, 2015 Hangzhou, China)
Invited speaker: Hallmarks of Interconnected Aging with Cancer
2) **The 7th AsBIC7 Conference** (Nov. 30 -Dec 5, 2014, Australia)
Invited speaker: Roadmap of Deregulated Iron Metabolic Pathways in Cancer
3) **The 5th Sino-American Symposium on Clinical and Translational Medicine** (June 22-23, 2014 Beijing, China)
Invited speaker: Translational Medicine at the Zhejiang University
4) **The Fourth International Workshop on Cancer Systems Biology (ICSB 2014)** (June 20-21, 2014 Jilin, China)
Invited speaker: The power of network analysis in discovering novel cancer therapeutics
5) **Keystone Symposia: Inflammation, Infection and Cancer joint with the conference on Immune Evolution in Cancer** (March 09- 14, 2014, Canada)
Poster presentation "Identification of Tumor-Specific Splicing Isoforms in TCGA"
6) **Gordon Research Conference, Cancer Genetics and Epigenetics** (April21- 26, 2013, Italy)
Poster presentation "DNA methylation analysis of triple-negative breast cancer"
7) **Harvard Medical SchoolGenetics Department Retreat** (May 27-29, 2008)
Oral presentation "Identifying a novel oncogenes-tumor suppressor pathway in cancer metastasis"
8) **MIT & DF/HCCLudwigCenter Retreat** (January 11, 2008)
Poster presentation "A novel tumor suppressor in prostate cancer tumorigenesis & metastasis"
9) **Colrain 20th Anniversary Meeting**(October 10-12, 2007)
Oral presentation "A novel tumor suppressor in prostate cancer tumorigenesis & metastasis"
10) **EB Annual Meeting** (April, 2005), San Diego, CA

Poster Presentation "Sphingosine-1-phosphate metabolic enzymes affect the cellular response to chemotherapeutic drugs in a p38 dependent manner"

11) **The 8th Conference of the International Union for Biochemistry and Molecular Biology (IUBMB)/ The Annual Meeting of the American Society for Biochemistry and Molecular (ASBMB) (IUBMB/ASBMB 2004: A Molecular Exploration of the Cell)** (June, 2004) Boston, MA

Poster Presentation "Modulation of sphingosine-1-phospate lyase and sphingosine kinase alter sensitivity to platinum based chemotherapy drugs"

Professional Activities

- Member, American Association for Cancer Research (2004-)
- Member, International Bioiron Society (IBIS), (2015-)
- Committee Member, PCOSS-Fellow of Yangze River Pharmaceutical Green Synergy Innovation Center (2015-)
- Committee Member, Translational Medicine Society, China (2015-)
- Member, Innovative Biologics Drug Discovery Team, Zhejiang University