



## Hansen Chen

Instructor, Neurosurgery

### Bio

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#### BIO

Hansen Chen, PhD, is an Instructor in the Steinberg Lab at Stanford University School of Medicine. His research investigates the vascular immune-metabolic mechanisms of blood-brain barrier injury after ischemic stroke, with a particular focus on how acute hyperglycemia, complement activation, and endothelial glycocalyx disruption converge to worsen neurovascular damage. By integrating mechanistic mouse models with human stroke samples and clinical biomarker analyses, his work aims to identify therapeutic targets and risk-stratification strategies for stroke patients. He is developing a translational research program centered on the metabolic-complement-vascular (MCV) axis. Beyond the bench, he contributes to stroke science communication through the Stroke journal blog and the AHA Stroke Bridge Webinar Series.

#### ACADEMIC APPOINTMENTS

- Instructor, Neurosurgery

#### HONORS AND AWARDS

- Career Development Award, American Heart Association (07-01-2024)
- Postdoctoral Fellowship, American Heart Association (01-01-2022)
- Young Investigator Award, 13th International Symposium on Healthy Aging (03/2018)
- Best Oral Presentation, The 8th Symposium for Cross-straits, Hong Kong and Macao on Free Radical Biology and Medicine (09/24/2018)
- Travel Award, 2018 World life Science (10/29/2018)
- Ph.D. studentship, University of Hong Kong (2011-2015)

#### BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Editorial Board Member, Neuroprotection (2026 - present)
- Member, Society for Neuroscience (2021 - present)
- Member, American Heart Association (2021 - present)

#### PROFESSIONAL EDUCATION

- B.Sc., Sun Yat-Sen University , Biochemistry (2011)
- PhD, University of New Mexico , Exchange student (2014)
- Ph.D., The University of Hong Kong , Medicine (2016)

#### COMMUNITY AND INTERNATIONAL WORK

- Stroke Bridge Seminar Series, Zoom

- Blogger
- Reviewer
- Reviewer
- Reviewer
- Reviewer

## LINKS

- Publons/Researcher ID: <https://publons.com/researcher/1282246/hansen-chen/>
- My ORCID: <https://orcid.org/0000-0001-9506-6894>
- My Bibliography: <https://www.ncbi.nlm.nih.gov/myncbi/1ZkoS7kaa9cUb7/bibliography/public/>
- Twitter: <https://twitter.com/Chenhsbbb>
- My Blog Posts in Stroke Journal: <https://www.ahajournals.org/action/doSearch?target=do-blog&content=blog&sortBy=Earliest&ContribAuthorPrimaryRaw=Chen%2C+Hansen&AfterYear=2023&BeforeYear=2023&startPage=&ContentGroupKey=10.1161%2Fstrokeblog>

## Research & Scholarship

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### RESEARCH INTERESTS

- Brain and Learning Sciences

### CURRENT RESEARCH AND SCHOLARLY INTERESTS

Translational Stroke Research; Blood-Brain Barrier, Brain Immune Responses

## Publications

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### PUBLICATIONS

- **HKOH-2 Series Probes for Imaging Hydroxyl Radical in Living Cells With Subcellular Precision and In Vivo** *JOURNAL OF THE CHINESE CHEMICAL SOCIETY*  
Bai, X., Deng, S., Yang, B., Chen, H., Shen, J., Yang, D.  
2026
- **Anterior Uveitis in an HLA-B27 Positive Patient Following Influenza Vaccination.** *International medical case reports journal*  
Pan, C., Woldetensaye, A. G., El Feky, D., Trong Tuong Than, N., Akhavanrezayat, A., Chen, H., Yang, M., Yang, S., Yu, Z., Hu, M., Yan, H., Hung, J. H., Nguyen, et al  
2026; 19: 582211
- **Rapid vascular glycocalyx loss and complement activation drive blood-brain barrier disruption in hyperglycemic stroke**  
Chen, H., Frank, J., Tan, C., Lee, A., Kopchock, R., Chiang, T., Kim, A., Galvan, M., Fraser, J., Dornbos, D., Aboul-Nour, H., Milson, N., Tomlinson, et al  
LIPPINCOTT WILLIAMS & WILKINS.2026
- **Optogenetic Neuronal Stimulation Modulates Cholesterol Dynamics in Post-Stroke Recovery**  
Radit, N. T., Chen, H., Uchino, H., Chiang, T., Kim, A., Lee, A., Cheng, M., Steinberg, G.  
LIPPINCOTT WILLIAMS & WILKINS.2026
- **Comprehensive immune modulation mechanisms of Angong Niuhuang Wan in ischemic stroke: Insights from mass cytometry analysis.** *CNS neuroscience & therapeutics*  
Yao, Y., Ni, W., Feng, L., Meng, J., Tan, X., Chen, H., Shen, J., Zhao, H.  
2024; 30 (7): e14849
- **Hypochlorous acid derived from microglial myeloperoxidase could mediate high-mobility group box 1 release from neurons to amplify brain damage in cerebral ischemia-reperfusion injury** *JOURNAL OF NEUROINFLAMMATION*  
Chen, S., Pan, J., Gong, Z., Wu, M., Zhang, X., Chen, H., Yang, D., Qi, S., Peng, Y., Shen, J.

2024; 21 (1): 70

- **Rapid Vascular Complement Activation: A Key Driver of Blood-Brain Barrier Disruption in Ischemic Stroke With Acute Hyperglycemia**  
Chen, H., Chiang, T., Kopchock, R., Kim, A., Tomlinson, S., Bliss, T., Cheng, M. Y., Steinberg, G.  
LIPPINCOTT WILLIAMS & WILKINS.2024
- **Natural Products for the Potential Use of Neuroprotective and Neurorestorative Effects in Stroke.** *Pharmaceuticals (Basel, Switzerland)*  
Chen, H., Liu, Q.  
2023; 16 (11)
- **Editorial: Natural products in the treatment of neurological diseases: identification of novel active compounds and therapeutic targets.** *Frontiers in pharmacology*  
Zhao, J., Wang, D., Cui, W., Chen, H.  
2023; 14: 1294625
- **Editorial: Advances in integrative medicine for neurodegenerative diseases: from basic research to clinical practice.** *Frontiers in neurology*  
Liu, S., Zheng, G., Chen, H., Li, G., Guo, X.  
2023; 14: 1197641
- **Rapid Complement Activation Induced By Acute Hyperglycemia Worsens Ischemic Stroke Outcome**  
Chen, H., Chiang, T., Kim, A., Tomlinson, S., Bliss, T., Cheng, M. Y., Steinberg, G.  
LIPPINCOTT WILLIAMS & WILKINS.2023
- **Angong Niuhuang Wan reduces hemorrhagic transformation and mortality in ischemic stroke rats with delayed thrombolysis: involvement of peroxynitrite-mediated MMP-9 activation.** *Chinese medicine*  
Chen, H., Luo, Y., Tsoi, B., Gu, B., Qi, S., Shen, J.  
2022; 17 (1): 51
- **Optogenetic Stimulation Effects On Cortico-thalamic Circuit Plasticity After Stroke**  
Chiang, T., Vahdat, S., Pendharkar, A., Harvey, S., Uchino, H., Cao, Z., Kim, A., Choy, M., Chen, H., Lee, H., Cheng, M. Y., Lee, J., Steinberg, et al  
LIPPINCOTT WILLIAMS & WILKINS.2022
- **Editorial: Blood-Brain Barrier Dysregulation and Recovery Following Brain Ischemia: Cellular Constituents, Molecular Mechanisms, and Therapeutic Strategies Enabling Successful Brain Remodeling.** *Frontiers in cellular neuroscience*  
Chen, H., Cao, Z., Gu, Y., Hermann, D. M.  
2022; 16: 968425
- **Glycyrrhetic acid induces oxidative/nitrative stress and drives ferroptosis through activating NADPH oxidases and iNOS, and depriving glutathione in triple-negative breast cancer cells.** *Free radical biology & medicine*  
Wen, Y., Chen, H., Zhang, L., Wu, M., Zhang, F., Yang, D., Shen, J., Chen, J.  
2021
- **Ischemic Postconditioning Protects Against Hemorrhagic Transformation Induced by Hyperglycemia in Ischemic Stroke**  
Chen Hansen, Cheng, M. Y., Bliss, T., Zhao Heng, Steinberg, G.  
LIPPINCOTT WILLIAMS & WILKINS.2021
- **Promotion of Momordica Charantia polysaccharides on neural stem cell proliferation by increasing SIRT1 activity after cerebral ischemia/reperfusion in rats.** *Brain research bulletin*  
Ma, J., Fan, H., Cai, H., Hu, Z., Zhou, X., Li, F., Chen, H., Shen, J., Qi, S.  
2021
- **Peroxyntirite activates NLRP3 inflammasome and contributes to hemorrhagic transformation and poor outcome in ischemic stroke with hyperglycemia.** *Free radical biology & medicine*  
Chen, H., Guan, B., Chen, S., Yang, D., Shen, J.  
2021; 165: 171-183
- **Brain-wide neural dynamics of poststroke recovery induced by optogenetic stimulation.** *Science advances*  
Vahdat, S., Pendharkar, A. V., Chiang, T., Harvey, S., Uchino, H., Cao, Z., Kim, A., Choy, M., Chen, H., Lee, H. J., Cheng, M. Y., Lee, J. H., Steinberg, et al  
2021; 7 (33)

- **Rehmapicroside ameliorates cerebral ischemia-reperfusion injury via attenuating peroxynitrite-mediated mitophagy activation.** *Free radical biology & medicine*  
Zhang, Y., He, Y., Wu, M., Chen, H., Zhang, L., Yang, D., Wang, Q., Shen, J.  
2020; 160: 526-539
- **Proteomics-Guided Study on Buyang Huanwu Decoction for Its Neuroprotective and Neurogenic Mechanisms for Transient Ischemic Stroke: Involvements of EGFR/PI3K/Akt/Bad/14-3-3 and Jak2/Stat3/Cyclin D1 Signaling Cascades** *MOLECULAR NEUROBIOLOGY*  
Chen, X., Chen, H., He, Y., Fu, S., Liu, H., Wang, Q., Shen, J.  
2020
- **A Highly Selective and Sensitive Chemiluminescent Probe for Real-Time Monitoring of Hydrogen Peroxide in Cells and Animals.** *Angewandte Chemie (International ed. in English)*  
Yang, D., Ye, S., Hananya, N., Green, O., Chen, H., Zhao, A. Q., Shen, J., Shabat, D.  
2020
- **Targeting Myeloperoxidase (MPO) Mediated Oxidative Stress and Inflammation for Reducing Brain Ischemia Injury: Potential Application of Natural Compounds** *FRONTIERS IN PHYSIOLOGY*  
Chen, S., Chen, H., Du, Q., Shen, J.  
2020; 11: 433
- **Ischemic postconditioning for stroke treatment: current experimental advances and future directions.** *Conditioning medicine*  
Chen, H., Shen, J., Zhao, H.  
2020; 3 (2): 104-115
- **Potential Natural Compounds for Preventing 2019-nCoV Infection**  
Chen, H., Du, Q.  
[www.preprints.org](http://www.preprints.org).  
2020
- **Therapeutic Targets of Oxidative/Nitrosative Stress and Neuroinflammation in Ischemic Stroke: Applications for Natural Product Efficacy with Omics and Systemic Biology.** *Pharmacological research*  
Chen, H. n., He, Y. n., Chen, S. n., Qi, S. n., Shen, J. n.  
2020: 104877
- **Glycyrrhizin Prevents Hemorrhagic Transformation and Improves Neurological Outcome in Ischemic Stroke with Delayed Thrombolysis Through Targeting Peroxynitrite-Mediated HMGB1 Signaling.** *Translational stroke research*  
Chen, H., Guan, B., Wang, B., Pu, H., Bai, X., Chen, X., Liu, J., Li, C., Qiu, J., Yang, D., Liu, K., Wang, Q., Qi, et al  
2019
- **Astragaloside VI Promotes Neural Stem Cell Proliferation and Enhances Neurological Function Recovery in Transient Cerebral Ischemic Injury via Activating EGFR/MAPK Signaling Cascades** *MOLECULAR NEUROBIOLOGY*  
Chen, X., Wu, H., Chen, H., Wang, Q., Xie, X., Shen, J.  
2019; 56 (4): 3053–67
- **Kinesin-1 Regulates Extrasynaptic Targeting of NMDARs and Neuronal Vulnerability Toward Excitotoxicity** *SCIENCE*  
Lin, R., Duan, Z., Sun, H., Fung, M., Chen, H., Wang, J., Lau, C., Yang, D., Liu, Y., Ni, Y., Wang, Z., Cui, J., Wu, et al  
2019; 13: 82-+
- **Active compounds and molecular targets of Chinese herbal medicine for neurogenesis in stroke treatment: Implication for cross talk between Traditional Chinese Medicine and Biomedical Sciences** *World Journal of Traditional Chinese Medicine*  
Chen, X., Chen, H., Shen, J.  
2019
- **Potential molecular targets of peroxynitrite in mediating blood-brain barrier damage and haemorrhagic transformation in acute ischaemic stroke with delayed tissue plasminogen activator treatment** *FREE RADICAL RESEARCH*  
Chen, H., Chen, X., Luo, Y., Shen, J.  
2018; 52 (11-12): 1220–39
- **Baicalin Attenuates Blood-Brain Barrier Disruption and Hemorrhagic Transformation and Improves Neurological Outcome in Ischemic Stroke Rats with Delayed t-PA Treatment: Involvement of ONOO<sup>-</sup>-MMP-9 Pathway** *TRANSLATIONAL STROKE RESEARCH*  
Chen, H., Guan, B., Chen, X., Chen, X., Li, C., Qiu, J., Yang, D., Liu, K., Qi, S., Shen, J.

2018; 9 (5): 515–29

- **Targeting RNS/caveolin-1/MMP signaling cascades to protect against cerebral ischemia-reperfusion injuries: potential application for drug discovery** *ACTA PHARMACOLOGICA SINICA*  
Chen, H., Chen, X., Li, W., Shen, J.  
2018; 39 (5): 669–82
- **Peroxynitrite enhances self-renewal, proliferation and neuronal differentiation of neural stem/progenitor cells through activating HIF-1 alpha and Wnt/beta-catenin signaling pathway** *FREE RADICAL BIOLOGY AND MEDICINE*  
Chen, X., Zhou, B., Yan, T., Wu, H., Feng, J., Chen, H., Gao, C., Peng, T., Yang, D., Shen, J.  
2018; 117: 158–67
- **One-Compound-Multi-Target: Combination Prospect of Natural Compounds with Thrombolytic Therapy in Acute Ischemic Stroke** *CURRENT NEUROPHARMACOLOGY*  
Chen, H., Qi, S., Shen, J.  
2017; 15 (1): 134–56
- **Baicalin Reduces Hemorrhagic Transformation of Rat Ischemic Stroke with Delayed T-PA Treatment**  
Chen, H., Shen, J.  
ELSEVIER SCIENCE INC.2016: S159
- **Glycyrrhizin Could Inhibit HMGB1-MMP-9 Signaling and Prevent Hemorrhagic Transformation in Ischemic Stroke with Delayed T-PA Treatment**  
Shen, J., Chen, H.  
ELSEVIER SCIENCE INC.2016: S167
- **Caveolin-1 Is Critical for Lymphocyte Trafficking into Central Nervous System during Experimental Autoimmune Encephalomyelitis** *JOURNAL OF NEUROSCIENCE*  
Wu, H., Deng, R., Chen, X., Wong, W., Chen, H., Gao, L., Nie, Y., Wu, W., Shen, J.  
2016; 36 (19): 5193–99
- **Targeting ONOO-/HMGB1/MMP-9 Signaling Cascades: Potential for Drug Development from Chinese Medicine to Attenuate Ischemic Brain Injury and Hemorrhagic Transformation Induced by Thrombolytic Treatment** *Integrative Medicine International*  
Chen, H., Guan, B., Shen, J.  
2016
- **Peroxynitrite Decomposition Catalyst Reduces Delayed Thrombolysis-induced Hemorrhagic Transformation in Ischemia-reperfused Rat Brains** *CNS NEUROSCIENCE & THERAPEUTICS*  
Chen, H., Chen, X., Feng, J., Liu, K., Qi, S., Shen, J.  
2015; 21 (7): 585–90
- **Momordica charantia polysaccharides could protect against cerebral ischemia/reperfusion injury through inhibiting oxidative stress mediated c-Jun N-terminal kinase 3 signaling pathway** *NEUROPHARMACOLOGY*  
Gong, J., Sun, F., Li, Y., Zhou, X., Duan, Z., Duan, F., Zhao, L., Chen, H., Qi, S., Shen, J.  
2015; 91: 123–34
- **Pros and cons of current approaches for detecting peroxynitrite and their applications** *Biomedical Journal*  
Chen, X., Chen, H., Deng, R., Shen, J.  
2014; 37
- **Targeting reactive nitrogen species: a promising therapeutic strategy for cerebral ischemia-reperfusion injury** *ACTA PHARMACOLOGICA SINICA*  
Chen, X., Chen, H., Xu, M., Shen, J.  
2013; 34 (1): 67–77

## PRESENTATIONS

- Rapid vascular glycocalyx loss and complement activation drive blood-brain barrier disruption in hyperglycemic stroke - Bugher Foundation Collaborative Symposium (2/1/2026 - 2/2/2026)
- Fragmented Stroke Knowledge and Action-Readiness Gaps in a Campus Population - Stanford University (5/22/2026 - 5/22/2026)

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- Rapid glycocalyx loss and complement activation drive blood-brain barrier disruption in hyperglycemic stroke - International Brain Barriers Society (5/2/2026 - 5/2/2026)