Stanford

Pak H. Chan

The James R. Doty Professor in Neurosurgery and Neurosciences, Emeritus

Curriculum Vitae available Online

Bio

ACADEMIC APPOINTMENTS

- Emeritus Faculty, Acad Council, Neurosurgery
- Member, Wu Tsai Neurosciences Institute

ADMINISTRATIVE APPOINTMENTS

- Director of Research, Department of Neurosurgery, Stanford University School of Medicine, (1997-2012)

HONORS AND AWARDS

- Lifetime Achievement Award, International Society for Cerebral Blood Flow & Metabolism (June 28, 2015)
- Thomas Willis Award, American Stroke Association (2008)
- James R. Doty Professor of Neurosurgery and Neurosciences, Stanford University (2007)
- Member, External Scientific Review Committee, Canadian Stroke Network (2004-2014)
- Invited Speaker and Participant, Spinal Cord Injury Workshop, National Academy of Sciences USA (May 24, 2004)
- Member, NIMH Board of Scientific Counselors (April 27-28, 2003)
- Member, NINDS Stroke Progress Review Group (January 6, 2003)
- Co-Chair, Neurovascular Protective Mechanisms, NINDS Stroke Progress Review Group (July 15-18, 2001)
- Bugher Foundation Award, American Heart Association (2001-2004)
- President, National Neurotrauma Society (2000-2001)
- Chairman, 22nd Princeton Conference on Cerebrovascular Disease (2000)
- Jacob Javits Neuroscience Investigator Award, National Institutes of Health (1997-2004)
- Member, NINDS Neurological Disorders Program Project Review A Committee (1996-2000)
- Member, Neurology A Study Section (1985-1989)
- University Scientific Achievement Scholarship, Chinese University of Hong Kong (1962-1963)
- Mencius Type A & Type B Scholarships, Chinese University of Hong Kong (1960-1961)

PROFESSIONAL EDUCATION

- BS, Chinese University of Hong Kong , Biology (1964)
- MA, UCLA , Biochemistry (1970)
- PhD, UCLA , Biology (1972)

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Neuronal death and regeneration after stroke and neural injury

Teaching

GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Neurosciences (PhD Program)

Publications

PUBLICATIONS

- **Hypoxic preconditioning enhances neural stem cell transplantation therapy after intracerebral hemorrhage in mice** *JOURNAL OF CEREBRAL BLOOD FLOW AND METABOLISM*
  Wakai, T., Narasimhan, P., Sakata, H., Wang, E., Yoshioka, H., Kinouchi, H., Chan, P. H.
  2016; 36 (12): 2134-2145

- **Postconditioning Mitigates Cell Death Following Oxygen and Glucose Deprivation in PC12 Cells and Forebrain Reperfusion Injury in Rats** *JOURNAL OF NEUROSCIENCE RESEARCH*
  Lin, H., Narasimhan, P., Liu, S., Chan, P. H., Lai, I.
  2015; 93 (1): 140-148

- **Transplantation of neural stem cells that overexpress SOD1 enhances amelioration of intracerebral** *JOURNAL OF CEREBRAL BLOOD FLOW AND METABOLISM*
  Wakai, T., Sakata, H., Narasimhan, P., Yoshioka, H., Kinouchi, H., Chan, P. H.
  2014; 34 (3): 441-449

- **The role of PARL and HtrA2 in striatal neuronal injury after transient global cerebral ischemia** *JOURNAL OF CEREBRAL BLOOD FLOW AND METABOLISM*
  Yoshioka, H., Katsu, M., Sakata, H., Okami, N., Wakai, T., Kinouchi, H., Chan, P. H.
  2013; 33 (11): 1658-1665

- **Complement component 3 inhibition by an antioxidant is neuroprotective after cerebral ischemia and reperfusion in mice** *JOURNAL OF NEUROCHEMISTRY*
  Yang, J., Ahn, H., Chang, M., Narasimhan, P., Chan, P. H., Song, Y. S.
  2013; 124 (4): 523-535

- **Prevention of JNK phosphorylation as a mechanism for rosiglitazone in neuroprotection after transient cerebral ischemia: activation of dual specificity phosphatase** *JOURNAL OF CEREBRAL BLOOD FLOW AND METABOLISM*
  Okami, N., Narasimhan, P., Yoshioka, H., Sakata, H., Kim, G. S., Jung, J. E., Maier, C. M., Chan, P. H.
  2013; 33 (1): 106-114

- **Interleukin 6-preconditioned neural stem cells reduce ischaemic injury in stroke mice** *BRAIN*
  Sakata, H., Narasimhan, P., Niizuma, K., Maier, C. M., Wakai, T., Chan, P. H.
  2012; 135: 3298-3310

- **Neural Stem Cells Genetically Modified to Overexpress Cu/Zn-Superoxide Dismutase Enhance Amelioration of Ischemic Stroke in Mice** *STROKE*
  Sakata, H., Niizuma, K., Wakai, T., Narasimhan, P., Maier, C. M., Chan, P. H.
  2012; 43 (9): 2423-?

- **Involvement of Mitogen-Activated Protein Kinase Pathways in Expression of the Water Channel Protein Aquaporin-4 after Ischemia in Rat Cortical Astrocytes** *JOURNAL OF NEUROTRAUMA*
  Nito, C., Kamada, H., Endo, H., Narasimhan, P., Lee, Y., Chan, P. H.
  2012; 29 (14): 2404-2412

- **Induction of thioredoxin-interacting protein is mediated by oxidative stress, calcium, and glucose after brain injury in mice** *NEUROBIOLOGY OF DISEASE*
  Kim, G. S., Jung, J. E., Narasimhan, P., Sakata, H., Chan, P. H.
  2012; 46 (2): 440-449

- **Release of mitochondrial apoptogenic factors and cell death are mediated by CK2 and NADPH oxidase** *JOURNAL OF CEREBRAL BLOOD FLOW AND METABOLISM*
  Kim, G. S., Jung, J. E., Narasimhan, P., Sakata, H., Yoshioka, H., Song, Y. S., Okami, N., Chan, P. H.
  2012; 32 (4): 720-730

- **Minocycline-Preconditioned Neural Stem Cells Enhance Neuroprotection after Ischemic Stroke in Rats** *JOURNAL OF NEUROSCIENCE*
  Sakata, H., Niizuma, K., Yoshioka, H., Kim, G. S., Jung, J. E., Katsu, M., Narasimhan, P., Maier, C. M., Nishiyama, Y., Chan, P. H.
  2012; 32 (10): 3462-3473

- **Role of PARL/HtrA2 Pathway in Striatal Neuronal Injury after Global Ischemia**
  Yoshioka, H., Yagi, T., Wakai, T., Fukumoto, Y., Chan, P. H., Kinouchi, H.
  KARGER.2012: 51–51

- **Neuroprotection by Interleukin-6 Is Mediated by Signal Transducer and Activator of Transcription 3 and Antioxidative Signaling in Ischemic Stroke** *STROKE*
  Jung, J. E., Kim, G. S., Chan, P. H.
  2011; 42 (12): 3574-U371

- **NADPH oxidase is involved in post-ischemic brain inflammation** *NEUROBIOLOGY OF DISEASE*
  Chen, H., Kim, G. S., Okami, N., Narasimhan, P., Chan, P. H.
  2011; 42 (3): 341-348

- **Oxidative Stress in Ischemic Brain Damage: Mechanisms of Cell Death and Potential Molecular Targets for Neuroprotection** *ANTIOXIDANTS & REDOX SIGNALING*
  Chen, H., Yoshioka, H., Kim, G. S., Jung, J. E., Okami, N., Sakata, H., Maier, C. M., Narasimhan, P., Goeders, C. E., Chan, P. H.
  2011; 14 (8): 1505-1517

- **Consistent Injury to Medium Spiny Neurons and White Matter in the Mouse Striatum after Prolonged Transient Global Cerebral Ischemia** *JOURNAL OF NEUROTRAUMA*
  Yoshioka, H., Niizuma, K., Katsu, M., Sakata, H., Okami, N., Chan, P. H.
  2011; 28 (4): 649-660

- **NADPH oxidase mediates striatal neuronal injury after transient global cerebral ischemia** *JOURNAL OF CEREBRAL BLOOD FLOW AND METABOLISM*
  Yoshioka, H., Niizuma, K., Katsu, M., Okami, N., Sakata, H., Kim, G. S., Narasimhan, P., Chan, P. H.
  2011; 31 (3): 868-880

- **Increased Survival of Transplanted Neural Stem Cells with Minocycline Pretreatment by Antioxidant Gene Expression after Ischemic Stroke in Rats** *International Stroke Conference*
  Sakata, H., Niizuma, K., Yoshioka, H., Kim, G. S., Katsu, M., Jung, J. E., Narasimhan, P., Okami, N., Tominaga, T., Chan, P. H.
  LIPPINCOTT WILLIAMS & WILKINS.2011: E94–E94

- **Hemoglobin-induced oxidative stress contributes to matrix metalloproteinase activation and blood-brain barrier dysfunction in vivo** *JOURNAL OF CEREBRAL BLOOD FLOW AND METABOLISM*
  Katsu, M., Niizuma, K., Yoshioka, H., Okami, N., Sakata, H., Chan, P. H.
  2010; 30 (12): 1939-1950

- **Oxidative stress increases phosphorylation of I kappa B kinase-alpha by enhancing NF-kappa B-inducing kinase after transient focal cerebral ischemia** *JOURNAL OF CEREBRAL BLOOD FLOW AND METABOLISM*
  Song, Y. S., Kim, M., Kim, H., Jung, B., Yang, J., Narasimhan, P., Kim, G. S., Jung, J. E., Park, E., Chan, P. H.
  2010; 30 (7): 1265-1274

- **Reperfusion and Neurovascular Dysfunction in Stroke: from Basic Mechanisms to Potential Strategies for Neuroprotection** *MOLECULAR NEUROBIOLOGY*
  Jung, J. E., Kim, G. S., Chen, H., Maier, C. M., Narasimhan, P., Song, Y. S., Niizuma, K., Katsu, M., Okami, N., Yoshioka, H., Sakata, H., Goeders, C. E., Chan, et al

2010; 41 (2-3): 172-179

- **Mitochondrial and apoptotic neuronal death signaling pathways in cerebral ischemia** *BIOCHIMICA ET BIOPHYSICA ACTA-MOLECULAR BASIS OF DISEASE*
  Niizuma, K., Yoshioka, H., Chen, H., Kim, G. S., Jung, J. E., Katsu, M., Okami, N., Chan, P. H.
  2010; 1802 (1): 92-99

- **CK2 Is a Novel Negative Regulator of NADPH Oxidase and a Neuroprotectant in Mice after Cerebral Ischemia** *JOURNAL OF NEUROSCIENCE*
  Kim, G. S., Jung, J. E., Niizuma, K., Chan, P. H.
  2009; 29 (47): 14779-14789

- **STAT3 regulates the transcription of the mouse Mn-SOD gene as a neuroprotectant in cerebral ischemic reperfusion** *24th International Symposium on Cerebral Blood Flow and Metabolism/9th International Conference on Quantification of Brain Function with PET*
  Jung, J. E., Kim, G. S., Narasimhan, P., Chan, P. H.
  NATURE PUBLISHING GROUP.2009: S565–S566

- **Down-regulation of Casein kinase 2 triggers ischemic neuronal death via AKT inhibition and ROS production after oxidative insults in mice** *24th International Symposium on Cerebral Blood Flow and Metabolism/9th International Conference on Quantification of Brain Function with PET*
  Kim, G. S., Jung, J. E., Niizuma, K., Chan, P. H.
  NATURE PUBLISHING GROUP.2009: S456–S457

- **Involvement of mitogen-activated protein kinase pathways in expression of aquaporin-4 in rat cortical astrocytes after oxygen glucose deprivation** *24th International Symposium on Cerebral Blood Flow and Metabolism/9th International Conference on Quantification of Brain Function with PET*
  Nito, C., Ueda, M., Chan, P. H., Katayama, Y.
  NATURE PUBLISHING GROUP.2009: S492–S492

- **Important role of NADPH oxidase in striatal neuronal injury after severe transient global ischemia in mice** *24th International Symposium on Cerebral Blood Flow and Metabolism/9th International Conference on Quantification of Brain Function with PET*
  Yoshioka, H., Niizuma, K., Katsu, M., Okami, N., Kim, G. S., Narasimhan, P., Kinouchi, H., Chan, P. H.
  NATURE PUBLISHING GROUP.2009: S459–S460

- **OXIDATIVE STRESS INCREASES PHOSPHORYLATION OF IKK ALPHA BY ENHANCING NIK AFTER TRANSIENT FOCAL CEREBRAL ISCHEMIA IN SOD1 KO MICE** *22nd Biennial Meeting of the International-Society-of-Neurochemistry/Asian-Pacific-Society-for-Neurochemistry*
  Song, Y., Kim, M., Kim, H., Jung, B., Narashimhan, P., Kim, G., Jung, G. J., Park, E., Chan, P.
  WILEY-BLACKWELL.2009: 202–202

- **Inhibition of NADPH oxidase is neuroprotective after ischemia-reperfusion** *JOURNAL OF CEREBRAL BLOOD FLOW AND METABOLISM*
  Chen, H., Song, Y. S., Chan, P. H.
  2009; 29 (7): 1262-1272

- **NADPH oxidase is the primary source of superoxide induced by NMDA receptor activation** *NATURE NEUROSCIENCE*
  Brennan, A. M., Suh, S. W., Won, S. J., Narasimhan, P., Kauppinen, T. M., Lee, H., Edling, Y., Chan, P. H., Swanson, R. A.
  2009; 12 (7): 857-U57

- **Faster Recovery of Cerebral Perfusion in SOD1-Overexpressed Rats After Cardiac Arrest and Resuscitation** *STROKE*
  Xu, Y., Liachenko, S. M., Tang, P., Chan, P. H.
  2009; 40 (7): 2512-2518

- **Regulation of Mn-Superoxide Dismutase Activity and Neuroprotection by STAT3 in Mice after Cerebral Ischemia** *JOURNAL OF NEUROSCIENCE*
  Jung, J. E., Kim, G. S., Narasimhan, P., Song, Y. S., Chan, P. H.
  2009; 29 (21): 7003-7014

- **Oxidative stress and mitochondrial dysfunction as determinants of ischemic neuronal death and survival** *3rd International-Society-of-Neurochemistry-Special-Neurochemistry Conference/8th International Meeting on Brain Energy Metabolism*
  Niizuma, K., Endo, H., Chan, P. H.
  WILEY-BLACKWELL.2009: 133–138

- **VEGF Stimulates the ERK 1/2 Signaling Pathway and Apoptosis in Cerebral Endothelial Cells After Ischemic Conditions** *STROKE*
  Narasimhan, P., Liu, J., Song, Y. S., Massengale, J. L., Chan, P. H.
  2009; 40 (4): 1467-1473

- **Potential Role of PUMA in Delayed Death of Hippocampal CA1 Neurons After Transient Global Cerebral Ischemia** *STROKE*
  Niizuma, K., Endo, H., Nito, C., Myer, D. J., Chan, P. H.
  2009; 40 (2): 618-625

- **The role of Akt signaling in oxidative stress mediates NF-kappa B activation in mild transient focal cerebral ischemia** *JOURNAL OF CEREBRAL BLOOD FLOW AND METABOLISM*
  Song, Y. S., Narasimhan, P., Kim, G. S., Jung, J. E., Park, E., Chan, P. H.
  2008; 28 (12): 1917-1926

- **The PIDDosome mediates delayed death of hippocampal CA1 neurons after transient global cerebral ischemia in rats** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  Niizuma, K., Endo, H., Nito, C., Myer, D. J., Kim, G. S., Chan, P. H.
  2008; 105 (42): 16368-16373

- **Role of the p38 mitogen-activated protein kinase/cytosolic phospholipase A(2) signaling pathway in blood-brain barrier disruption after focal cerebral ischemia and reperfusion** *JOURNAL OF CEREBRAL BLOOD FLOW AND METABOLISM*
  Nito, C., Kamada, H., Endo, H., Niizuma, K., Myer, D. J., Chan, P. H.
  2008; 28 (10): 1686-1696

- **Sequential release of nitric oxide, zinc, and superoxide in hypoglycemic neuronal death** *JOURNAL OF CEREBRAL BLOOD FLOW AND METABOLISM*
  Suh, S. W., Hamby, A. M., Gum, E. T., Shin, B. S., Won, S. J., Sheline, C. T., Chan, P. H., Swanson, R. A.
  2008; 28 (10): 1697-1706

- **Delayed matrix metalloproteinase inhibition reduces intracerebral hemorrhage after embolic stroke in rats** *EXPERIMENTAL NEUROLOGY*
  Copin, J., Merlani, P., Sugawara, T., Chan, P. H., Gasche, Y.
  2008; 213 (1): 196-201

- **Deleterious role of superoxide dismutase in the mitochondrial intermembrane space** *JOURNAL OF BIOLOGICAL CHEMISTRY*
  Goldsteins, G., Keksa-Goldsteine, V., Ahtoniemi, T., Jaronen, M., Arens, E., Akerman, K., Chan, P. H., Koistinaho, J.
  2008; 283 (13): 8446-8452

- **Induction of MMP-9 expression and endothelial injury by oxidative stress after spinal cord injury** *JOURNAL OF NEUROTRAUMA*
  Yu, F., Kamada, H., Niizuma, K., Endo, H., Chan, P. H.
  2008; 25 (3): 184-195

- **PIDDosome mediates delayed death of hippocampal CA1 neurons after transient global cerebral ischemia in rats.** *33rd International Stroke Conference*
  Niizuma, K., Endo, H., Nito, C., Myer, D. J., Kim, G. S., Tominaga, T., Chan, P. H.
  LIPPINCOTT WILLIAMS & WILKINS.2008: 668–68

- **Increased expression of a proline-rich Akt substrate (PRAS40) in human copper/zinc-superoxide dismutase transgenic rats protects motor neurons from death after spinal cord injury** *JOURNAL OF CEREBRAL BLOOD FLOW AND METABOLISM*
  Yu, F., Narasimhan, P., Saito, A., Liu, J., Chan, P. H.
  2008; 28 (1): 44-52

- **Reduction in oxidative stress by superoxide dismutase overexpression attenuates acute brain injury after subarachnoid hemorrhage via activation of Akt/glycogen synthase kinase-3 beta survival signaling** *JOURNAL OF CEREBRAL BLOOD FLOW AND METABOLISM*
  Endo, H., Nito, C., Kamada, H., Yu, F., Chan, P. H.
  2007; 27 (5): 975-982

- **Hypoglycemic neuronal death is triggered by glucose reperfusion and activation of neuronal NADPH oxidase** *JOURNAL OF CLINICAL INVESTIGATION*
  Suh, S. W., Gum, E. T., Hamby, A. M., Chan, P. H., Swanson, R. A.
  2007; 117 (4): 910-918

- **Reduced oxidative stress promotes NF-kappa B-mediated neuroprotective gene expression after transient focal cerebral ischemia: lymphocytotrophic cytokines and antiapoptotic factors** *JOURNAL OF CEREBRAL BLOOD FLOW AND METABOLISM*
  Song, Y. S., Lee, Y., Narasimhan, P., Chan, P. H.
  2007; 27 (4): 764-775

- **Bad as a converging signaling molecule between survival PI3-K/Akt and death JNK in neurons after transient focal cerebral ischemia in rats** *JOURNAL OF CEREBRAL BLOOD FLOW AND METABOLISM*
  Kamada, H., Nito, C., Endo, H., Chan, P. H.
  2007; 27 (3): 521-533

- **Influence of hyperglycemia on oxidative stress and matrix metalloproteinase-9 activation after focal cerebral ischemia/reperfusion in rats - Relation to blood-brain barrier dysfunction** *STROKE*
  Kamada, H., Yu, F., Nito, C., Chan, P. H.
  2007; 38 (3): 1044-1049

- **Mitochondrial translocation of p53 underlies the selective death of hippocampal CA1 neurons after global cerebral ischaemia** *8th International Symposium on Cytochrome P450 Biodiversity and Biotechnology*
  Endo, H., Saito, A., Chan, P. H.
  PORTLAND PRESS LTD.2006: 1283–1286

- **A new approach for the investigation of reperfusion-related brain injury** *8th International Symposium on Cytochrome P450 Biodiversity and Biotechnology*
  Maier, C. M., Hsieh, L., Crandall, T., Narasinnhan, P., Chan, P. H.
  PORTLAND PRESS LTD.2006: 1366–1369

- **Activation of the Akt/GSK3 beta signaling pathway mediates survival of vulnerable hippocampal neurons after transient global cerebral ischemia in rats** *JOURNAL OF CEREBRAL BLOOD FLOW AND METABOLISM*
  Endo, H., Nito, C., Kamada, H., Nishi, T., Chan, P. H.
  2006; 26 (12): 1479-1489

- **Akt/GSK3 beta survival signaling is involved in acute brain injury after subarachnoid hemorrhage in rats** *STROKE*
  Endo, H., Nito, C., Kamada, H., Yu, F., Chan, P. H.
  2006; 37 (8): 2140-2146

- **Biphasic role of nuclear factor-kappa B on cell survival and COX-2 expression in SOD1 Tg astrocytes after oxygen glucose deprivation** *JOURNAL OF CEREBRAL BLOOD FLOW AND METABOLISM*
  Lee, Y., Song, Y. S., Giffard, R. G., Chan, P. H.
  2006; 26 (8): 1076-1088

- **Mitochondrial translocation of p53 mediates release of cytochrome c and hippocampal CA1 neuronal death after transient global cerebral ischemia in rats** *JOURNAL OF NEUROSCIENCE*
  Endo, H., Kamada, H., Nito, C., Nishi, T., Chan, P. H.
  2006; 26 (30): 7974-7983

- **Evaluating therapeutic targets for reperfusion-related brain hemorrhage** *ANNALS OF NEUROLOGY*
  Maier, C. M., Hsieh, L., Crandall, T., Narasimhan, P., Chan, P. H.
  2006; 59 (6): 929-938

- **Decreased phosphorylation of bad and mitochondrial release of Smac and HtrA2/Omi contribute to neuronal apoptosis after spinal cord injury** *24th Annual National-Neurotrauma-Society Symposium*
  Yu, F., Liu, J., Sugawara, T., Chan, P.
  MARY ANN LIEBERT INC.2006: 1030–30

- **Overexpression of SOD1 in transgenic rats attenuates nuclear translocation of endonuclease g and apoptosis after spinal cord injury** *JOURNAL OF NEUROTRAUMA*
  Yu, F., Sugawara, T., Nishi, T., Liu, J., Chan, P. H.
  2006; 23 (5): 595-603

- **Mild hypoxia promotes survival and proliferation of SOD2-deficient astrocytes via c-Myc activation** *JOURNAL OF NEUROSCIENCE*
  Liu, J., Narasimhan, P., Lee, Y. S., Song, Y. S., Endo, H., Yu, F. S., Chan, P. H.
  2006; 26 (16): 4329-4337

- **Interferon-beta fails to protect in a model of transient focal stroke** *STROKE*
  Maier, C. M., Yu, F. S., Nishi, T., Lathrop, S. J., Chan, P. H.
  2006; 37 (4): 1116-1119

- **Epo protects SOD2-deficient mouse astrocytes from damage by oxidative stress** *GLIA*
  Liu, J., Narasimhan, P., Song, Y. S., Nishi, T., Yu, F. S., Lee, Y. S., Chan, P. H.
  2006; 53 (4): 360-365

- **Modulation of proline-rich Akt substrate survival signaling pathways by oxidative stress in mouse brains after transient focal cerebral ischemia** *STROKE*
  Saito, A., Hayashi, T., Okuno, S., Nishi, T., Chan, P. H.
  2006; 37 (2): 513-517

- **Activated Akt/GSK3 beta signaling induces neuronal survival after subarachnoid hemorrhage in rats** *31st International Stroke Conference*
  Endo, H., Yu, F. S., Nito, C., Kamada, H., Chan, P. H.
  LIPPINCOTT WILLIAMS & WILKINS.2006: 725–26

- **NF-kappa B-mediated neuroprotective gene expression in SOD1 Tg mice after transient focal cerebral ischemia: Lymphocytotrophic cytokines and anti-apoptotic factors** *31st International Stroke Conference*
  Song, Y. S., Lee, Y. S., Chan, P. H.
  LIPPINCOTT WILLIAMS & WILKINS.2006: 682–82

- **Metalloporphyrin-based superoxide dismutase mimic attenuates the nuclear translocation of apoptosis-inducing factor and the subsequent DNA fragmentation after permanent focal cerebral ischemia in mice** *STROKE*
  Lee, B. I., Chan, P. H., Kim, G. W.
  2005; 36 (12): 2712-2717

- **Akt/Bad signaling and motor neuron survival after spinal cord injury** *NEUROBIOLOGY OF DISEASE*
  Yu, F. S., Sugawara, T., Maier, C. M., Hsieh, L. B., Chan, P. H.
  2005; 20 (2): 491-499

- **Superoxide dismutase 1 overexpression reduces MCP-1 and MIP-1 alpha expression after transient focal cerebral ischemia** *JOURNAL OF CEREBRAL BLOOD FLOW AND METABOLISM*
  Nishi, T., Maier, C. M., Hayashi, T., Saito, A., Chan, P. H.
  2005; 25 (10): 1312-1324

- **Oxidative stress transiently decreases the IKK complex (IKK alpha, beta, and gamma), an upstream component of NF-kappa B signaling, after transient focal cerebral ischemia in mice** *JOURNAL OF CEREBRAL BLOOD FLOW AND METABOLISM*
  Song, Y. S., Lee, Y. S., Chan, P. H.
  2005; 25 (10): 1301-1311

- **Leukocyte-derived matrix metalloproteinase-9 mediates blood-brain barrier breakdown and is proinflammatory after transient focal cerebral ischemia** *AMERICAN JOURNAL OF PHYSIOLOGY-HEART AND CIRCULATORY PHYSIOLOGY*
  Gidday, J. M., Gasche, Y. G., Copin, J. C., Shah, A. R., Perez, R. S., Shapiro, S. D., Chan, P. H., Park, T. S.
  2005; 289 (2): H558-H568

- **Neuroprotection by hypoxic preconditioning involves oxidative stress-mediated expression of hypoxia-inducible factor and erythropoietin** *STROKE*
  Liu, J., Narasimhan, P., Yu, F. S., Chan, P. H.
  2005; 36 (6): 1264-1269

- **Overexpression of human copper/zinc-superoxide dismutase in transgenic animals attenuates the reduction of apurinic/apyrimidinic endonuclease expression in neurons after in vitro ischemia and after transient global cerebral ischemia** *JOURNAL OF NEUROCHEMISTRY*
  Narasimhan, P., Sugawara, T., Liu, J., Hayashi, T., Noshita, N., Chan, P. H.
  2005; 93 (2): 351-358

- **Modulation of p53 degradation via MDM2-mediated ubiquitylation and the ubiquitin-proteasome system during reperfusion after stroke: role of oxidative stress** *JOURNAL OF CEREBRAL BLOOD FLOW AND METABOLISM*
  Saito, A., Hayashi, T., Okuno, S., Nishi, T., Chan, P. H.
  2005; 25 (2): 267-280

- **Effect of NF kappa B siRNA on SOD1 transgenic mice astrocytes during oxygen glucose deprivation** *30th International Stroke Conference*
  Lee, Y. S., Song, Y. S., Wang, J., Giffard, R. G., Chan, P. H.
  LIPPINCOTT WILLIAMS & WILKINS.2005: 468–68
- **Oxidative stress and neuronal death/survival signaling in cerebral ischemia** *Satellite Symposium on Oxidative Mechanisms in Neurodegenerative Disorder*
  Saito, A., Maier, C. M., Narasimhan, P., Nishi, T., Song, Y. S., Yu, F. S., Liu, L., Lee, Y. S., Nito, C., Kamada, H., Dodd, R. L., Hsieh, L. B., Hassid, et al
  HUMANA PRESS INC.2005: 105–16
- **Mitochondrial dysfunction and oxidative stress as determinants of cell death/survival in stroke** *2nd Scientific Meeting of the Asian-Society-for-Mitochondrial-Research-and-Medicine*
  Chan, P. H.
  NEW YORK ACAD SCIENCES.2005: 203–209
- **Damage to the endoplasmic reticulum and activation of apoptotic machinery by oxidative stress in ischemic neurons** *JOURNAL OF CEREBRAL BLOOD FLOW AND METABOLISM*
  Hayashi, T., Saito, A., Okuno, S., Ferrand-Duke, M., Dodd, R. L., Chan, P. H.
  2005; 25 (1): 41-53
- **Future targets and cascades for neuroprotective strategies** *24th Princeton Conference on Cerebrovascular Disease*
  Chan, P. H.
  LIPPINCOTT WILLIAMS & WILKINS.2004: 2748–50
- **Oxidative stress affects the integrin-linked kinase signaling pathway after transient focal cerebral ischemia** *STROKE*
  Saito, A., Hayashi, T., Okuno, S., Nishi, T., Chan, P. H.
  2004; 35 (11): 2560-2565
- **Mitochondria and neuronal death/survival signaling pathways in cerebral ischemia** *NEUROCHEMICAL RESEARCH*
  Chan, P. H.
  2004; 29 (11): 1943-1949
- **The c-Jun N-terminal protein kinase signaling pathway mediates Bax activation and subsequent neuronal apoptosis through interaction with Bim after transient focal cerebral ischemia** *JOURNAL OF NEUROSCIENCE*
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