CURRICULUM VITAE

ICHIRO NAKANO, M.D., Ph.D.

Professor

Director, Office of Laboratory Research

Departments of Neurosurgery, Neurology, Cell Developmental and

Integrative Biology, Biochemistry and Molecular Genetics

Co-Leader, Neuro-Oncology Program, Comprehensive Cancer Center

University of Alabama at Birmingham

2017

CURRICULUM VITAE

NAME Ichiro Nakano, MD, PhD

CITIZENSHIP United States of America

HOME 2409 Magolia Cove, Birmingham, AL 35243

(205) 572-9703

RANK/TITLE Professor

Director, Office of Laboratory Research

Departments of Neurosurgery, Neurology, Cell Developmental and

Integrative Biology, Biochemistry and Molecular Genetics

Co-Leader, Neuro-Oncology Program, Comprehensive Cancer CenterCell, Development and Integrative Biology; Pediatrics

OFFICE Ichiro Nakano, MD

Department of Neurosurgery

University of Alabama at Birmingham

1824 6th Ave. South, WIT 401F

Birmingham, AL 35294

(205) 996-0071

FAX 205-975-8439

EMAIL [inakano@uabmc.edu](mailto:inakano@uabmc.edu)

LANGUAGES English, Japanese

#### HOSPITAL University of Alabama Hospital, Birmingham, AL. 2015-Present

#### EDUCATION

1987-1993 Medical School, Kyoto University Graduate School of Medicine

1997-2001 Graduate School, Kyoto University Graduate School of Medicine

MILITARY None

LICENSURE

1993 Medical Licensure certified by the Japan Medical Association

2006 Restricted Medical License by the Medical Board of California (under the program of 2113 for foreign medical doctors, effective in the UCLA Medical Center)

2006 USMLE Step 1 and 2

2008 USMLE Step 3

2009 Training Medical License by the State Medical Board of Ohio

2012 Medical Licensure certified by the Ohio Medical Board (No. 099066)

2015-present Limited Licensure certified by the Alabama Medical Board (No. L.4206DP)

BOARD CERTIFICATION

2001 Japanese Board of Neurological Surgery (# 5492)

CLINICAL TRAINING AND RESEARCH TRAINING

1993 Neurosurgery residency, Department of Neurosurgery, Kyoto University

School of Medicine

1993-1996 Neurosurgery residency, Department of Neurosurgery, Kitano Hospital (affiliated to Kyoto University School of Medicine)

1996-1997 Neurosurgery residency, Department of Neurosurgery, Hyogo Prefectural Tukaguchi Hospital (affiliated to Kyoto University School of Medicine) – Completion of clinical training in residency (Department of Neurosurgery, Kyoto University School of Medicine, Chair: Dr. Haruhiko Kikuchi)

1997-2001 Staff neurosurgeon, affiliated hospitals to Kyoto University School of Medicine

2001 Staff neurosurgeon, Department of Neurosurgery, Kishiwada City Hospital (affiliated to Kyoto University School of Medicine)

2002-2005 Postdoctoral fellow, Department of Pharmacology, UCLA

2006-2009 Clinical Instructor, Division of Neurosurgery, Departments of Surgery and Pediatrics, UCLA (Supervisor: Dr. Neil Martin)

2009-2012 Clinical Neurosurgery Fellowship (neuro-oncology surgery, Supervisor: Dr. Antonio E. Chiocca), the Ohio State University

ACADEMIC AND ADMINISTRATIVE APPOINTMENTS

2016-present co-Leader, Neuro-Oncology Program, Comprehensive Cancer Center, UAB

2015-present Member, UAB Comprehensive Cancer Center’s Clinical Trial Protocol

Review Committee

2015-present Co-Director, Brain Tumor SPORE, UAB

Director, Office of Laboratory Research, UAB

2015-present Professor, Departments of Neurosurgery, Cell Developmental and

Integrative Biology, Biochemistry and Molecular Genetics, UAB

2009-2015 Associate Professor, Department of Neurological Surgery, OSU

2009-2015 Director, Neural Cancer Stem Cell Program, OSU

ADJUNCT ASSOCIATE PROFESSOR POSITION

2015-present Department of Neurosurgery, Osaka City College, Japan

VISITING PROFESSOR/FACULTY POSITIONS

2010-present Department of Neurosurgery, Xi’an Jeongton University, China

2013-present Department of Neurosurgery, Osaka Medical College, Japan

2014-present Department of Neurosurgery, Kansai Medical College, Japan

2016-present Department of Neurosurgery, Ehime University, Japan

CLINICAL INTERESTS

Brain tumors

Functional Mapping

Intraoperative MRI

Fluorescence-guided brain surgery

Minimally-invasive surgery

Microvascular decompression

RESEARCH INTERESTS

Molecular characterization of brain tumor stem cells

Therapy development for brain tumors

Phase I/II Clinical Trial for malignant brain tumors

Molecular mechanism of therapy resistance of brain tumors

Genetic mechanism for ce0ll fate decisions in neural stem cells

PERSONAL STATEMENT

By training, I am an academic neurosurgeon conducting both brain tumor translational research and clinical brain tumor surgery. As a physician, I surgically treat patients with brain tumors. As a scientist, I focus on the molecular characterization of brain cancer heterogeneity and plasticity and translate that knowledge to cancer therapeutics. My research is highlighted with the discovery of brain cancer stem cells, published in PNAS in 2003, and the discovery of glioblastoma subtype-specific cancer stem cells, published in PNAS, Cancer Cell in 2013, Cancer Cell in 2016, and JCI in 2017. As of July 2017, I have published more than 105 peer-reviewed research and review articles. I currently hold 7 NIH grants as a PI or co-I (6 R01s and 1 R21). All of these projects aim to study various molecular mechanisms that drive brain cancer aggressiveness, heterogeneity, therapy resistance and development.

In October 2015, I was recruited to the UAB Department of Neurosurgery. Since I joined UAB, I have thoroughly integrated myself into the UAB brain tumor program and have taken on major leadership roles. For example, I serve as a co-Leader in the Neuro-Oncology Program in UAB Comprehensive Cancer Center. Under this mechanism, I aim to be among the national and international leaders in therapeutic development for brain cancers. My research projects are extensively supported by many collaborations and I have assembled neuro-oncology scientists and physicians covering various and broad expertise into my team. We share the mission to identify novel and effective therapies for malignant brain tumors as a result of our collaborative work.

My long-term goal is to make visible impact on prognosis of cancer patients by developing innovative and effective therapies. I continue to devote myself towards improving the outcomes of patients by developing effective therapies for this devastating disease in collaboration with my collaborators including basic scientists, oncologists, pathologists, and neurosurgeons.

REPORT OF CLINICAL ACTIVITIES DURING 2009-2012

*MAJOR AREAS OF CLINICAL PRACTICE* are in brain tumor surgery and involve patients with benign and malignant tumors of the central nervous system. The office practice is in Doan Hall within the Ohio State University Medical Center/Arthur G. James Cancer Hospital (OSUMC/James) under the supervision of the Chair of Department of Neurosurgery, Dr. Antonio E Chiocca. Patients are seen within this office setting, in the emergency room of the hospital, and in in-patient consultation. Neurosurgical consultation is also provided to requesting physicians at outside hospitals. Neurosurgical operative procedures are performed at OSUMC.

*PATIENT LOAD:* During the neurosurgery brain tumor fellowship, patients are seen every Tuesday, Wednesday, or Thursday; on average, approximately 5-10 new and some follow-up patients are seen each week. Operative procedures are performed on Tuesdays, and Fridays and number approximately 4 per week (average). Approximately 3 to 4 patients per day are assigned. The total number of operative cases performed during the fellowship was approximately 250.

REPORT OF CLINICAL ACTIVITIES DURING 2015-2016

Following the clinical training in the Department of Neurosurgery at OSU, I completed one year of credentialing confirmation under Dr. James M. Markert, Chair of the Department of Neurosurgery at UAB. During this period, I performed 76 operative procedures, all of which were brain tumor cases.

REPORT OF CLINICAL ACTIVITIES SINCE 2016

*MAJOR AREAS OF CLINICAL PRACTICE* are in brain tumor surgery and involve patients with benign and malignant tumors of the central nervous system. I see outpatients in The Kirklin Clinic at the UAB Main Hospital, assigned for one day per week. I perform neurosurgical operative procedures in the Operation Room in the UAB Main Hospital with the block time of one day per week.

ACTIVITIES OF THERAPY DEVELOPMENT/TRANSLATIONAL RESEARCH

**Phase 0 Clinical Trial for Recurrent Glioblastoma with BGB324**

One of the translational research projects in my lab is to investigate the roles of the Receptor Tyrosine Kinase AXL in glioblastoma and glioma stem cells (Cheng et al., *Stem Cell Reports* 2015). In this project, my lab made a contract with the biotechnology company *BerGenBio* in Norway, supporting us by providing the small molecule AXL inhibitor BGB324 for the purpose of pre-clinical evaluation and to run the Phase 0 Trial for Glioblastoma. This project was selected as Project 1 in the SPORE, submitted in September 2016. In parallel, I presented this project to design a Phase 0 Trial in the American Brain Tumor Consortium annual meeting at Baltimore, MD in December 2016. The Letter of Intent is scheduled to be sent to the Cancer Therapy Evaluation Program (CTEP) in NCI by the end of 2016. I plan to lead this Trial with Dr. Burt Nabors, the Chief of the Neuro-Oncology Program in the Comprehensive Cancer Center at UAB, as co-PI.

**Other agents in the pipeline**

From our recent publications, we identified several novel molecular targets and potential lead targeting compounds for glioblastoma and glioma stem cells. One of them is the HDAC inhibitor AR42. This small molecule compound was provided by the biotechnology company *Arno* in Columbus, OH. *Arno* supports my lab to perform both pre-clinical evaluation using some brain tumor models and to develop an early phase clinical trial for glioblastoma. Currently, AR42 is under Phase 0 for Acoustic Schwannoma and Meningioma (Harvard) and Phase 1 for AML, CLL, Multiple Myeloma (Cincinnati Children’s Hospital and some others). The current status of our study for glioblastoma therapy development is at the pre-clinical evaluation stage. This project will be considered for submission as a potential Development project in the SPORE as well.

The other molecular targets that we are studying as the ongoing research projects include MELK (serine/threonine kinase), EZH2 (Histone Methyltransferase), Aldehyde Dehydrogenase (ALDH), MLK4 (serine/threonine kinase) and NEK2 (serine/threonine kinase). My lab has the lead small molecule compound for each of these target molecules. The main disease for therapy development is glioblastoma (collaboration with Dr. Nabors) and the second disease target is breast cancer brain metastasis (collaboration with Dr. Andres Forero-Torres, medical oncologist / Director of Breast Cancer Program at UAB).

HONORS AND AWARDS

2003 The Jules Spivak Memorial Scholarship Award

2004 Fine Science Tools Postdoctoral Award from Brain Research Institute at

UCLA

2006 Journal of Neuro-Oncology Award (in the Annual Meeting of the AANS,

San Francisco)

2007 Clinical Symposium Chair. “Brain tumors and Stem Cells”. UCLA Neurosurgery / Institute for Stem Cell Biology and Medicine

2008 American Brain Tumor Association Young Investigator Award (in the Annual Meeting of the AANS, Chicago)

2009 National Brain Tumor Translational Research Investigator Award (in the Annual Meeting of the CNS, New Orleans)

2012 American Brain Tumor Association Translation Research Award

CONFERENCE ACTIVITIES

2007 Distinguished Speaker Award. Hamamatsu University School of Medicine

2016 co-Chair, Cancer Stem Cell Session, 21st International Conference on Brain Tumor Research and Therapy, Okinawa, Japan

2016 Invited International Speaker, Annual meeting for the Japan Neurosurgery Society, Fukuoka, Japan

2016 Session co-Chair, Early Morning Lecture, Annual Meeting for the Society for Neuro-Oncology, San Antonio, Arizona

2017 Panelist for Breakfast Seminar, The Spectrum of Adjuvant Therapy for Brain Tumors, Annual Scientific Meeting, American Association of Neurological Surgeons, Los Angeles

PROFESSIONAL SOCIETY MEMBERSHIPS

International Member, Congress of Neurological Surgeons (the USA)

International Member, American Association of Neurological Surgeons

Member, American Association of Neurological Surgeons

Member, Society for Neuro-Oncology

Member, Congress of Neurological Surgeons (Japan)

Member, Society for Neuroscience

Member, Japan Neurosurgical Society

Advisor Faculty Member, Medical Scientist (MD/PhD) Program, OSU

Mentoring Faculty, Molecular, Cellular, and Developmental Biology Program, OSU

Advisor Faculty Member, Neuroscience Graduate Studies Program, OSU

Advisor Faculty, Integrated Biomedical Science Graduate Program, OSU

Program Planning Committee Members, World Federation of Neuro-Oncology/SNO

Annual Meeting, 2013, OSU

Faculty member, Solid Tumor Biology Program, James Comprehensive Cancer Center,

OSU, 2015

#### EDITORIAL POSITIONS, BOARDS, AND PEER-REVIEW SERVICE

*Editorial Board Member:*

PLoS One

Advances in Neuroscience

American Journal of Stem Cells (Senior Editor)

Behavioral Neurology

Journal of Stem Cell Research and Transplantation

Journal of Stem Cells Research, Development and Therapy (Eminent Editor)

Imaging Journal of Clinical and Medical Sciences

Aperito Journal of Surgery and Anesthesia

Free Radical Research

Cancer Science

Stem Cell and Translational Investigation

*Review for Journal Publications:*

Journal of Neuroscience Research

Medical Science Monitor

Neurobiology of Disease

Pediatric Research

Expert Review of Anti-Cancer Therapy

Journal of Neuro-Oncology

Future Neurology

Cancer Science

Journal of Biochemistry

Neuron

Experimental Neurology

Surgical Neurology

Cancer Cells

Journal of Neurosurgery

Oncogene

Journal of Neuroscience

PLoS ONE

Journal of Carcinogenesis and Mutagenesis

Stem Cells

Clinical Cancer Research

Stem Cell Research

American Journal of Pathology

Journal of Molecular Diagnostics

Stem Cells Translational Research

Neurosurgery

Journal of Molecular Medicine

Cancer Letters

Cell Proliferation

Medical Principles and Practice

Neuro-Oncology

PNAS

Science Translational Medicine

Cancer Research

Oncotarget

REVIEW FOR GRANTS (NATIONAL):

National Institute for Health, Study Section of Basic Mechanism of Cancer Therapeutics (*ad hoc* member) July, 2014

National Institute for Health, NCI Exploratory/Developmental Research Grants (NCI Omnibus R21) and NCI Small Grants Program (NCI Omnibus R03), Nov, 2014

National Institute for Health, Cancer Molecular Pathobiology Study Section (CAMP), SEP R01 Review, Nov 2014

National Institute for Health, National Cancer Institute Initial Review Group; Subcommittee I—Transition to Independence. K01, K08, K25, February 2015

National Institute for Health, 2015/05 ZCA1 SRB-V (M1) S, OMNIBUS SEP 3 R03 & R21 ZCA1 SRB-V (M1), March 2015

National Institute for Health, National Cancer Institute, Special Emphasis Panel/Scientific Review Group 2015/05 ZRG1 OBT-Z (55) R, April 2015

American Cancer Society, Review Committee, Differentiation and Development in Cancer, June 2015

Review Panel, Discovery Grant, American Brain Tumor Association, 2016

NIH/P01 Study Section, Special Emphasis Panel, Bethesda, MD, June 2016

NIH/R01 Study Section, Clinical Neuroimmunology and Brain Tumors, Bethesda, MD, Nov 2016

NIH/R01 Study Section, Cancer Health Disparities, Bethesda, MD, Nov 2016

NCI R03 & Clinical and Translational R21: SEP-8 Review Committee, Bethesda, MD, 2017

NINDS Special Emphasis Panel: ZNS1-SRB (J16) “NINDS R35 Review” 2017

REVIEW FOR GRANTS (INTERNATIONAL):

Medical Research Council, UK, 2013-present

World Cancer Research Fund International, UK, 2014-present

REVIEW FOR ABSTRACTS:

Annual Meeting, The Society of Neuro-Oncology, 2012

Annual Meeting, The Society of Neuro-Oncology, 2013

Annual Meeting, 21st International Conference on Brain Tumor Research and Therapy,

Okinawa, Japan, 2016

Annual Meeting, The Society of Neuro-Oncology, 2016

Annual Meeting, The Society of Neuro-Oncology, 2017

#### PATENT / INVENTION REPORT

1. Cancer Stem Cells. Serial #: 60/671,696 (Kornblum HI, Geschwind DH, Nakano I)

2. Submitted provision patent (Tech ID #10158): A Novel Anti-Brain Tumor Agent, Compound 1

3. Submitted provision patent (Tech ID #10160): Platform to Discover Novel Kinase Targeting Cancer Stem Cells in Brain Tumors with Structure-Based Computational Drug Design

4. Combined treatment of cancer with benzo[e]pyridoindoles and DNA-damaging agents (10% co-ownership) (Primary Institute: Institute Curie, France), June 2010

5. LLP-3 as a novel inhibitor for Survivin/Ran complex in cancer stem cells. (50% co-ownership) (Primary Institute: OSU), September 2012 (ongoing process)

6. Klarquist Ref. No. 8123-90793-01, For       ALDH1A3 AS A BIOMARKER AND THERAPEUTIC TARGET FOR HIGH-GRADE GLIOMA, Application No. 61/819,361, filed May 3, 2013, Country: United States of America

MEDICAL CONSULTING ACTIVITIES

*Celgene*, Inc., 2009-2013

*StemCycle*, Inc. 2014-present

SPONSORED RESEARCH

*ArrienPharma,* Inc., 2013

THERAPY DEVELOPMENT

Novel HDAC inhibitor AR42 for Phase I trial for advanced cancers including glioblastoma.

Role: co-Investigator, 2013

RESEARCH SUPERVISION

Current

Assistant Professors

2016-present Chang-Hyuk Kwon, PhD

Project: Single cell analysis to determine GBM heterogeneity

2016-present Tatsuya Ozawa, MD, PhD

Project: Therapy-induced plasticity of glioma stem cells

Postdoctoral Fellows

2013-present Mutsuko Minata, MD, PhD

Project: Radioresistance in glioma stem cells and therapy development

2017-present Kyung-don Kang, PhD

Research Associates

2015-present Jun Wang, PhD

2015-present Svetlana Komarova, PhD

2016-present Shinobu Yamaguchi, PhD

Visiting Scientists

2016-present Heba Alsheikh, MBchB, MSc

Project: breast cancer brain metastasis

2016-present Anutosh Ganguly

2016-present Hai Yu, PhD.

Project: Therapy development for glioblastoma

2017-present Suojun Zhang, PhD

Graduate Student

2016-present Sonyia Bastola – UAB

Project: inter-cellular communication in glioblastoma

Previous

Postdoctoral Fellows

2006-2008 Kuniyasu Saigusa, MD, PhD (current: Professor in Neurosurgery, Tokyo Medical and Dental University)

2008 Xiangdong Deng, PhD

2008-2009 Akihito Inagaki, PhD

2008-2010 Yuko Nakamura-Okemoto, PhD

2009-2011 Takeshi Miyazaki, MD, PhD. (current: Assistant Professor in Dept. of Neurosurgery, Shimane University)

2009-2010 Mayumi Jijiwa, MD, PhD

2010-2012 Chunyu Gu, MD. (current: Clinical staff, Neurosurgery, China)

International Medical Graduates

2010-2011 Ryosuke Yamada, MD

2010-2011 Habibe Demir, MD, (current: Clinical Resident in Dept. of

Pathology, OSU)

2011 Deepti Purohit, MD, (current: Clinical Resident, Newark Beth

Israel Medical Center in Pediatrics)

2011-2012 Hacer Guvenc, MD, research fellow (current: Clinical Resident, Internal Medicine)

2012 Yeshavanth Kumar Banasavadi-Siddegowda, PhD, postdoctoral fellow

2011-2013 Ping Mao, MD (post-training: Clinical fellow, Neurosurgery, Xi’an Jeontong Medical University)

2012-2013 Samah Abou-Sharieha, PhD

2013-2014 Claudia LL Valentim, PhD

Project: Characterization of Compensatory Proliferation in Glioblastoma

2013-2016 Sunghak Kim, PhD (current: Assistant Professor, Chonnam National University

Project: Characterization of MLK4 serin/threonine kinase in glioma stem cells

2013-2016 Peng Cheng, MD (current: staff neurosurgeon, China National Medical School)

Project: RNAi screen for kinases essential for glioma stem cells

2014-2015 Natsuko Kondo, MD, PhD (current: Assistant Professor, Kyoto Univerisity)

Project: Inter-cellular communication of proneural and mesenchymal glioma cells

2014-2016 Jia Wang, MD (current: staff neurosurgeon, Xi’an Jeongton Medical School)

Project: Essential kinases in glioblastoma and development of therapy resistance

2014-2017 Marat Pavliukov, PhD

Project: Splicing factors in glioblastoma and glioma stem cells

2016-2017 Mayuko Nishi, PhD

Project: Determinant of cell fate in glioblastoma

Visiting Scientists

2009-2014 Kaushal Joshi

Project: Characterization of the molecular determinants for Proneural-to-Mesenchymal Transition of glioma stem cells

2015-2016 Sunghak Kim, PhD

2016-2017 Minxue Lian

2016-2017 Hirokazu Sadahiro, MD, PhD

Project: Therapy development for glioblastoma

2016 Zhou Xhang

2016 Vito Coviello

Neurosurgery Residents

2013-2015 Ahmed Mohyeldin, MD, PhD

Project: Tumor metabolism for cellular hierarchy in Glioblastoma

Medical Students

2011 Aalap Narichania, medical student, OSU

2012 Luke Smith, medical student, OSU

2012 Christopher Hong, medical student, OSU

2013-14 Ranjit Ganguly, medical student, OSU

Undergraduate Research Courses

Neuroscience 4998 May Session, OSU – 19528

Neuroscience 4998 7Wk Session, OSU – 14119

MENTORING ACHIEVEMENTS

1. Landacre Honor Society: Aalap Narichania (medical student, OSU), Advisor: Ichiro Nakano, 2010

2. The Fourth Annual Neuroscience Signature Program Poster Day Award: Kaushal Joshi, Advisor: Ichiro Nakano. “MELK-dependent phosphorylation of FOXM1 is essential for mitotic progression of glioma-initiating cells” 2011

3. Dardinger Neuro-Oncology award for outstanding progress in research: Kaushal Joshi, Advisor: Ichiro Nakano, 2012

4. American Academy of Neurology Medical Student Summer Research Scholarship: Ranjit Ganguly, Advisor: Ichiro Nakano, 2013

5. China Council Scholarship supported by Education Ministry of China: Ping Mao, Supervisor: Ichiro Nakano, 2012-2013

6. China Council Scholarship supported by Education Ministry of China: Peng Cheng, Supervisor: Ichiro Nakano, 2012-2013

7. Dardinger Neuro-Oncology award for outstanding progress in research: Ping Mao, Advisor: Ichiro Nakano, 2013

8. NIH/R25: Ahmed Mohyeldin, Supervisor: Ichiro Nakano, 2014-2015

9. Neurosurgery Research & Education Foundation. Medical Student Summer Research Fellowship: Ranjit Ganguly, Supervisor: Ichiro Nakano, 2014

10. Mentoring Program, UAB Comprehensive Cancer Center, 2016

INVITED NATIONAL AND INTERNATIONAL SEMINARS AND LECTURES *(selected)*

1. Maternal Embryonic Leucine-zipper Kinase, MELK, regulates proliferation in neural stem and tumor cells. Keystone Symposia, Colorado, 2004
2. Neural Stem Cells and Brain Tumor Stem Cells. The Second Annual Hot Topics in Stem Cell Biology, Annual Meeting of Society for Neuroscience, Washington DC, 2005
3. Neural stem cells and brain tumor stem cells. Pediatric Ground Rounds, UCLA, Los Angeles 2006
4. Stem cells in Pediatric brain tumors. Clinical Neurosurgical Symposia, UCLA, Los Angeles 2006
5. Heterogeneity of brain tumors- discovery of brain tumor stem cells. Special seminar series in the Department of Neurosurgery, Hiroshima University, Hiroshima, Japan 2007
6. Brain tumor stem cells. The 13th annual meeting of the Japan Society of Gene Therapy, Nagoya, Japan 2007
7. Heterogeneity of brain tumors- discovery of brain tumor stem cells. Special seminar series in the Department of Neurosurgery, Hamamatsu University School of Medicine, Hamamatsu, Japan 2007
8. Neural stem cells and brain tumor stem cells. Encino-Tarzana Regional Medical Center, Los Angeles, 2007
9. Brain tumor stem cells. The Department of Neurosurgery, University of Tokyo, Tokyo, Japan 2007
10. Signaling mechanisms regulating brain tumor stem cell growth. the Annual meeting of the Cell Transplantation Society. Minneapolis, 2007
11. Clinical Implication of Neural Stem Cells and Brain Tumor Stem Cells. Educational Lecture for staff in PICU at UCLA, Los Angeles 2007
12. Luncheon Seminar; Brain Tumor Biology. The 12th Asian Australasian Congress of Neurosurgical Surgeons / World Federation of Neurosurgical Societies, 13th Interim Meeting, Nagoya, Japan 2007
13. Brain tumor stem cells. Invited Lecture in the Department of Neurosurgery, Nara University School of Medicine, Nara, Japan 2007
14. Brain tumor stem cells. Invited Lecture in the Department of Neurosurgery, Osaka City University School of Medicine, Osaka, Japan 2007
15. Brain tumor stem cells. Invited Lecture in the Department of Neurosurgery, Mie University School of Medicine, Mie, Japan 2008
16. Cancer stem cells in brain tumors. Invited Lecture. The 12th World Congress on In Vitro Biology, Tucson, 2008
17. Neural Stem Cells and Brain Tumor Stem Cells. Invited Presentation. Department of Neurological Surgery, The Ohio State University. Columbus, 2008
18. Neural Stem Cells and Brain Tumor Stem Cells. Invited Presentation. The Stem Cell Institute, The James Graham Brown Cancer Center, University of Louisville. Louisville, 2008
19. Neural Stem Cells and Brain Tumor Stem Cells. Invited Presentation. Ground Rounds, Department of Neurosurgery, Emory University. Atlanta, 2008
20. Therapeutic Development for malignant glioma. Keio University, Japan, 2010
21. Therapeutic Development for malignant glioma. Japan Foundation for Cancer Research, Tokyo, Japan, 2010
22. Therapeutic Development for malignant glioma. National Institute of Advanced Industrial Science and Technology, Tokyo, Japan, 2010
23. Therapeutic Development for malignant glioma. 9th International Meeting, Brain Tumor Symposium, Tuscany, Italy, 2010
24. Therapeutic Development for malignant glioma. Clinical Trial Phase I/II Meeting, the Ohio State University, Columbus 2010
25. Therapeutic development targeting brain tumor stem cells. The Third Annual World Congress of Regenerative Medicine and Stem Cells, Shanghai, China 2010
26. Therapeutic development program for Malignant Glioma. Department of Neurosurgery, Nagoya University, Nagoya, Japan 2011
27. Therapeutic development program for Malignant Glioma. Department of Neurosurgery, Osaka Medical University, Osaka, Japan 2011
28. Therapeutic development program for Malignant Glioma. Department of Neurosurgery, Osaka City University, Osaka, Japan 2011
29. Glioma Stem Cells: Moving Target and Therapy Development for Malignant Glioma. Cornell University, New York 2012
30. Glioma Stem Cells: Moving Target and Therapy Development for Malignant Glioma. University of Pittsburgh, Pittsburgh 2012
31. Glioma Stem Cells: Moving Target and Therapy Development for Malignant Glioma. Virginia Commonwealth University, Richmond 2012
32. Glioma Stem Cells: Moving Target and Therapy Development for Malignant Glioma. Neural Stem Cell Research Center, UCLA, Los Angeles 2012
33. Translational Research with Glioma Stem Cells, Retreat, Center for Regenerative Medicine and Cell-Based Therapy, OSU, Columbus 2012
34. Invited seminar, Glioma Stem Cells: Moving Target and Therapy Development for Malignant Glioma. Sanford-Burnham Medical Research Institute, San Diego, 2012
35. Invited seminar, Glioma Stem Cells: Moving Target and Therapy Development for Malignant Glioma. Department of Neurosurgery, UCSD, San Diego 2012
36. Invited seminar, Glioma Stem Cells: Moving Target and Therapy Development for Malignant Glioma. Department of Neurosurgery, University of Arizona, Tucson, 2012
37. Invited talk at Ground Rounds, Glioma Stem Cells: Moving Target and Therapy Development for Malignant Glioma. Barrow Neurosurgical Institute, Phoenix, 2012
38. Glioma Stem Cells: Moving Target and Therapy Development for Malignant Glioma. Department of Stem Cell Research and Regenerative Medicine, Cleveland Clinic, Cleveland 2012
39. Glioma Stem Cells: Moving Target and Therapy Development for Malignant Glioma. Stem Cell Program Meeting, Sanford-Burnham Medical Research Institute, San Diego 2012
40. Glioma Stem Cells: Moving Target and Therapy Development for Malignant Glioma. The 5th International China Neurosurgical Meeting, Xi’an, China 2012
41. Moderator, The Annual Meeting for the Society for Neuro-Oncology, Washington DC, Oct 2012
42. Identification of the first-in-class Ran/Survivin inhibitor LLP-3 for Glioblastoma Therapy Development. Inventor Presentation at Technology Review Board, Columbus, 2013
43. Cancer stem cell evolution. Center for Tissue Regeneration and Engineering at Dayton, University of Dayton, Dayton 2013
44. Stem Cell Signature in Normal Brains and Oncogenesis. Drug Discovery Asia 2013, Singapore 2013
45. Brain Tumor Stem Cells – Evolution of Cancers. 5th Asia Stem Cells and Regenerative Medicine Congress, Singapore 2013
46. Evolution of Cancer Stem Cells – Lesson from Brain Tumors. Cancer Science Institute, National University of Singapore, Singapore 2013
47. Developmental Therapeutics for Malignant Brain Tumors. XV WFNS World Congress of Neurosurgery, Seoul, Korea 2013
48. Developmental Therapeutics for Malignant Brain Tumors. Korea University, Seoul, Korea 2013
49. Evolution of Cancer Stem Cells – Lesson from Brain Tumors. Departmental Biomedical Seminar Series, Department of Biology, University of Dayton, Dayton 2013
50. Proneural-Mesenchymal Transformation of Glioma Stem Cells. the 4th Quadrennial Meeting of the World Federation of Neuro-Oncology held in conjunction with the 18th Annual Meeting of the Society for Neuro-Oncology, San Francisco, California, 2013,
51. Proneural-Mesenchymal Transformation of Glioma Stem Cells. California Pacific Medical Center Research Institute, San Francisco,, California 2013
52. Proneural-Mesenchymal Transformation of Glioma Stem Cells. The 31st Annual Meeting of Japan Society of Neuro-Oncology, Miyazaki, Japan 2013
53. Proneural-Mesenchymal Transformation of Glioma Stem Cells. Ground Rounds, Department of Biological Sciences, University of Toledo, Toledo, 2014
54. Proneural-Mesenchymal Transformation of Glioma Stem Cells. The 32st Annual Meeting of Japan Society of Neuro-Oncology, Chiba, Japan 2014
55. Evolution of glioma stem cells. Invited seminar, Cornell University. New York 2014
56. Evolution of glioma stem cells. Invited seminar, Virginia Commonwealth University. Richmond 2014
57. Proneural-Mesenchymal Transformation of Glioma Stem Cells. Cancer Stem Cell Model meets Cellular Evolution Model. Translational Therapeutics Seminar Series, James Comprehensive Cancer Center, The Ohio State University, Columbus, Ohio 2014
58. Proneural-Mesenchymal Transformation of Glioma Stem Cells. Cancer Stem Cell Model meets Cellular Evolution Model. Ground Rounds, Department of Neurosurgery, UCSD, San Diego, 2014
59. Proneural-Mesenchymal Transformation of Glioma Stem Cells. Cancer Stem Cell Model meets Cellular Evolution Model. Joint Conference by Comprehensive Cancer Center and Stem Cell Center, UC Irvine, Irvine, 2014
60. Evolution of Glioma Stem Cells - Cancer Stem Cell Model meets Cellular Evolution Model. Invited Seminar, Cancer Center, Virginia Commonwealth University, Richmond, 2014
61. Evolution of Glioma Stem Cells - Cancer Stem Cell Model meets Cellular Evolution Model. Ground Rounds, Department of Neurosurgery, Mayo Clinic, Rochester, 2014
62. Evolution of Glioma Stem Cells - Cancer Stem Cell Model meets Cellular Evolution Model. 26th Kansai Neuro-Oncology Seminar Series, Department of Neurosurgery, Osaka Medical College, Japan, 2014
63. Therapeutic Development for Glioblastoma. Special Seminar, Department of Neurosurgery, Hiroshima University, Japan, 2014
64. Cancer Stem Cell Dynamics. Invited seminar, International session, Annual meeting for the Japan Cancer Society, Yokohama, Japan, 2014
65. Cancer Stem Cell in Brain Tumor. Invited seminar, Stem Cell and Cancer Conference, Montreal, Canada, 2014
66. Cancer Stem Cell Dynamics. Invited seminar, Annual meeting for Society of Brain Mapping and Therapeutics, Los Angeles, 2015
67. Evolution of Glioma Stem Cells - Cancer Stem Cell Model meets Cellular Evolution Model. Korean Cancer Center, Seoul, Korea, 2015
68. Evolution of Glioma Stem Cells - Cancer Stem Cell Model meets Cellular Evolution Model. Korea University, Seoul, Korea, 2015
69. Evolution of Glioma Stem Cells - Cancer Stem Cell Model meets Cellular Evolution Model. Japan Cancer Center, Tokyo, Japan, 2015
70. Evolution of Glioma Stem Cells - Cancer Stem Cell Model meets Cellular Evolution Model. Department of Neurosurgery, Kansai Medical College, Hirakata, Japan, 2015
71. Evolution of Glioma Stem Cells - Cancer Stem Cell Model meets Cellular Evolution Model. Department of Neurosurgery, Osaka City College, Osaka, Japan, 2015
72. Evolution of Glioma Stem Cells - Cancer Stem Cell Model meets Cellular Evolution Model. Department of Neurosurgery, Kansai Medical College, Hirakata, Japan, 2015
73. Evolution of Glioma Stem Cells - Cancer Stem Cell Model meets Cellular Evolution Model. Research Institute for Microbial Diseases, Osaka University, Osaka, Japan, 2015
74. Therapeutic Development for Glioblastoma. Special Seminar, Department of Neurosurgery, University of Alabama at Birmingham, Birmingham, 2015
75. Epithelial-Mesenchymal Transition in Glioblastoma. Chair of Cancer Stem Cell Session. 21st International Conference on Brain Tumor Research and Therapy, Okinawa, Japan, 2016
76. Selected Speaker, Therapy development for Glioblastoma. Christopher Davidson Forum, St. Louis, Missouri, September 2016
77. International Invited Speaker, Development of Phase 0/I clinical trial for brain cancers in the United States. Annual Meeting for Japan Neurosurgery Society, Fukuoka, Japan September 2016
78. International Invitation, Education for Physician Scientists in the United States. Annual meeting for the Japan Cancer Society, Yokohama, Japan, Oct 2016
79. Seminar, Signaling mechanism to control stemness in cancers. Korea National Cancer Center, Seoul, Oct 2016
80. Early morning lecture, Tumor heterogeneity in a single tumor of glioblastoma. Annual Meeting for the Society of Neuro-Oncology, Phoenix, Arizona, Nov 2016
81. ABTC Trial Concept Update: [drug name confidential] as a therapeutic agent for Glioblastoma, Adult Brain Tumor Consortium – Baltimore, MD. Dec 2016
82. Population Dynamics in Intra-tumoral Heterogeneous Cells and Therapy Development for Glioblastoma, Invited speaker, University of San Francisco, CA, Jan 2017
83. Career Development for the Physician Scientist Studying Cancer Therapies in the US, International invited speaker, Ehime University, Japan, Jan 2017
84. Neurosurgical research and treatment strategies, International invited speaker, 2017 Chang’an International Neurosurgery Summit Forum, Xi’an, China, Mar 2017
85. Moving targets in heterogeneous cells in single tumor and their population dynamics, International invited speaker, University of Toronto, Canada, Feb 2017
86. ABTC Trial Concept Update: [drug name confidential] as a therapeutic agent for Glioblastoma, Adult Brain Tumor Consortium – Baltimore, MD. Apr 2017
87. Comprehensive Team Approach for Brain Tumors, Guest Speaker, Fort Walton Beach Medical Center, Florida. April 2017
88. Fluorescence Technologies in Tumor Neurosurgery: Present and Future Directions. American Association of Neurological Surgeons Annual Meeting. Los Angeles, CA. Apr 24, 2017
89. The Spectrum of Adjuvant Therapy for Brain Tumors. Panelist. American Association of Neurological Surgeons Annual Meeting. Los Angeles, CA. Apr 26, 2017
90. Collaboration with Japanese Neuro-Oncology Groups. Kansai Medical University, Osaka City University, and RIKEN. July 01-02, 2017
91. Discussion for 5-ACA Surgery using Surgical Loupe and Translational Research Project to Collect Fluorescent Tumors. Osaka Medical University. July 05-06, 2017
92. Cancer heterogeneity – Lesson from glioma biology to capture a moving target. Winthrop P. Rockefeller Cancer Institute Grand Rounds, University of Arkansas for Medical Sciences. September 13, 2017.

GRANTS

Active Grants

R01NS083629 (PI: Lathia) 7/15/2013 – 6/30/2018 0.12 calendar

Subaward from Cleveland Clinic $14,000

Novel adhesion mechanisms in glioblastoma stem cells

The goal of this project is to uncover the critical role of CSC interaction with the niche via JAM-A and evaluate potential therapies to GBM which disrupt niche related communication.

*Role – Subaward PI*

R01NS083767 (PI: Nakano, Lee) 05/19/2016-04/30/2018 1.20 calendar

NINDS $210,820

Targeting MELK-mediated EZH2 signaling in glioma stem cells

The goal of this project is to find a new paradigm for glioma stem cell (GSC) biology and a novel therapeutic approach to target key regulators of GSC.

*Role – Contact PI*

R01NS087913 (PI: Rich, Nakano) 4/15/2014 - 2/28/2019 1.20 calendar

NINDS: Distribution from Cleveland $115,000

Metabolism informs intertumoral & intratumoral heterogeneity

**The goal of this project is** to translate our findings to develop therapeutics targeting the dysregulated metabolic signaling in GBM.

*Role – Principal Investigator (multi PI)*

R01CA183991 (PI: Nakano) 2/15/2015 - 1/31/2020 1.20 calendar

NCI $207,215

**Novel role of compensatory proliferation in human brain tumor**

The goal is to determine whether inter-cellular signaling between therapy-induced dying tumor cells and surviving cells leads to creation of recurrent tumors with even more therapy resistant phenotype.

*Role – Principal Investigator*

R01CA201402 (PI: Cerione, Nakano) 12/4/2015 - 11/30/2020 1.80 calendar

NCI: Distribution from Cornell $135,000

**The roles of a unique GTP-binding protein/crosslinking enzyme in disease**

The goal is to understand the biological roles of TGase-2 in disease, as well as identify novel therapeutic targets for EGFR/EGFRvIII-driven cancers such as GBM.

*Role – Principal Investigator (Multi PI)*

R01NS093843 (PI: Cheng) 9/1/2015 - 5/31/2020 0.12 calendar

Subaward from Northwestern $13,500

**Glioblastoma Phenotype Modulation Through miRNA Control of Wnt Signaling**

The goal is to understand how aberrant miR expression and Wnt signaling activity contribute to glioma malignancy.

*Role – Subaward PI*

R21CA198648 (PI: Iyer) 5/19/2016-4/30/2018 0.3 calendar

Subaward UT Austin $5,962

Novel role of the Polycomb repressive complex PRC2/EZH2 in glioblastoma

The goal is to establish, characterize and use patient-derived glioma neurosphere cultures and their mouse xenograft brain tumors to investigate the physiological role of EZH2 association with short NRAs in glioma stem cells

*Role – Subaward PI*

R25NS079188 (PI: Standaert) 7/01/2016-06/30/2022 N/A

NINDS $77,000

UAB Research and Education Program in Neuroscience

The goal is to support residents in neurology, neurosurgery, and neuropathology who are pursuing careers combining clinical practice and research, and foster their development as physician-scientists

*Role – Associate Director*

Pending Grants

R01 TBD (PI: Bhat) 7/1/2017 - 6/30/2022 0.12 calendar

Subaward from MD Anderson $50,000

Characterization and Targeting of the Cell Surface Protein CD109 in Glioblastoma

The major goal is to establish and identify cell surface markers for radio-resistance and clinical biomarkers associated with high grade gliomas

*Role- Subaward PI*

R01 TBD (PI: Chinnaiyan) 7/1/2017 - 6/30/2022 0.12 calendar

Subaward from Beaumont Research Institute $53,000

Defining the Biologic Consequence and Therapeutic Implications of Fatty Acid Oxidation (FAO) in Glioblastoma

The overall goal is to determine the *in vivo* efficacy of two compounds that target fatty acid oxidation in glioma stem cells in GBM.

*Role – Subaward PI*

P50 CA217670 (PI: Markert) 7/1/2017 - 06/30/2022 1.8 calendar

NCI $2,500,000

Contemporary Therapeutics for Anaplastic Gliomas

The goal of this project is to facilitate translational Brain Cancer research. There are two distinct interventional research Projects that will initiate two novel Phase I clinical trials, a reverse translation Project that will conduct correlative biology studies of specimens from an ongoing Phase 2/3 trial, and a population science Project that will evaluate DNA polymorphisms in mitochondrial DNA for risk factors related to development or progression of, or response to therapy in, malignant gliomas

*Role - Biospecimen and Glioma Models Core Leader, Clinical Co-Leader (project 2), DRP Leader*

U01 TBD (PI: Lee) 7/1/2017 - 06/30/2022 1.20 calendar

Subaward from OSU $150,000

Nanochannel Electroporation and Lipoplex Nanoparticle Biochips to Characterize Glioma Stem Cells

The goal of this proposal is to use novel nanotechnologies to enable the identification, isolation, and further biointerrogation of rare populations of aggressive glioma stem cells and their extracellular vesicles and facilitate the development of novel therapies to treat GBM relapse.

*Role – Subaward PI*

R21CA215872 (PI: Suswam) 4/1/2017-3/31/2019 0.24 calendar

NCI

PAD4-Mediated deamination of plectin 1 as a key regulator of glioma invasion

The goal of this proposal is to investigate a novel mechanism of glioma cell migration and invasion via PAD4-mediated deamination of plectin 1 and evaluation of a PAD inhibitor.

*Role: Co-Investigator*

R01 TBD (PI: Kango-Singh) 7/1/2017-6/30/2020 0.12 calendar

Subaward University of Dayton $74,250

Molecular networks and cellular mechanisms involved in tumorigenesis

The goal of this proposal is to combine Drosophila studies with human studies to yield insights about the molecular signaling interactions in glioma which will help to design better therapeutic strategies.

*Role: Sub-Award PI*

R01NS083767 renewal (PI: Nakano) 9/1/2017-8/31/2020 1.20 calendar

NINDS $1,493,475

Targeting the Dual EZH2 signaling in plastic glioma stem cells

The goal of this proposal is to determine the molecular mechanisms of the newly identified FOXM1-driven MELK/NEK2-to-EZH2 signaling axis in GBM cells and examine whether targeting this pathway would be a safe and efficient therapeutic strategy for GBM.

*Role – Principal Investigator*

Completed Grants

R21CA175875, PI: Nakano (Contact); Penalva $43,795

Role: PI 1/1/2014-12/31/2016

*Determination of Musashi1/CD44v6 signaling in mesenchymal glioma stem cells.*

5 R01 MH065756-05, PI: Kornblum, HI xwa$180,000.00

National Institutes of Health 07/01/2004 - 04/30/2008

Role: Assistant Researcher

*Identity and Function of CNS Progenitor Cell Genes*

It is hypothesized that genes expressed in multiple stem cell populations will play important roles in NSC self-renewal. The first two aims of this research will focus upon three genes that share the characteristics of restricted expression in CNS germinal zones and expression in multiple stem cell containing cultures: MELK, PSP, and TOPK.

Jonsson Cancer Center Foundation, PI: Kornblum, HI $150,000.00

Role: Co-Investigator 06/01/2005 - 05/31/2006

*Brain Tumor Stem Cells*

This research examines the relationship between brain tumor progenitors and neural stem cells and is designed to test the hypotheses that brain tumors contain cancer stem cells and that therapies directed towards blocking cancer stem cell self renewal will be effective treatments in animal models.

R01 NS052563-01(PI: Kornblum, HI) $198,822.00

National Institutes of Health 04/01/2006 - 03/31/2009

Role: Co-Investigator

*Neural Progenitor Genes and Brain Tumors*

This grant will test the specific role of MELK in glioma and medulloblastoma proliferation, will seek to develop novel therapeutics based on regulation of MELK expression, and will determine the role of other neural stem cell genes in brain tumor propagation.

The Childhood Brain Tumor Foundation (P.I.: Nakano, I) $50,000.00

8/1/2006-7/31/2008

*A role of a transcription factor, FoXM1, in cancer stem cells in pediatric brain tumors.* The goal is to study the role of FoXM1 in normal neural stem cells and brain tumor stem cells to identify novel mechanisms of tumorigenesis and improve our understanding of the molecular pathways regulating the proliferation of normal and brain tumor stem cells.

The UCLA Neurosurgery Seed Grant (P.I.: Nakano, I) $15,000.00

*Characterization of a transcription factor, FoXM1, in brain tumor stem cells and identification of its small molecule inhibitors.*

The Institute for Stem Cell Biology and Medicine (P.I.: Nakano, I) $190,000.00

11/1/2006-10/31/2008

This is a training fellowship to support young clinical investigators to enhance their career as a stem cell researcher, who seek to perform clinically-relevant research.

Vincent J. Sgro/The American Brain Tumor Association (P.I.: Nakano, I) $50,000.00

7/1/2008-6/30/2009

*Targeting the key signaling pathways in brain tumor stem cells.*

Katie’s Kids for the Cure (P.I.: Nakano, I) $50,000.00

7/1/2008-6/30/2010

*Targeting Maternal Embryonic Leucine-zipper Kinase in cancer stem cells in pediatric brain tumors.*

NIH 1R21CA135013-01A1 (P.I.: Nakano, I) $203,280.00

Impact Score: 139, Percentile: 12.6 9/1/2009-8/31/2011

*Characterization of CD44 in brain tumor stem cells*

In this proposal, we will undertake innovative strategies targeting molecular aberrations in brain tumor stem cells. The successful achievement of this proposal will enable us to launch novel therapeutic approaches for patients with brain tumors.

National Brain Tumor Foundation (P.I.: Nakano, I) $50,000.00

1/1/10-12/31/11

*Targeting brain tumor stem cells via MELK inhibition (translational research award)*

American Brain Tumor Association (P.I.: Nakano, I) Direct cost: $75,000.00

7/1/12-6/30/13, no cost extension until 12/31/2013

CD44v as a target in therapy-resistant mesenchymal glioblastoma

American Cancer Society (MRSG-08-108-01) (P.I.: Nakano, I) Direct cost: $729,000

11/1/2008-10/30/2013, no cost extension until 6/30/2014

*Targeted inhibition of the key signaling pathways in pediatric brain tumors.*

OSU CCC/Pelotonia IRP Award, PI: Nakano, I; Cole S $50,000

7/1/2015-6/30/2016

*Examining oscillatory Hes1 expression as a novel mechanism to support glioma stem cell proliferation and heterogeneity.*

R21CA192042, PI: Verbridge) $139,658

Role: Co-Investigator in Year 1 2/12/2015-1/31/2017

*Targeted electric field therapy for malignant infiltrative glioma*

#### BIBLIOGRAPHY

PEER-REVIEWED

1. Treatment of intractable postherpetic neuralgia and blepharospasm: intraneural injection of adriamycin. Saiki M, Kondo A, Kinuta Y, Iwasaki K, Kobata H, Hasegawa K, Chin M, **Nakano I**, Yamamoto T. *No Shinkei Geka.* 1995 Feb;23(2):125-30. Japanese.
2. Solitary metastatic breast carcinoma in a trigeminal nerve mimicking a trigeminal neurinoma. **Nakano I**, Kondo A, Iwasaki K. *J Neurosurg.* 1996;85(4):677-80.
3. Choroid plexus papilloma in the posterior third ventricle. **Nakano I**, Iwasaki K, Kondo A. *Neurosurgery.* 1997;40(6):1279-82.
4. Incorporation and differentiation of hippocampus-derived neural stem cells transplanted in injured adult rat retina. Nishida A, Takahashi M, Tanihara H, **Nakano I**, Takahashi JB, Mizoguchi A, Ide C, Honda Y. *Invest Ophthalmol Vis Sci.* 2000;41(13):4268-74.
5. Stem cell-derived neural stem/progenitor cell supporting factor is an autocrine/paracrine survival factor for adult neural stem/progenitor cells. Toda H, Tsuji M, **Nakano I**, Kobuke K, Hayashi T, Kasahara H, Takahashi J, Mizoguchi A, Houtani T, Sugimoto T, Hashimoto N, Palmer TD, Honjo T, Tashiro K. *J Biol Chem.* 2003 Sep 12;278(37):35491-500.
6. Cancer stem cells can arise from pediatric brain tumors. Hemmati HD, **Nakano I**, Lazareff JA, Masterman-Smith M, Geschwind DH, Bronner-Fraser M, Kornblum HI. *Proc Natl Acad Sci U S A.* 2003 Dec 9;100(25):15178-83.
7. Neural progenitor genes. Germinal zone expression and analysis of genetic overlap in stem cell populations. Easterday MC, Dougherty JD, Jackson RL, Ou J, **Nakano I**, Paucar AA, Roobini B, Dianati M, Irvin DK, Weissman IL, Terskikh AV, Geschwind DH, Kornblum HI. *Dev Biol.* 2003 Dec 15;264(2):309-22.
8. Patterns of Jagged1, Jagged2, Delta-like 1 and Delta-like 3 expression during late embryonic and postnatal brain development suggest multiple functional roles in progenitors and differentiated cells. Irvin, D.K., **Nakano I**, Paucar, A., and Kornblum H.I. *J Neurosci Res.* 2004 Feb 1; 75(3): 330-43.
9. Cancerous Stem Cells in Pediatric Brain Tumors. **Nakano I**, Hemmati HD, Kornblum HI. *No Shinkei Geka*. 2004 Aug; 32(8): 827-834. Japanese
10. Developmental expression of glial fibrillary acidic protein mRNA in mouse forebrain germinal zones-implications for stem cell biology. Fox IJ, Paucar AA, **Nakano I**, Mottahedeh J, Dougherty JD, Kornblum HI. *Brain Res Dev Brain Res.* 2004 Oct 15;153(1):121-5.
11. Maternal Embryonic Leucine Zipper Kinase (MELK) Regulates Multipotent Neural Progenitor Proliferation. **Nakano, I**., Paucar, A.A., Bajpai, R., Dougherty, J,.D., Zewail, A., Kelly, T.K., Kim, K.J., Ou, J., Groszer, M., Imura, T., Freije W.A., Nelson, S.F., Sofroniew, M.V., Wu, H., Liu, X., Terskikh, A.V., Geschwind, D.H., and Kornblum, H.I. *J Cell Biol.* 2005 Aug 1;170(3):413-27
12. PBK/TOPK, a Proliferating Neural Progenitor-Specific Mitogen-Activated Protein Kinase Kinase. Dougherty, J.D., Garcia, A.D.R., **Nakano, I**., Livingstone, M., Norris, B., Polakiewicz, R.D., Sofroniew, M.V., Kornblum, H.I., Geschwind, D.H. *J Neurosci* 2005 Nov 16;25(46):10773-10785
13. Phenotypic and functional heterogeneity of GFAP-expressing cells *in vitro*: Differential expression of LeX/CD15 by GFAP-expressing multipotent neural stem cells and non-neurogenic astrocytes Imura, T., **Nakano I**., Kornblum, H.I., and Sofroniew M.V. *Glia* 2006 Feb;53(3):277-93.
14. Brain tumor stem cells. **Nakano I**, Kornblum HI. *Pediatr Res.* 2006 Apr;59(4 Pt 2):54R-8R. Review.
15. Phosphoserine phosphatase is expressed in the neural stem cell niche and regulates neural stem and progenitor cell proliferation. **Nakano I,** Dougherty JD, Kim K, Klement I, Geschwind DH, Kornblum HI. *Stem Cells* 2007 Aug;25(8):1975-84.
16. Maternal embryonic leucine zipper kinase is a key regulator of the proliferation of malignant brain tumors, including brain tumor stem cells. **Nakano I**, Saigusa K, Masterman-Smith M, Horvath S, Watanabe M, Negro A, Paucar AA, Lelievre V, Waschek JA, Lazareff JA, Freije WA, Liau LM, Gilbertson RJ, Cloughesy T, Geschwind DH, Nelson SF, Mischel PS, Tesrskikh A, Kornblum HI. *J Neurosci Res* 2007 Aug 24;86(1):48-60
17. BMPing Off Glioma Stem Cells. **Nakano I**, Saigusa K, Kornblum HI. *Cancer Cell* 2008 Jan 8;13(1):3-4.
18. Cancer Stem Cells in Pediatric Brain Tumors. Lasky JL, Choe M, and **Nakano I**. *Curr Stem Cell Res Ther* 2009 Dec; 4(4):298-305
19. Methods for analysis of brain tumor stem cell and neural stem cell self-renewal.**Nakano I**, Kornblum HI. *Methods Mol Biol*. 2009;568:37-56. doi: 10.1007/978-1-59745-280-9\_4. PMID: 19582420
20. Cancers and Cancer Stem Cells. **Nakano I** and Saya H *No Shinkei Geka*. 2010 Aug. Japanese
21. Siomycin A targets brain tumor stem cells partially through a MELK-mediated pathway. **Nakano I,** (corresponding author) Joshi K, Visnyei K, Hu B, Watanabe M, Lam D, Wexler E, Saigusa K, Nakamura Y, Laks DR, Mischel PS, Viapiano M, Kornblum HI. *Neuro Oncol*. 2011 Jun;13(6):622-34. doi: 10.1093/neuonc/nor023. Epub 2011 May 9..
22. Brain tumor stem cells. Lasky JL and **Nakano I**. *Current Signal Transduction Therapy* 2011 [*in press*]
23. Glioma stem cells and their therapy resistance. Mangum R and **Nakano I**. *Journal of Carcinogenesis and Mutagenesis* 2011 S1:002. doi: 10.4172/2157-2518.S1-002
24. Method for Novel Anti-Cancer Drug Development using Tumor Explants of Surgical Specimens. Joshi K, Demir H, Miyazaki T, Yamada R, Ray-Chaudhury A, **Nakano I**. *Journal of Visualized Experiment* 2011. 53 doi: 10.3791/2846
25. CD44v6 regulates brain tumor stem cell growth partially through the AKT-mediated pathway. Jijiwa M, Demir H, Gupta S, Leung C, Joshi K, Orozco N, Huang T, Yildiz VO, Shibahara I, de Jesus JA, Yong WH, Mischel PS, Fernandez S, Kornblum HI and **Nakano I**. *PLoS ONE* 6(9): e24217. doi:10.1371/journal.pone.0024217
26. Finding drugs against CD133(+) glioma subpopulations. **Nakano I**, Chiocca EA. *J Neurosurg.* 2011 Mar;114(3):648; discussion 648-50.
27. A molecular screening approach to identify and characterize inhibitors of glioblastoma multiforme stem cells. Visnyei K, Onodera H, Saigusa K, Damoiseaux R, Petrosyan S, De Vries D, Ferrari D, Saxe J, Panosyan E, Masterman-Smith M, Mottahedeh J, Huang J, Sabatti C, **Nakano I** and Kornblum HI. *Molecular Cancer* *Therapeutics* 2011 Oct;10(10):1818-28
28. Telomestatin impairs glioma stem cell survival and growth through the disruption of telomeric G-quadruplex and inhibition of the proto-oncogene, c-Myb. (with the cover picture) Miyazaki T, Pan Y, Joshi K, Purohit D, Hu B, Demir H, Mazumder S, Okabe S, Yamori T, Viapiano M, Shin-ya K, Seimiya H, and **Nakano I***. Clin Cancer Res* 2012 Mar 1;18(5):1268-80.
29. Hope and challenges for dendritic cell-based vaccine therapy for glioblastoma. **Nakano I**, Chiocca EA. *World Neurosurg*. 2012 May-Jun;77(5-6):633-5. doi: 10.1016/j.wneu.2011.10.012. Epub 2011 Nov 1. No abstract available. PMID: 22120228
30. Glioma Stem Cells: Their Role in Chemoresistance. Yamada R and **Nakano I**. *World Neurosurgery* 2012 Feb;77(2):237-40. doi: 10.1016/j.wneu.2012.01.004. Epub 2012 Jan 5.
31. Therapeutic targeting of VEGF in the treatment of glioblastoma. Robles Irizarry L1, Hambardzumyan D, **Nakano I**, Gladson CL, Ahluwalia MS. *Expert Opin Ther Targets*. 2012 Oct;16(10):973-84. doi: 10.1517/14728222.2012.711817. Epub 2012 Aug 9.
32. Laminin alpha 2 enables glioblastoma stem cell growth. Lathia JD, Li M, Gallagher J, Hall PE, Hale JS, Wu Q, Levy E, Venere M, M. Rani S, Huang P, Bae E, Selfridge J, Cheng L, Guvenc H, McLendon RE, **Nakano I,** Sloan AE, Bao S, Lai A, Gladson C, Bredel M, Hjelmeland AB, Rich JN. *Annals of Neurology* 2012 Nov;72(5):766-78. doi: 10.1002/ana.23674.
33. Suppression of peroxiredoxin 4 in glioblastoma cells increases apoptosis and reduces tumor growth. Kim TH, Song J, Alcantara S, Murnan E, Liyanarachchi S, Palanichamy P, Yi JY, Viapiano MS, **Nakano I**, Yoon SO, Wu H, Parada LF, and Kwon CH. *PLoS ONE* 2012;7(8):e42818. doi: 10.1371/journal.pone.0042818.
34. Blockade of EGFR signaling promotes glioma stem-like cell invasiveness by abolishing ID3-mediated inhibition of p27(KIP1) and MMP3 expression. Jin X, Jin X, Sohn YW, Yin J, Kim SH, Joshi K, Nam DH, **Nakano I**, Kim H. *Cancer Lett*. 2012 Sep 27. pii: S0304-3835(12)00542-3. doi: 10.1016/j.canlet.2012.09.005.
35. A streamlined protocol for the use of the semi-sitting position in neurosurgery: A report on 48 consecutive procedures. Ammirati M, Lamki TT, Shaw AB, Forde B, **Nakano I**, Mani M. *J Clin. Neurosci*. 2013 Jan;20(1):32-4. doi: 10.1016/j.jocn.2012.05.037.
36. Impairment of glioma stem cell survival and growth by a novel inhibitor for Survivin/Ran protein complex. Guvenc H\*, Pavlyukov MS\*, Kurt H, Joshi K Banasavadi-Siddegowda YK, Mao P, Hong C, Yamada R, Kwon CH, Kitange G, Park IH, Sarkaria JN, Li C, Shakhparonov MI, **Nakano I**. *Clin Cancer Res* 2013 Feb 1;19(3):631-42. doi: 10.1158/1078-0432.CCR-12-0647.
37. Characteristics of Brain Tumor Stem Cells and the Rationale for Applying Tyrosine Kinase Inhibitors as Potential Targeting Agents. Mangum MR, Purohit D, and **Nakano I**. *Recent Patents on Regenerative Medicine* Volume 2, Issue 3, September 2012, pp. 197-207(11)
38. Tumor-specific activation of the c-JUN/MELK pathway regulates glioma stem cell growth in a p53-dependent manner. Gu C, Banasavadi-Siddegowda YK, Joshi K, Nakamura Y, Kurt H, Gupta S, and **Nakano I**. *Stem Cells* 2013 Jan 17. doi: 10.1002/stem.1322.
39. MELK-dependent FOXM1 phosphorylation is essential for proliferation of glioma stem cells. JoshiK, Banasavadi-SiddegowdaY, Mo X, KimS, MaoP, KigC, NardiniD, SobolRW, ChowL, KornblumHI, WaclawR, Beullens M, and **NakanoI**. *Stem Cells* 2013 Feb 13. doi: 10.1002/stem.1358.
40. Fluorescence-Guided Brain Tumor Surgery. Smith L and **Nakano I**. *World Neurosurgery* 2012 Dec;78(6):559-64. doi: 10.1016/j.wneu.2012.10.015.
41. Phosphorylation of EZH2 activates STAT3 signaling via STAT3 methylation and promotes tumorigenicity of glioblastoma stem-like cells. Kim E, Kim M, Woo DH, Shin Y, Shin J, Chang N, Oh YT, Kim H, Rheey J, **Nakano I**, Lee C, Joo KM, Rich JN, Nam DH, Lee J. *Cancer Cell*. 2013 Jun 10;23(6):839-52. doi: 10.1016/j.ccr.2013.04.008. Epub 2013 May 16.
42. MicroRNA-128 coordinately targets Polycomb Repressor Complexes in glioma stem cells. Peruzzi P, Bronisz A, Nowicki MC, Wang Y, Ogawa D, Price R, **Nakano I**, Kwon CH, Hayes J, Lawler SE, Ostrowski MC, Chiocca EA, Godlewski J. *Neuro-Oncology* 2013 Sep;15(9):1212-24. doi: 10.1093/neuonc/not055.
43. Mesenchymal Glioma Stem Cells are Maintained by Activated Glycolytic Metabolism Involving Aldehyde Dehydrogenase 1A3. Mao P, Kim SH, Li J, Joshi K, Li PP, Santana-Santos L, Luthra S, Chandran UR, Benos PV, Smith L, Wang MD, Hu B, Cheng SY, Sobol RW, **Nakano I**. *Proc Natl Acad Sci U S A.* 2013 May 21;110(21):8644-9. doi: 10.1073/pnas.1221478110. Epub 2013 May 6. (*selected as Research Highlights by the Association of American Cancer Institutes*)(highlighted in the ASCO POST, http://www.ascopost.com/ViewNews.aspx?nid=5238)
44. Mesenchymal Differentiation Mediated by NF-κB Promotes Radiation Resistance in Glioblastoma. Bhat KPL, Balasubramaniyan V, Vaillant B, Ezhilarasan R, Hummelink K, Hollingsworth F, Wani K, Heathcock L, James JD, Goodman LD, Conroy S, Long L, Lelic N, Wang S, Gumin J, Raj D, Kodama Y, Raghunathan A, Olar A, Joshi K, Pelloski CE, Heimberger A, Kim SH, Cahill DP, Rao G, denDunnen WFA, Boddeke HWGM, Phillips HS, **Nakano I**, Lang FF, Colman H, Sulman EP, and Aldape K. *Cancer Cell* 2013 Sep 9;24(3):331-46. doi: 10.1016/j.ccr.2013.08.001.
45. Brain Tumor Initiating Cells Adapt to Restricted Nutrition through Preferential Glucose Uptake. Flavahan W, Wu Q, Hitomi M, Rahim N, Kim Y, Sloan AE, Weil RJ, **Nakano I**, Sarkaria JN, Stringer BW, Li M, Lathia JD, Rich JN, Hjelmeland AB. *Nature Neuroscience* 2013 Oct;16(10):1373-82. doi: 10.1038/nn.3510.
46. miR-21 in the Extracellular Vesicles (EVs) of Cerebrospinal Fluid (CSF): A Platform for Glioblastoma Biomarker Development. Akers JC, Ramakrishnan V, Kim R, Skog J, **Nakano I**, Pingle S, Kalinina J, Hua W, Kesari S, Mao Y, Breakefield XO, Hochberg FH, Van Meir EG, Carter BS, Chen CC. *PLoS One*. 2013 Oct 21;8(10):e78115. doi: 10.1371/journal.pone.0078115.
47. Genomic analyses reveal broad impact of miR-137 on genes associated with malignant transformation and neuronal differentiation in glioblastoma cells.. Tamim S, Vo DT, Uren PJ, Qiao M, Bindewald E, Kasprzak WK, Shapiro BA, Nakaya HI, Burns SC, Araujo PR, **Nakano I**, Radek AJ, Kuersten S, Smith AD, Penalva LO. *PLoS ONE* 2014 Jan 22;9(1):e85591. doi: 10.1371/journal.pone.0085591.
48. Extracellular vesicles modulate the glioblastoma microenvironment via a tumor suppression signaling network directed by miR-1. Bronisz A, Wang Y, Nowicki MO, Peruzzi P, Ansari K, Ogawa D, Balaj L, Derienzo G, Mineo M, **Nakano I**, Ostrowski MC, Hochberg F, Weissleder R, Lawler SE, Chiocca EA, Godlewski J. *Cancer Res*. 2014 Feb 1;74(3):738-50. doi: 10.1158/0008-5472.CAN-13-2650.
49. Multi-kinase inhibitor C1 triggers mitotic catastrophe of glioma stem cells mainly through MELK kinase inhibition. Minata M, Gu C, Joshi K, Nakano-Okuno M, Hong C, Nguyen CH, Kornblum HI, Molla A, **Nakano I**. *PLoS ONE* 2014 Apr 16;9(4):e92546. doi: 10.1371/journal.pone.0092546. eCollection 2014. PMID: 24739874
50. High-throughput flow cytometry screening reveals a role for junctional adhesion molecule a as a cancer stem cell maintenance factor Lathia JD, Li M, Sinyuk M, Alvarado AG, Flavahan WA, Stoltz K, Rosager AM, Hale J, Hitomi M, Gallagher J, Wu Q, Martin J, Vidal JG, **Nakano I**, Dahlrot RH, Hansen S, McLendon RE, Sloan AE, Bao S, Hjelmeland AB, Carson CT, Naik UP, Kristensen B, Rich JN., *Cell Reports* 2014 Jan 16;6(1):117-29. doi: 10.1016/j.celrep.2013.11.043 Epub 2013 Dec 27
51. The AMPK inhibitor Compound C is a potent AMPK-independent anti-glioma agent. Xiaona Liu X, Chhipa RR, **Nakano I**, and Dasgupta B. *Mol Cancer Ther* 2014 Mar;13(3):596-605. doi: 10.1158/1535-7163.MCT-13-0579.
52. Engulfing Losers by Winners in Cancer: *Do Cancer Stem Cells Catch Eat-Me Signals from non-Stem Cancer Cells?* (Editorial) **Nakano I**. *Future Oncology* 2014 Jun;10(8):1335-8. doi: 10.2217/fon.14.66. PMID: 25052743
53. Maternal embryonic leucine zipper kinase: key kinase for stem cell phenotype in glioma and other cancers. Ganguly R, Hong C, Smith L, Kornblum HI, and **Nakano I**. *Mol Cancer Ther* 2014 Jun;13(6):1393-1398. Epub 2014 May 2. PMID: 24795222
54. Proneural-Mesenchymal Transformation of Glioma Stem Cells: *Therapies cause evolution of target in glioblastoma?* (Editorial) **Nakano I**. *Future Oncology* 2014;10(9):1527-30. doi: 10.2217/fon.14.86. PMID: 25145421
55. Piperlongumine treatment inactivates peroxiredoxin 4, exacerbates endoplasmic reticulum stress, and preferentially kills high-grade glioma cells. Kim TH, Song J, Kim SH, Parikh AK, Xiaokui M, Palanichamy K, Kaur B, Yu J, Yoon SO, **Nakano I**, and Kwon CH. *Neuro-Oncology* 2014 May 30. pii: nou088. PMID: 24879047

1. Stem Cell Signature in Glioblastoma: Therapeutic Development for a Moving Target. **Nakano I**. *J of Neurosurg* 2015 Feb;122(2):324-30. doi: 10.3171/2014.9.JNS132253. Epub 2014 Nov 14. Review. PMID: 25397368
2. Ethics of iPSC-based Clinical Research for Age-Related Macular Degeneration: Patient-Centered Risk-Benefit Analysis. Nakano-Okuno M, Bolan, **Nakano I**. *Stem Cell Reviews and Reports* 2014 Jun 29. PMID: 24974102
3. Detoxification of Oxidative stress in glioma stem cells: Mechanism, Clinical Relevance, and Therapeutic Development. Kim SH, Kwon CH, **Nakano I**. *J of Neurosci Res* 2014 Nov;92(11):1419-24. doi: 10.1002/jnr.23431.
4. Sirt1 is required for oncogenic transformation in neural stem cells and for the survival of cancer cells with neural stemness in a p53 dependent manner. Lee JS, Park JR, Kwon OS, Lee TH, **Nakano I**, Miyoshi H, Chun KH, Park MJ, Lee HJ , Kim SU, and Cha HJ. *Neuro-Oncology* 2014 Aug 5. pii: nou145. PMID: 25096191
5. Crosstalk between glioma initiating cells and endothelial cells drives tumor progression. Jeon HM, Kim SH, Park JB, Kim SH, **Nakano I**, Kim H. *Cancer Research* 2014 Aug 15;74(16):4482-92. doi: 10.1158/0008-5472.CAN-13-1597.
6. Transcription Factors as Master Regulator for Cancer Stemness: *Remove Milk from Fox*? **Nakano I**. *Expert Review of Anticancer Therapy* 2014 Aug;14(8):873-5. doi: 10.1586/14737140.2014.940324. Epub 2014 Jul 14. PMID: 25017123
7. Therapeutic Potential of Targeting Glucose Metabolism in Glioma Stem Cells. **Nakano I**. *Expert Opinion on Therapeutic Targets* 2014 Nov;18(11):1233-6. doi: 10.1517/14728222.2014.944899.
8. EGFR phosphorylation of DCBLD2 recruits TRAF6 and stimulates AKT-promoted tumorigenesis. Feng H, Lopez GY, Kim CK, Alvarez A, Duncan CG, Nishikawa R, Nagane M, Su AJ, Auron PE, Hedberg ML, Wang L, Raizer JJ, Kessler JA, Parsa AT, Gao WQ, Kim SH, Minata M, **Nakano I**, Grandis JR, McLendon RE, Bigner DD, Lin HK, Furnari FB, Cavenee WK, Hu B, Yan H, Cheng SY. *J Clin Invest.* 2014 Jul 25. pii: 73093. doi: 10.1172/JCI73093. PMID: 25061874
9. Survivin as a therapeutic target in Sonic hedgehog-driven medulloblastoma. Brun S, Esparza L, Garcia G, Terry D, Huang JM, Pavlyukov M, Li XN, Grant G, Crawford J, Levy M, Conway E, Smith L, **Nakano I**, Berezov A, Greene M, Wang Q, Markant S, and Wechsler-Reya R. *Oncogene* [in press]
10. Tumoral RANKL activates astrocytes that promote glioma cell invasion through cytokine signaling. Kim JK, Jin X, Sohn YW, Jin X, Jeon HY, Kim EJ, Ham SW, Jeon HM, Chang SY, Oh SY, Yin J, Kim SH, Park JB, **Nakano I**, Kim H. *Cancer Lett.* 2014 Jul 28. pii: S0304-3835(14)00399-1. doi: 10.1016/j.canlet.2014.07.034. PMID: 25079688
11. Inter-cellular cooperation and competition in brain cancers: Lessons from Drosophila and Human studies. Waghmare I, Roebke A, Minata M, Kango-Singh M, and **Nakano I**. *Stem Cells Translational Medicine* 2014 Nov;3(11):1262-8. doi: 10.5966/sctm.2014-0086.
12. Strong therapeutic potential of γ-secretase inhibitor MRK003 for CD44-high and CD133-low glioblastoma initiating cells. Tanaka S, Nakada M, Yamada D, **Nakano I**, Todo T, Ino Y, Hoshii T, Tadokoro Y, Ohta K, Ali MAE, Hayashi Y, Hamada JI, Hirao A. *J Neuro-oncol* 2015 Jan;121(2):239-50. doi: 10.1007/s11060-014-1630-z. Epub 2014 Oct 8. PMID: 25293440
13. Neuronal ceroid lipofuscinosis genes, CLN2, CLN3 and CLN5 are spatially and temporally co-expressed in a developing mouse brain. Fabritius AL, Vesa J, Minye HM, **Nakano I**, Kornblum H, Peltonen L. *Exp Mol Pathol.* 2014 Oct 7. pii: S0014-4800(14)00163-4. doi: 10.1016/j.yexmp.2014.10.003.
14. Targeted Delivery of Tumor Suppressor MicroRNA-1 by Transferrin-Conjugated Lipopolyplex Nanoparticles to Patient-Derived Glioblastoma Stem Cells. Wang X, Huang X, Yang Z, Gallego-Perez D, Ma J, Zhao X, Xie J, **Nakano I**, Lee LJ. *Curr Pharm Biotechnol*. 2014 Oct 30. PMID: 25374033
15. EZH2 protects glioma stem cells from radiation-induced cell death in a MELK/FOXM1-dependent manner. Kim SH, Joshi K, Ezhilarasan R, Myers TR, Siu J, Gu C, Nakano-Okuno M, Taylor D, Minata M, Sulman EP, Lee J, Bhat KP, Salcini AE, and **Nakano I**. *Stem Cell Reports* 2015 Feb 10;4(2):226-38. doi: 10.1016/j.stemcr.2014.12.006. Epub 2015 Jan 15. PMID: 25601206
16. MELK--A Conserved Kinase: Functions, Signaling, Cancer, and Controversy. Ganguly R, Mohyeldin A, Thiel J, Kornblum HI, Beullens M, and **Nakano I**. *Clinical and Translational Medicine* 2015 Mar 7;4:11. doi: 10.1186/s40169-014-0045-y. PMID: 25852826
17. Ras-mediated modulation of pyruvate dehydrogenase activity regulates mitochondrial reserve capacity and contributes to glioblastoma tumorigenesis. Prabhu A, Sarcar B, Miller CR, Kim SH, **Nakano I**, Forsyth P, Chinnaiyan P. *Neuro-Oncology* 2015 Feb 23. pii: nou369. [Epub ahead of print] PMID: 25712957
18. The LIM-only transcription factor LMO2 determines tumorigenic and angiogenic traits in brain cancers. Kim SH, Oh SY, Jin X, Kim EJ, Jeon HM, Beck S, Jin X, Kim JK, Park CG, Chang SY, Yin J, Kim T, Jeon YJ, Song J, Lim YC, **Nakano I**(*co-Corresponding Author*), and Kim H. *Cell Death and Differentiation* 2015 Sep;22(9):1517-25. doi: 10.1038/cdd.2015.7.
19. RNA nanoparticle as a vector for targeted siRNA delivery into glioblastoma mouse model. Lee TJ, Haque F, Shu D, Yoo JY, Li H, Yokel RA, Horbinski C, Kim TH, Kim SH, Kwon CH, **Nakano I**, Kaur B, Guo P, Croce CM. *Oncotarget*. 2015 Jun 20;6(17):14766-76. PMID: 25885522
20. Kinome-wide shRNA Screen Identifies the Receptor Tyrosine Kinase AXL as a Key Regulator for Mesenchymal Glioblastoma Stem-Like Cells. Cheng P, Phillips E, Kim SH, Taylor D, Hielscher T, Puccio L, Hjelmeland A, Lichter P, **NakanoI**\* (*co-corresponding author*), Goidts V\*. *Stem Cell Reports* 2015 May 12;4(5):899-913. doi: 10.1016/j.stemcr.2015.03.005. PMID: 25921812
21. Extracellular vesicles in the biology of brain tumour stem cells-implications for inter-cellular communication, therapy and biomarker development. **Nakano I**, Garnier D, Minata M, Rak J. *Semin Cell Dev Biol.* 2015 Feb 23. pii: S1084-9521(15)00038-5. doi: 10.1016/j.semcdb.2015.02.011.
22. CAR-Engineered NK Cells Targeting Wild-Type EGFR and EGFRvIII Enhance Killing of Glioblastoma and Patient-Derived Glioblastoma Stem Cells. Han J, Chu J, Chan WK, Zhang J, Wang Y, Cohen JB, Victor A, Meisen WH, Kim SH, Grandi P, Wang QE, He X, **Nakano I**, Chiocca EA, Glorioso III JC, Kaur B, Caligiuri MA, and Yu J. *Scientific Reports* 2015 Jul 9;5:11483. doi: 10.1038/srep11483. PMID: 26155832
23. miRNA contents of cerebrospinal fluid extracellular vesicles in glioblastoma patients. Akers JC, Ramakrishnan V, Kim R, Phillips S, Kaimal V, Mao Y, Hua W, Yang I, Fu CC, Nolan J, **Nakano I**, Yang Y, Beaulieu M, Carter BS, Chen CC. *J Neurooncol.* 2015 Apr 23. [Epub ahead of print] PMID: 25903655
24. Predictors of impaired communication in amyotrophic lateral sclerosis patients with tracheostomy-invasive ventilation. Nakayama Y, Shimizu T, Mochizuki Y, Hayashi K, Matsuda C, Nagao M, Watabe K, Kawata A, Oyanagi K, Isozaki E, **Nakano I**. *Amyotroph Lateral Scler Frontotemporal Degener*. 2015;17(1-2):38-46. doi: 10.3109/21678421.2015.1055276. Epub 2015 Jun 29. PMID: 26121169
25. Dynamic epigenetic regulation of glioblastoma tumorigenicity through LSD1 modulation of MYC expression. Kozono D, Li J, Nitta M, Sampetrean O, Gonda D, Kushwaha DS, Merzon D, Ramakrishnan D, Zhu S, Zhu K, Matsui H, Harismendy O, Hua W, Mao Y, Kwon CH, Saya H, **Nakano I**, Pizzo DP, Vandenberg SR, Chen C. *Proc Natl Acad Sci U S A* 2015 Jul 28;112(30):E4055-64. doi: 10.1073/pnas.1501967112. PMID: 26159421
26. Gene expression profiling distinguishes proneural glioma stem cells from mesenchymal glioma stem cells. Chandran UR, Luthra S, Santana-Santos L, Mao P, Kim SH, Minata M, Li J, Benos PV, Hu B, Cheng SY, **Nakano I**, Sobol RW. *Genomics Data* 2015 Sep 1;5:333-336. PMID: 26251826
27. Pigment Epithelium-Derived Factor (PEDF) Expression Induced by EGFRvIII Promotes Self-renewal and Tumor Progression of Glioma Stem Cells. Yin J, Park G, Kim TH, Hong JH, Kim YJ, Jin X, Kang S, Jung JE, Kim JY, Yun H, Lee JE, Kim M, Chung J, Kim H, **Nakano I**, Gwak HS, Yoo H, Yoo BC, Kim JH, Hur EM, Lee J, Lee SH, Park MJ, Park JB. *PLoS Biol*. 2016 Jan 11;14(1):e1002367. doi: 10.1371/journal.pbio.1002367. eCollection 2016 Jan. PMID: 26751204
28. Coordination of self-renewal in glioblastoma by integration of adhesion and microRNA Signaling. Alvarado AG, Turaga SM, Sathyan P, Mulkearns-Hubert EE, Otvos B, Silver DJ, Hale JS, Flavahan WA, Zinn PO, Sinyuk M, Li M, Guda M, Velpula KK, Tsung AJ, **Nakano I**, Vogelbaum MA, Majumder S, Rich JN, Lathia JD. *Neuro-Oncology* 2016 May;18(5):656-66. doi: 10.1093/neuonc/nov196. Epub 2015 Sep 15. PMID: 26374689
29. Histone Deacetylase 6 can impede oncolytic viral replication in glioma. Nakashima H, Kaufmann JK, Wang PY, Nguyen T, Speranza MC, Kasai K, Okemoto K, Otsuki A, **Nakano I**, Fernandez S, Goins WF, Grandi P, Glorioso JC, Lawler S, Cripe TP, and Chiocca EA. *Journal of Clinical Investigation* 125(11):4269-80. doi: 10.1172/JCI80713.
30. Serine/Threonine kinase MLK4 determines Mesenchymal Identity in Glioma Stem Cells in an NF-κB-dependent manner. Kim SH, Ezhilarasan R, Phillips E, Perez DG, Sparks A, Taylor D, Ladner K, Furuta T, Sabit H, Chhipa R, Cho JH, Mohyeldin A, Beck S, Kurozumi K, Kuroiwa T, Iwata R, Asai A, Kim J, Sulman EP, Cheng S, Lee LJ, Nakada H, Guttridge D, DasGupta B, Goidts V, Bhat KP, and **Nakano I**. *Cancer Cell* 2016 Feb 8;29(2):201-13. doi: 10.1016/j.ccell.2016.01.005. PMID: 26859459
31. Senescence from glioma stem cell differentiation promotes tumor growth. Ouchi R, Okabe S, Migita T, **Nakano I**, Seimiya H. *Biochem Biophys Res Commun*. 2016 Jan 14. pii: S0006-291X(16)30071-7. doi: 10.1016/j.bbrc.2016.01.071.
32. SHP-2-upregulated ZEB1 is important for PDGFRalpha-driven glioma epithelial-mesenchymal transition and invasion in mice and humans. Feng H, Zhang L, Zhang W, Li Y, Alvarez Y, Li Z, Wang Y, Song L, Lv D, **Nakano I**, Hu B, and Cheng SY. *Oncogene* 2016 Apr 4. doi: 10.1038/onc.2016.100. [Epub ahead of print] PMID: 27041571
33. G-quadruplex ligand-induced DNA damage response coupled with telomere dysfunction and replication stress in glioma stem cells. Hasegawa D, Okabe S, Okamoto K, **Nakano I**, Shin-Ya K, Seimiya H. *Biochem Biophys Res Commun*. 2016 Feb 26;471(1):75-81. doi: 10.1016/j.bbrc.2016.01.176. PMID: 26845351
34. Extracellular Vesicles from High-Grade Glioma Exchange Diverse Pro-oncogenic Signals That Maintain Intratumoral Heterogeneity. Ricklefs F, Mineo M, Rooj AK, **Nakano I**, Charest A, Weissleder R, Breakefield XO, Chiocca EA, Godlewski J, Bronisz A. *Cancer Res.* 2016 May 15;76(10):2876-81. doi: 10.1158/0008-5472.CAN-15-3432. PMID: 27013191
35. Targeting of glioblastoma cell lines and glioma stem cells by combined PIM kinase and PI3K-p110α inhibition. Iqbal A, Eckerdt F, Bell J, **Nakano I**, Giles FJ, Cheng SY, Lulla RR, Goldman S, Platanias LC. *Oncotarget*. 2016 May 31;7(22):33192-201. doi: 10.18632/oncotarget.8899. PMID: 27120806
36. The Long Non-coding RNA HIF1A-AS2 Facilitates the Maintenance of Mesenchymal Glioblastoma Stem-like Cells in Hypoxic Niches. Mineo M, Ricklefs F, Rooj AK, Lyons SM, Ivanov P, Ansari KI, **Nakano I**, Chiocca EA, Godlewski J, Bronisz A. *Cell Rep.* 2016 Jun 14;15(11):2500-9. doi: 10.1016/j.celrep.2016.05.018. PMID: 27264189
37. Cancer stem cell-secreted macrophage migration inhibitory factor stimulates myeloid derived suppressor cell function and facilitates glioblastoma immune evasion. Otvos B, Silver DJ, Mulkearns-Hubert EE, Alvarado AG, Turaga SM, Sorensen MD, Rayman P, Flavahan WA, Hale JS, Stoltz K, Sinyuk M, Wu Q, Jarrar A, Kim SH, Fox PL, **Nakano I,** Rich JN, Ransohoff RM, Finke J, Kristensen BW, Vogelbaum MA, Lathia JD. *Stem Cells*. 2016 Aug;34(8):2026-39. doi: 10.1002/stem.2393. PMID: 27145382
38. FOXD1-ALDH1A3 signaling is a determinant for the self-renewal and tumorigenicity of mesenchymal glioma stem cells. Cheng P, Wang J, Waghmare I, Sartini S, Coviello V, Kim S, Mohyeldin A, Pavlyukov MS, Zhang Z, Minata M, Valentim CL, Chhipa RR, Bhat KP, Dasgupta B, La Motta C, Kango-Singh M, **Nakano I**. *Cancer Res.* 2016 Aug 28. pii: canres.2860.2015. [Epub ahead of print] PMID: 27569208
39. On-Chip Clonal Analysis of Glioma-Stem-Cell Motility and Therapy Resistance. Gallego-Perez D, Chang L, Shi J, Ma J, Kim SH, Zhao X, Malkoc V, Wang X, Minata M, Kwak KJ, Wu Y, Lafyatis GP, Lu W, Hansford DJ, **Nakano I**, Lee LJ. *Nano Lett.* 2016 Sep 14;16(9):5326-32. doi: 10.1021/acs.nanolett.6b00902. PMID: 27420544
40. A regulatory circuit of miR-125b/miR-20b and Wnt signalling controls glioblastoma phenotypes through FZD6-modulated pathways. Huang T, Alvarez AA, Pangeni RP, M Horbinski C, Lu S, Kim SH, James CD, J Raizer J, A Kessler J, Brenann CW, Sulman EP, Finocchiaro G, Tan M, Nishikawa R, Lu X, **Nakano I**, Hu B, Cheng SY. *Nat Commun.* 2016 Oct 4;7:12885. doi: 10.1038/ncomms12885. PMID: 27698350
41. MNK Inhibition Disrupts Mesenchymal Glioma Stem Cells and Prolongs Survival in a Mouse Model of Glioblastoma. Bell JB, Eckerdt F, Alley K, Magnusson LP, Hussain H, Bi Y, Arslan AD, Clymer J, Alvarez AA, Goldman S, Cheng SY, **Nakano I**, Horbinski C, Davuluri RV, James CD, Platanias LC. *Mol Cancer Res.* 2016 Oct;14(10):984-993. PMID: 27364770.
42. Inhibition of SOAT1 suppresses glioblastoma growth via blocking SREBP-1-mediated lipogenesis. Geng F, Cheng X, Wu X, Yoo JY, Cheng C, Guo JY, Mo X, Ru P, Hurwitz B, Kim S, Otero J, Puduvalli VK, Lefai E, Ma J, **Nakano I**, Horbinski C, Kaur B, Chakravarti A, Guo D. *Clin Cancer Res.* 2016 Nov 1;22(21):5337-5348. PMID: 27281560
43. The stem cell/cancer stem cell marker ALDH1A3 regulates the expression of the survival factor tissue transglutaminase, in mesenchymal glioma stem cells.Sullivan KE, Rojas K, Cerione RA, **Nakano I**, Wilson KF. *Oncotarget*. 2017 Apr 4;8(14):22325-22343. doi: 10.18632/oncotarget.16479. PMID: 28423611
44. Dissecting inherent intratumor heterogeneity in patient-derived glioblastoma culture models. Teng J, Carla da Hora C, Kantar RS, **Nakano I**, Wakimoto H, Batchelor TT, Chiocca EA, Badr CE, Tannous BA. *Neuro Oncol*. 2017 Jan 6. pii: now253. doi: 10.1093/neuonc/now253. PMID: 28062830
45. Feedback Loop Regulation of SCAP/SREBP-1 by miR-29 Modulates EGFR Signaling-Driven Glioblastoma Growth. Ru P, Hu P, Geng F, Mo X, Cheng C, Yoo JY, Cheng X, Wu X, Guo JY, **Nakano I**, Lefai E, Kaur B, Chakravarti A, Guo D. *Cell Rep*. 2017 Jan 24;18(4):1076-1077. doi: 10.1016/j.celrep.2017.01.016. No abstract available. PMID: 28122233
46. MicroRNA Signatures and Molecular Subtypes of Glioblastoma: The Role of Extracellular Transfer. Godlewski J, Ferrer-Luna R, Rooj AK, Mineo M, Ricklefs F, Takeda YS, Nowicki MO, Salińska E, **Nakano I**, Lee H, Weissleder R, Beroukhim R, Chiocca EA, Bronisz A. *Stem Cell Reports*. 2017 May 17. pii: S2213-6711(17)30178-9. doi: 10.1016/j.stemcr.2017.04.024. [Epub ahead of print] PMID: 28528698
47. Transglutaminase 2 inhibition reverses mesenchymal transdifferentiation of glioma stem cells by regulating C/EBPβ signaling. Yin J, Oh YT, Kim JY, Kim SS, Choi E, Kim TH, Hong JH, Chang N, Cho HJ, Sa JK, Kim JC, Kwon HJ, Park S, Lin W, Nakano I, Gwak HS, Yoo H, Lee SH, Lee J, Kim JH, Kim SY, Nam DH, Park MJ, Park JB. *Cancer Res*. 2017 Jul 28. pii: canres.0388.2017. doi: 10.1158/0008-5472.CAN-17-0388. [Epub ahead of print] PMID: 28754668 [PubMed - as supplied by publisher]
48. CDK4/6 inhibition is more active against the glioblastoma proneural subtype. Li M, Xiao A, Floyd D, Olmez I, Lee J, Godlewski J, Bronisz A, Bhat KPL, Sulman EP, **Nakano I**, Purow B. *Oncotarget*. 2017 Jul 21. doi: 10.18632/oncotarget.19429. [Epub ahead of print] PMID: 28751617 [PubMed - as supplied by publisher] Free Article
49. Targeting NEK2 attenuates glioblastoma growth and radioresistance by destabilizing histone methyltransferase EZH2. Wang J, Cheng P, Pavlyukov MS, Yu H, Zhang Z, Kim SH, Minata M, Mohyeldin A, Xie W, Chen D, Goidts V, Frett B, Hu W, Li H, Shin YJ, Lee Y, Nam DH, Kornblum HI, Wang M, **Nakano I**. *J Clin Invest*. 2017 Jul 24. pii: 89092. doi: 10.1172/JCI89092. [Epub ahead of print] PMID: 28737508 [PubMed - as supplied by publisher] Free Article
50. The Fc Domain of Immunoglobulin Is Sufficient to Bridge NK Cells with Virally Infected Cells. Dai HS, Griffin N, Bolyard C, Mao HC, Zhang J, Cripe TP, Suenaga T, Arase H, **Nakano I**, Chiocca EA, Kaur B, Yu J, Caligiuri MA. *Immunity.* 2017 Jul 18;47(1):159-170.e10. doi: 10.1016/j.immuni.2017.06.019. PMID: 28723548 [PubMed - in process]
51. Targeting glioma stem cells in vivo by a G-quadruplex-stabilizing synthetic macrocyclic hexaoxazole. Nakamura T, Okabe S, Yoshida H, Iida K, Ma Y, Sasaki S, Yamori T, Shin-Ya K, **Nakano I**, Nagasawa K, Seimiya H. *Sci Rep*. 2017 Jun 15;7(1):3605. doi: 10.1038/s41598-017-03785-8. PMID: 28620243 [PubMed - in process] Free PMC Article
52. MicroRNA-Mediated Dynamic Bidirectional Shift between the Subclasses of Glioblastoma Stem-like Cells. Rooj AK, Ricklefs F, Mineo M, **Nakano I**, Chiocca EA, Bronisz A, Godlewski J. *Cell Rep*. 2017 Jun 6;19(10):2026-2032. doi: 10.1016/j.celrep.2017.05.040. PMID: 28591575 [PubMed - in process] Free PMC Article
53. SHP2 regulates proliferation and tumorigenicity of glioma stem cells. Roccograndi L, Binder ZA, Zhang L, Aceto N, Zhang Z, Bentires-Alj M, **Nakano I**, Dahmane N, O'Rourke DM. *Journal of Neurooncology* 2017 Aug 29. doi: 10.1007/s11060-017-2610-x. [Epub ahead of print]
54. Combined CDK4/6 and mTOR inhibition is synergistic against glioblastoma via multiple mechanisms. Olmez I, Brenneman B, Xiao A, Serbulea V, Benamar M, Zhang Y, Manigat L, Abbas T, Lee J, **Nakano I**, Godlewski J, Bronisz A, Abounader R, Leitinger N, Purow B. *Clinical Cancer Research*. 2017 Aug 16. pii: clincanres.0803.2017. doi: 10.1158/1078-0432.CCR-17-0803. [Epub ahead of print] PMID: 28814434

BOOK CHAPTERS

1. Stage-Specific and Cell Fate Markers. Ichiro Nakano and Harley I Kornblum. Chapter 3, Neural Stem Cell – Development and Transplantation (with the cover picture). Edited by Jane E Bottenstein, 95-126, 2003
2. Self-renewal signaling pathways in neural stem cells and brain tumor stem cells. Nakano I (*corresponding author*) and Kornblum HI. *Methods in Molecular Biology*. 2009;568:37-56.

OUTREACH PROGRAM

Chinese Medical Research Collaboration Meetings. Description: Travel to China to give seminars in the Beijing International Neurological Forum and at Chongqing Medical University regarding collaboration on medical research 2009 September

Partnership development, Neurosurgical Departments in Chinese Universities (Wuhan University and Xi’an University) 2010 July

Partnership development between Korea University and Ohio State University 2013

## ABSTRACTS *(selected)*

1. Nakano I. Molecular characterization of maternal leucine-zipper kinase (MELK) in central nervous system stem/progenitor cells. Society for Neuroscience, the 33th Annual Meeting, New Orleans. 2003.
2. Nakano I. Maternal Embryonic Leucine-zipper kinase, MELK, regulates proliferation in neural stem and tumor cells. Gordon Conference, Rhod Island, 2004
3. Nakano I. Maternal embryonic leucine-zipper kinase, MELK, is highly expressed in brain tumor progenitors, and regulates proliferation of medulloblastoma. AANS/CNS Section on Tumors Sixth Biennial Satellite Symposium, San Francisco, 2004
4. Nakano I. Maternal embryonic leucine-zipper kinase, MELK, regulates transition of cortical GFAP-positive cells into rapidly amplifying, multipotent progenitors. Society for Neuroscience, the 34th Annual Meeting, San Diego. 2004.
5. Nakano I. Maternal embryonic leucine-zipper kinase (MELK) in neural stem cell, brain tumors, and brain tumor stem cells. UCLA’s Jonsson Cancer Center Research Conference, Los Angeles, 2005
6. Nakano I. Maternal embryonic leucine zipper kinase (MELK) regulates proliferation of brain tumor stem cells. Annual Meeting of American Association of Neurological Surgery, San Francisco, 2006
7. Nakano I. Identification of inhibitors of pediatric brain tumor stem cells. AANS/CNS Section on Pediatric Neurological Surgery, Colorado, 2006
8. Nakano I. Targeted therapy for Pediatric Brain Tumor Stem Cells (I). Brain Tumor Founders’ Collaborative, UCLA, April 2007
9. Nakano I. Targeted therapy for Pediatric Brain Tumor Stem Cells (II). Brain Tumor Founders’ Collaborative, UCLA, May 2007
10. Nakano I. Characterization of inhibitors of pediatric brain tumor stem cells. AANS/CNS Section on Pediatric Neurological Surgery, Miami, Oct 2007
11. Nakano I. Characterization of brain tumor stem cell inhibitors. AANS/CNS Section on Tumors, Chicago 2008.
12. Nakano I. Identification of target compounds for brain tumor stem cells. American Brain Tumor Association, Chicago 2009
13. Nakano I. Siomycin A depletes brain tumor stem cells via the MELK-mediated pathway. AANS/CNS Section on Tumors, New Orleans 2009
14. Nakano I. Siomycin A depletes brain tumor stem cells via the MELK-mediated pathway. Annual Meeting of the Society for Neuroscience, Chicago 2009
15. Nakamura OY, Kornblum HI, and Nakano I. Characterization of maternal embryonic leucine zipper kinase in cancer stem/progenitor cells. Annual Meeting of the American Association of Cancer Research, Washington DC 2010
16. Miyazaki T, Shin-ya K, Hu B, Viapiano M, and Nakano I. G-quadruplex stabilizer, Telomestatin, preferentially induces apoptosis of stem-like glioblastoma cells with less effect on survival of normal stem/progenitor cells. Annual Meeting of the American Association of Cancer Research, Washington DC 2010
17. Jijiwa M, Likhite S, Kwon CH, Viapiano M, Houghton P, and Nakano I. Development of screening system for brain tumor stem cells-targeting chemotherapeutic agents. Annual Meeting of the American Association of Cancer Research, Washington DC 2010
18. Chunyu Gu, Kiran V. Mahasenan, Kaushal Joshi, Snehalata Gupta, Anita Mattson, Chenglong Li, Ichiro Nakano. Structure-based computer-aided drug design to discover novel small molecules that target brain tumor stem cells. Annual Meeting of the Society for Neuro-Oncology, 2010
19. Kaushal Joshi, Takeshi Miyazaki, Abhik Ray Chaudhury, Ichiro Nakano. Development of a novel assay to determine efficacy of anti-cancer agents on GBM. Annual Meeting of the Society for Neuro-Oncology, 2010
20. Lonzhu Piao, Kaushal Joshi, Robert J Lee, Ichiro Nakano. siRNA delivery and silencing by cationic liposomal nanoparticles in brain tumor stem cells. Annual Meeting of the Society for Neuro-Oncology, 2010
21. Habibe Demir, Snehalata Gupta, Abhik Ray Chawdhury, Ichiro Nakano. What are the mechanisms underlying the chemoradioresistance of GBM? 14th Annual Meeting for the Translational Research Cancer Centers Consortium 2011
22. Habibe Demir, Snehalata Gupta, Abhik Ray Chawdhury, Ichiro Nakano. Targeting therapy-resistant glioma cells with novel compounds that inhibit action of survivin. 14th Annual Meeting for the Translational Research Cancer Centers Consortium 2011
23. Ichiro Nakano. Development of a novel assay to determine efficacy of anti-cancer agents on GBM. Annual Meeting of the American Association for Neurological Surgery, Denver 2011
24. Ryosuke Yamada and Ichiro Nakano. A novel thrombospondin-1 mimetic peptide, ABT-898, decreases angiogenesis in a mouse model of glioblastoma multiforme. Annual Meeting of the American Association for Neurological Surgery, Denver 2011
25. Ryosuke Yamada and Ichiro Nakano. A novel thrombospondin-1 mimetic peptide, ABT-898, decreases angiogenesis in a mouse model of glioblastoma multiforme. Annual Meeting of the American Association for Cancer Research, Orlando 2011
26. Chunyu Gu, Ichiro Nakano. Structure-based computer aided drug design to discover novel small molecules that target brain tumor stem cells. Annual Meeting of the American Association for Cancer Research, Orlando 2011
27. Habibe Demir, Ichiro Nakano. Targeting therapy-resistant glioma cells with novel compounds that inhibit action of survivin. Annual Meeting of the American Association for Cancer Research, Orlando 2011
28. Takeshi Mayazaki, Ichiro Nakano.The effects of the G-quadruplex ligand telomestatin to human brain tumor stem cell survival and growth. Annual Meeting of the American Association for Cancer Research, Orlando 2011
29. Mayumi Jijiwa, Ichiro Nakano. Signaling via CD44v6 is associated with the growth of CD44-expressing glioma stem-like cells. Annual Meeting of the American Association for Cancer Research, Orlando 2011
30. Takeshi Mayazaki, Ichiro Nakano. The effects of the G-quadruplex ligand telomestatin to human brain tumor stem cell survival and growth. The 10th Annual Meeting of the International Society for Stem Cell Research, Yokohama, 2012
31. Ping Mao and Ichiro Nakano. Glioma Stem Cell Subtype Specification, Annual Meeting, The Society for Neuro-Oncology, Washington DC, 2012
32. Kaushal Joshi and Ichiro Nakano. MELK-dependent phosphorylation of FOXM1 is essential for mitotic progression of glioma stem cells. Annual Meeting, The American Association for Cancer Research, Washington DC, 2013
33. Ping Mao and Ichiro Nakano. Activation of aldehyde dehydrogenase is essential for growth of mesenchymal glioma stem cells. Annual Meeting, The American Association for Cancer Research, Washington DC, 2013
34. Sunghak Kim and Ichiro Nakano. MESENCHYMAL TRANSFORMATION OF GLIOMA STEM CELLS IS REGULATED BY THE ALDEHYDE DEHYDROGENASE 1A3-MIR99B/LET7E/125A SIGNALING IN A C/EBPB-DEPENDENT MANNER. Annual Meeting, The International Society for Stem Cell Research, Boston, 2013
35. Targeting glioma stem cells by G-quadruplex ligands. Hiroyuki Seimiya, Sachiko Okabe, Yukiko Muramatsu, Takahiro Nakamura, Keisuke Iida, Takao Yamori, Kazuo Nagasawa, Kazuo Shin-ya, Ichiro Nakano. Annual Meeting, The 17th Annual Meeting of the Japanese Association for Molecular Target Therapy of Cancer, Kyoto, 2013
36. Probing the migratory behavior of patient-derived glioma stem cells on a micro-engineered platform - a single cell analysis. Daniel Gallego-Perez, Junyu Ma, Ping Mao, Kwang J. Kwak, Derek J. Hansford, Ichiro Nakano & L. James Lee. The Biomedical Engineering Society (BMES) Annual Meeting, Seattle, 2013
37. Characterization of Glioblastoma Stem Cells. Ranjit Ganguly, Ichiro Nakano. The 11th Annual American Medical Association Research Symposium, National Harbor, 2013
38. Inter-cellular signals within heterogeneous GBM cells induce tumor cell repopulation after radiation treatment. Mutsuko Minata, Sunghak Kim, Ping Mao, Jothi Kaushal, Ichiro Nakano. Society for Neuro-Oncology's 18th Annual Scientific Meeting. San Francisco. 2013
39. Compensatory Proliferation of Glioma Stem Cells. Mutsuko Minata, Ichiro Nakano. The 4th Quadrennial Meeting of the World Federation of Neuro-Oncology held in conjunction with the 18th Annual Meeting of the Society for Neuro-Oncology, San Francisco, California, 2013
40. The MELK/FOXM1 axis is a master regulator of proneural to mesenchymal transition (PMT) in glioma stem cells by controlling EZH2 transcriptional activity. Kaushal Joshi, Ichiro Nakano. Annual Meeting, The American Association for Cancer Research, San Diego, 2014
41. EVOLUTION OF CANCER STEM CELLS IN GLIOMA TO PROMOTE THEIR THERAPY RESISTANT PHENOTYPE. Ichiro Nakano. Annual Meeting, The American Association for Cancer Research, San Diego, 2014
42. Serine/Threonine kinase MLK4 is a master regulator for Mesenchymal Glioma Stem Cell survival and growth. Sunghak Kim, Ichiro Nakano. AACR Cellular Heterogeneity in the Tumor Microenvironment. San Diego, 2014
43. Egfr phosphorylation of dcbld2 recruits traf6 and stimulates akt-promoted tumorigenesis. Cheng S, Feng H, Lopez GY, Kim CK, Duncan CG, Alvarez A, Nishikawa R, Nagane M, Su AJ, Auron PE, Hedberg ML, Wang L, Grandis JR, McLendon RE, Bigner DD, Nakano I, Joshi K, Kim S, Lin HK, Furnari FB, Cavenee WK, Hu B, Yan H, Cheng SY. Annual Meeting for *Society for Neuro-Oncology*. 2014
44. Interplay of lipid droplets and autophagy regulates glioblastoma survival.Guo D, Geng F, Aggarwal R, Liu J, Yoo JY, Guo Q, Guo JY, Hurwitz B, Ru P, Cheng C, Joshi K, Nakano I, Kaur B, Chakravarti A. Annual Meeting for *Society for Neuro-Oncology*. 2014
45. Irradiation establishes CD133-/CD109+ mesenchymal identity in glioma stem cells. Mutsuko Minata, Songjian Lu, Limei Hu, Jason Siu, Ranjit Ganguly, Kaushal Joshi, Wei Zhang, Krishna Bhat, Xinghua Lu,Shi-Yuan Cheng, Ichiro Nakano. Cancer Stem Cell Conference, Cleveland 2014
46. Extracellular Vesicle-mediated Crosstalk between cancer stem cells and non-cancer stem cells promote radioresistance of GBM. Mutsuko Minata, Songjian Lu, Sung-Hak Kim, Marat S Pavlyukov, Ahmed Mohyeldin, Peng Cheng, Jason Siu, Bo Hu, Xinghua Lu, Shi-Yuan Cheng, Krishna Bhat, Ichiro Nakano. Stem cell summit, Boston 2015
47. Crosstalk between stem and non-stem cells in glioblastoma promotes radioresistance in a CD109-dependent manner. Mutsuko Minata, Sunghak Kim, Marat PavliuKov, Jia Wang, Svetlana Komarova, Jun Wang, Ichiro Nakano, AACR, New Orleans 2016
48. Intercellular Transfer of Splicing Factors via Extracellular Vesicles Promotes Glioblastoma Growth and Therapy Resistance. M.S. Pavlyukov, A. Mohyeldin, V.O. Shender, M. Minata, J. Wang, D. Chen, S. Kim, N.V. Antipova, M.I. Shakhparonov, I. Nakano. Experimental biology conference, San Diego 2016
49. Serine/Threonine kinase MLK4 is a master regulator for Mesenchymal Glioma Stem Cell survival and growth. Sung-Hak Kim1, Ravesanker Ezhilarasan2, Katherine Ladner3, Denis Guttridge3, Biplab DasGupta4 ,Krishna P. Bhat2,V Goidts5, James Walker6 and Ichiro Nakano1Keystone symposium Colorado 2016
50. MLK4 is Required for Metastasis Intitation in the Brain. Alsheikh H., Minata M., Yamaguchi S., Harada S., Peker D., Samant R., Tannous B., Bhat K., Cerione R., Zhang S., Nakano I. SNO 2017
51. Clinical development targeting AXL in recurrent glioblastoma. Hirokazu S., Kang KD, Nabors B., Norian L., Hambardzumyan D., Dasgupta B., Nakada M., Nakano I. SNO 2017.
52. Crosstalk of glioma stem cells with vascular endothelial cells persists their proneural phenotype and therapy resistance via Endocan-CD11a interaction. Bastola, S., Pavlyukov M., Ghochani Y., Zhang S., Yu H., Kawagichi R., Coppola G., Yamaguchi S., Wang J., Komarova S., Chandrashekar D.S., Varambally S., Kornblum H., Nakano I. SNO 2017
53. The HDAC inhibitor AR42 attenuates crosstalk between two mutually-exclusive glioma stem cell subtypes and augments immunotherapy with PD-1 checkpoint blockade. Yu H., Pavlykov M., Zhang S., Bastola S., Minata M., Alsheikh H., Kang K., Norian L., Kagaha S., Naknao I. SNO 2017
54. Crosstalk with Vascular Endothelial Cells Drives Proneural Glioma Stem Cell Proliferation through the Upregulated NTF3/TrkB Pathway. Zhang S., Yu H., Bastola S., Minata M., Alsheikh H., Kang K., Nakano, I. SNO2017