

November 01, 2017	Exploration of melanoma metastases in mice brains using endogenous contrast photoacoustic imaging	Photoacoustic imaging (PAI) provides real time non-invasive and contrast agent free monitoring of some endogenous compounds concentrations that provid
March 01, 2022	Xenon Nanobubbles for the Image-Guided Preemptive Treatment of Acute Ischemic Stroke via Neuroprotection and Microcirculatory Restoration	Early lesion site diagnosis and neuroprotection are crucial to the theranostics of acute ischemic stroke.
November 02, 2021	A novel neuroinflammation-responsive hydrogel based on mimicking naked mole rat brain microenvironment retards neurovascular dysfunction and cognitive decline in Alzheimer's disease	Neuroinflammation is one of the major processes that trigger neuropathological amyloid- β ($A\beta$) deposition and contribute to Alzheimer's disease (AD) p
November 02, 2021	Early Detection and Reversal of Cell Apoptosis Induced by Focused Ultrasound-Mediated Blood-Brain Barrier Opening	Focused ultrasound (FUS) combined with microbubbles (MBs) has recently emerged as a potential approach to open the blood-brain barrier (BBB) for deliv
August 09, 2021	Post-event application of neurotrophin protects against ischemic insult toward better outcomes in a murine model of subarachnoid hemorrhage	Early brain injury (EBI) is closely linked to the development of delayed cerebral ischemia and poor outcomes after aneurysmal subarachnoid hemorrhage
January 28, 2021	Experimental Myocardial Infarction Elicits Time-Dependent Patterns of Vascular Hypoxia in Peripheral Organs and in the Brain	Aims: Microvascular alterations occurring after myocardial infarction (MI) may represent a risk factor for multi-organ failure.
January 04, 2021	Brain-targeted hypoxia-inducible factor stabilization reduces neonatal hypoxic-ischemic brain injury	Hypoxia-inducible factor-1 α (HIF1 α) is a major regulator of cellular adaptation to hypoxia and oxidative stress, and recent advances of prolyl-4-hydro
November 03, 2020	Harnessing the Secretome of Mesenchymal Stromal Cells for Traumatic Spinal Cord Injury: Multi-cell Comparison and Assessment of In Vivo Efficacy	Cell therapy offers significant promise for traumatic spinal cord injury (SCI), which despite many medical advances, has limited treatment strategies.
October 20, 2020	Ultrasound with microbubbles improves memory, ameliorates pathology and modulates hippocampal proteomic changes in a triple transgenic mouse model of Alzheimer's disease	Alzheimer's disease (AD) is a progressive neurodegenerative disease manifested by cognitive impairment.
October 16, 2020	Engineering of SPECT/Photoacoustic Imaging/Antioxidative Stress Triple-Function Nanoprobe for Advanced Mesenchymal Stem Cell Therapy of Cerebral Ischemia	The precise transplantation, long-term tracking, and maintenance of stem cells with maximizing therapeutic effect are significant challenges in stem c
September 09, 2020	In vivo photoacoustic guidance of stem cell injection and delivery for regenerative spinal cord therapies	Significance: Stem cell therapies are of interest for treating a variety of neurodegenerative diseases and injuries of the spinal cord.
September 09, 2020	Vascular contributions to 16p11.2 deletion autism syndrome modeled in mice	While the neuronal underpinnings of autism spectrum disorder (ASD) are being unraveled, vascular contributions to ASD remain elusive.
September 09, 2020	Real-Time Noninvasive Bioluminescence, Ultrasound and Photoacoustic Imaging in NF κ B-RE-Luc Transgenic Mice Reveal Glia Maturation Factor-Mediated Immediate and Sustained Spatio-Temporal Activation of NF κ B Signaling Post-Traumatic Brain Injury in a Gender-	Neurotrauma especially traumatic brain injury (TBI) is the leading cause of death and disability worldwide.
July 01, 2020	Early cerebrovascular and long-term neurological modifications ensue following juvenile mild traumatic brain injury in male mice	Clinical evidence suggests that a mild traumatic brain injury occurring at a juvenile age (jmTBI) may be sufficient to elicit pathophysiological modif

June 01, 2020	Prussian blue nanocubes as a multimodal contrast agent for image-guided stem cell therapy of the spinal cord	Translation of stem cell therapies to treat injuries and diseases of the spinal cord is hindered by lack of real-time monitoring techniques to guide r
May 14, 2020	Nanostructural Control Enables Optimized Photoacoustic–Fluorescence–Magnetic Resonance Multimodal Imaging and Photothermal Therapy of Brain Tumor	The performance of current multimodal imaging contrast agents is often constrained by the tunability of nanomaterial structural design.
January 01, 2020	Cell Fate Potential of NG2 Progenitors	Determining the origin of different glial subtypes is crucial to understand glial heterogeneity, and to enhance our knowledge of glial and progenitor
January 01, 2020	In vivo photoacoustic imaging dynamically monitors the structural and functional changes of ischemic stroke at a very early stage	Ischemic stroke (IS) is one of the leading causes of death and accounts for 85% of stroke cases.
January 01, 2020	Non-invasive ultrasound detection of cerebrovascular changes in a mouse model of TBI	carotid arteries of mice exposed to a controlled cortical impact.
January 01, 2020	Alteration of the brain methylation landscape following postnatal inflammatory injury in rat pups	Preterm infants are vulnerable to inflammation-induced white matter injury (WMI), which is associated with neurocognitive impairment and increased ris
January 01, 2020	Transcranial Photoacoustic Detection of Blood-Brain Barrier Disruption Following Focused Ultrasound-Mediated Nanoparticle Delivery	Purpose: Blood-brain barrier disruption (BBBD) is of interest for treating neurodegenerative diseases and tumors by enhancing drug delivery.
October 01, 2019	Assessing therapeutic response non-invasively in a neonatal rat model of acute inflammatory white matter injury using high-field MRI	Perinatal infection and inflammatory episodes in preterm infants are associated with diffuse white matter injury (WMI) and adverse neurological outcom
January 01, 2019	Photoacoustic imaging of gold nanorods in the brain delivered via microbubble-assisted focused ultrasound: a tool for in vivo molecular neuroimaging	The protective barriers of the CNS present challenges during the treatment and monitoring of diseases.
January 01, 2019	Central action of rapamycin on early ischemic injury and related cardiac depression following experimental subarachnoid hemorrhage	Early brain injury and related cardiac consequences play a key role in the devastating outcomes after subarachnoid hemorrhage (SAH).
January 01, 2019	Activatable Small Molecule Photoacoustic Probes that Cross the Blood–Brain Barrier for Visualization of Copper(II) in Mice with Alzheimer's Disease	Copper enrichment in the brain is highly related to Alzheimer's disease (AD) pathogenesis, but in vivo tracing of Cu ²⁺ in the brain by imaging techniques
December 05, 2018	Persistent reduction in sialylation of cerebral glycoproteins following postnatal inflammatory exposure	Background: The extension of sepsis encompassing the preterm newborn's brain is often overlooked due to technical challenges in this highly vulnerable
December 03, 2018	Splenic involvement in umbilical cord matrix-derived mesenchymal stromal cell-mediated effects following traumatic spinal cord injury	Background: The spleen plays an important role in erythrocyte turnover, adaptive immunity, antibody production, and the mobilization of monocytes/macr
October 12, 2018	Sonodynamic Therapy on Intracranial Glioblastoma Xenografts Using Sinoporphyrin Sodium Delivered by Ultrasound with Microbubbles	—Sonodynamic therapy (SDT) is a promising noninvasive method for cancer treatment.

September 01, 2018	Laser-activated perfluorocarbon nanodroplets: a new tool for blood brain barrier opening	A major obstacle in the monitoring and treatment of neurological diseases is the blood brain barrier (BBB), a semipermeable barrier that prevents the
July 31, 2018	Immune response mediates cardiac dysfunction after traumatic brain injury	Cardiovascular complications are common after TBI and are associated with increased morbidity and mortality.
April 20, 2018	Magnetic resonance and photoacoustic imaging of brain tumor mediated by mesenchymal stem cell labeled with multifunctional nanoparticle introduced via carotid artery injection	OBJECTIVE: To evaluate the feasibility of visualizing bone marrow-derived human mesenchymal stem cells (MSCs) labeled with a gold-coated magnetic reso
April 20, 2018	Abstract 3109: Ultrasound-mediated delivery and distribution of polymeric nanoparticles in the normal brain parenchyma and melanoma metastases	The blood-brain barrier (BBB) prevents the passage of nearly all drugs into the brain, hindering brain cancer treatment.
April 19, 2018	Quantifying solid stress and elastic energy from excised or in situ tumors	Solid stress, distinct from both tissue stiffness and fluid pressure, is a mechanical stress that is often elevated in both murine and human tumors.
February 23, 2018	MicroRNA-378 enhances radiation response in ectopic and orthotopic implantation models of glioblastoma	Glioblastoma multiforme (GBM) is the most common and highly malignant primary brain tumor, which is virtually incurable due to its therapeutic resista
January 01, 2018	Touch and tactile neuropathic pain sensitivity are set by corticospinal projections	Current models of somatosensory perception emphasize transmission from primary sensory neurons to the spinal cord and on to the brain1–4.
January 01, 2018	Platelet bio-nanobubbles as microvascular recanalization nanoformulation for acute ischemic stroke lesion theranostics	
January 01, 2018	Highly Crystalline Multicolor Carbon Nanodots for Dual-Modal Imaging-Guided Photothermal Therapy of Glioma	Imaging-guided site-specific photothermal therapy (PTT) of glioma and other tumors in central nervous system presents a great challenge for the curren
January 01, 2018	Caveolin1 Identifies a Specific Subpopulation of Cerebral Cortex Callosal Projection Neurons (CPN) Including Dual Projecting Cortical Callosal/Frontal Projection Neurons (CPN/FPN)	The neocortex is composed of many distinct subtypes of neurons that must form precise subtype-specific connections to enable the cortex to perform com
October 05, 2017	A cerebellar window for intravital imaging of normal and disease states in mice	The cerebellum is a prominent part of the vertebrate hindbrain that is critically involved in the regulation of important body functions such as movem
June 01, 2017	Astrocyte heme oxygenase-1 reduces mortality and improves outcome after collagenase-induced intracerebral hemorrhage	Pharmacotherapies that increase CNS expression of heme oxygenase-1 (HO-1) and other antioxidant proteins have improved outcome in experimental models
February 28, 2017	Use of high-frequency ultrasound to study the prenatal development of cranial neural tube defects and hydrocephalus in Gldc -deficient mice	OBJECTIVE We used non-invasive high frequency ultrasound (HFUS) imaging to investigate embryonic brain development in a mouse model for neural tube de
February 02, 2017	Stellate cells drive maturation of the entorhinal-hippocampal circuit	The neural representation of space relies on a network of entorhinal-hippocampal cell types with firing patterns tuned to different abstract features

February 01, 2017	Single-Cell Analysis of SMN Reveals Its Broader Role in Neuromuscular Disease	The mechanism underlying selective motor neuron (MN) death remains an essential question in the MN disease field.
January 26, 2017	Ganglionic GFAP+ glial Gq-GPCR signaling enhances heart functions in vivo	The sympathetic nervous system (SNS) accelerates heart rate, increases cardiac contractility, and constricts resistance vessels.
January 01, 2016	User-independent diffusion tensor imaging analysis pipelines in a rat model presenting ventriculomegalia: A comparison study	Automated analysis of diffusion tensor imaging (DTI) data is an appealing way to process large datasets in an unbiased manner.
January 01, 2016	The brain microenvironment mediates resistance in luminal breast cancer to PI3K inhibition through HER3 activation	Although targeted therapies are often effective systemically, they fail to adequately control brain metastases.
January 01, 2016	Fetal Alcohol Exposure Alters Blood Flow and Neurological Responses to Transient Cerebral Ischemia in Adult Mice	Background: Prenatal alcohol exposure (PAE) can result in physical and neurocognitive deficits that are collectively termed "fetal alcohol spectrum di
January 01, 2016	Photoacoustic Imaging of Human Mesenchymal Stem Cells Labeled with Prussian Blue–Poly(L-lysine) Nanocomplexes	Acoustic imaging is affordable and accessible without ionizing radiation.
January 01, 2016	Optical clearing and fluorescence deep-tissue imaging for 3D quantitative analysis of the brain tumor microenvironment	© 2017 The Author(s) Background: Three-dimensional visualization of the brain vasculature and its interactions with surrounding cells may shed light o
January 01, 2016	Cerebellar Exposure to Cell-Free Hemoglobin Following Preterm Intraventricular Hemorrhage: Causal in Cerebellar Damage?	Decreased cerebellar volume is associated with intraventricular hemorrhage (IVH) in very preterm infants and may be a principal component in neurodeve
December 01, 2016	Acute cardiac support with intravenous milrinone promotes recovery from early brain injury in a murine model of severe subarachnoid hemorrhage	Early brain injury/ischemia (EBI) is a serious complication early after subarachnoid hemorrhage (SAH) that contributes to development of delayed cereb
December 01, 2016	Challenging cardiac function post-spinal cord injury with dobutamine	There is general consensus that spinal cord injuries (SCI) above T6 result in altered sympathetic control of the heart, which negatively influences car
September 01, 2016	Myocardial Ischemia/Reperfusion impairs neurogenesis and hippocampal-dependent learning and memory	The incidence of cognitive impairment in cardiovascular disease (CVD) patients has increased, adversely impacting quality of life and imposing a signi
May 10, 2016	Functional and anatomical evidence of cerebral tissue hypoxia in young sickle cell anemia mice	Cerebral ischemia is a significant source of morbidity in children with sickle cell anemia; however, the mechanism of injury is poorly understood.
February 01, 2016	Preclinical Efficacy of Ado-trastuzumab Emtansine in the Brain Microenvironment	Background: Central nervous system (CNS) metastases represent a major problem in the treatment of human epidermal growth factor receptor 2 (HER2)–posi
January 01, 2015	Exploring Targeted Contrast-Enhanced Ultrasound to Detect Neural Inflammation: An Example of Standard Nomenclature	Targeted contrast-enhanced ultrasound (TCEUS) is an innovative method of molecular imaging used for detection of inflammatory biomarkers in vivo.

July 01, 2015	Prophylactic Edoxaban Prevents Transient Hypoxic-Ischemic Brain Injury	Background and Purpose— Hypoperfusion-induced thrombosis is an important mechanism for postsurgery stroke and cognitive decline, but there are no per
January 07, 2015	Theranostic USPIO-Loaded Microbubbles for Mediating and Monitoring Blood-Brain Barrier Permeation.	Efficient and safe drug delivery across the blood-brain barrier (BBB) remains to be one of the major challenges of biomedical and (nano-) pharmaceutical
January 01, 2015	Quantitative correlational study of microbubble-enhanced ultrasound imaging and magnetic resonance imaging of glioma and early response to radiotherapy in a rat model	Purpose: Radiotherapy remains a major treatment method for malignant tumors.
January 01, 2015	A New Acute Impact-Compression Lumbar Spinal Cord Injury Model in the Rodent	Traumatic injury to the lumbar spinal cord results in complex central and peripheral nervous tissue damage causing significant neurobehavioural deficit
November 01, 2014	Very High Resolution Ultrasound Imaging for Real-Time Quantitative Visualization of Vascular Disruption after Spinal Cord Injury	Spinal cord injury (SCI) is characterized by vascular disruption with intramedullary hemorrhage, alterations in blood- spinal cord barrier integrity,
June 17, 2014	Peripheral nervous system progenitors can be reprogrammed to produce myelinating oligodendrocytes and repair brain lesions.	Neural crest stem cells (NCSCs) give rise to the neurons and glia of the peripheral nervous system (PNS).
December 26, 2013	Imaging of an Inflammatory Injury in the Newborn Rat Brain with Photoacoustic Tomography	BACKGROUND: The precise assessment of cerebral saturation changes during an inflammatory injury in the developing brain, such as seen in periventricular
November 06, 2013	Selective Permeabilization of the Blood-Brain Barrier at Sites of Metastasis	BACKGROUND: Effective chemotherapeutics for primary systemic tumors have limited access to brain metastases because of the blood-brain barrier (BBB).
May 01, 2013	SPIO-conjugated, doxorubicin-loaded microbubbles for concurrent MRI and focused-ultrasound enhanced brain-tumor drug delivery	The blood-brain barrier (BBB) can be temporarily and locally opened by focused ultrasound (FUS) in the presence of circulating microbubbles (MBs).
April 10, 2013	Lmo4 Establishes Rostral Motor Cortex Projection Neuron Subtype Diversity	The mammalian neocortex is parcellated into anatomically and functionally distinct areas.
March 14, 2013	A Spinal Cord Window Chamber Model for In Vivo Longitudinal Multimodal Optical and Acoustic Imaging in a Murine Model	In vivo and direct imaging of the murine spinal cord and its vasculature using multimodal (optical and acoustic) imaging techniques could significantly
January 01, 2011	High-Frequency Ultrasound in the Evaluation of Cerebral Intraventricular Haemorrhage in Preterm Rabbit Pups	Cerebral intraventricular haemorrhage (IVH) is the most common cause of severe neurologic impairment following preterm birth in human infants.
January 01, 2011	ROR Beta induces barrel-like neuronal clusters in the developing neocortex	Neurons in layer IV of the rodent whisker somatosensory cortex are tangentially organized in periodic clusters called barrels, each of which is innervated
September 15, 2011	Mast Cell Targeting Hampers Prostate Adenocarcinoma Development but Promotes the Occurrence of Highly Malignant Neuroendocrine Cancers	Mast cells (MC) are c-Kit-expressing cells, best known for their primary involvement in allergic reactions, but recently reappraised as important players

September 01, 2011	Functional micro-ultrasound imaging of rodent cerebral hemodynamics.	Healthy cerebral microcirculation is crucial to neuronal functioning.
April 29, 2011	Preclinical Models for Neuroblastoma: Establishing a Baseline for Treatment	BACKGROUND: Preclinical models of pediatric cancers are essential for testing new chemotherapeutic combinations for clinical trials.
January 01, 2010	High-Resolution Ultrasound in Research of Mouse Orthotopic Glioma and Ultrasound-Guided Cell Implant	The purpose is to evaluate the feasibility of imaging mouse brain with high resolution ultrasound (HiRes US), and generation of mouse brain tumor (gli
September 01, 2010	In vivo imaging of cerebral hemodynamics using high-frequency micro-ultrasound.	Assessment of cerebral vascular response is important in neuroscience research.
February 24, 2010	Origin and Molecular Specification of Globus Pallidus Neurons	The mechanisms controlling the assembly of brain nuclei are poorly understood.
February 23, 2010	Area-specific temporal control of corticospinal motor neuron differentiation by COUP-TFI	Transcription factors with gradients of expression in neocortical progenitors give rise to distinct motor and sensory cortical areas by controlling th
July 01, 2009	Lmo4 and Clim1 Progressively Delineate Cortical Projection Neuron Subtypes during Development	Molecular controls over the development of the exceptional neuronal subtype diversity of the cerebral cortex are now beginning to be identified.
March 01, 2009	Neural progenitors of the postnatal and adult mouse forebrain retain the ability to self-replicate, form neurospheres, and undergo multipotent differentiation in vivo.	Somatic stem cells are reservoirs to replace lost cells or damaged tissue.