

REASONS FOR NOMINATION

(min. 120 words, max 400 words)

List reason(s) why your candidate merits election to the Europasche Akademie der Naturwissenschaften (European Academy of Natural Sciences). Explanations such as “The candidate is outstanding in his field” are not substantial. Evidence and examples should be given why the candidate is outstanding in his/her field. The first reason you give has to be a statement that can be used as citation describing the candidate’s excellence. For non-European candidates, provide evidence of sustained collaboration with European institutions and European centres of scholarship.

Professor Liwei Zhang has devoted himself to Chinese neurosurgery development for over 38 years, mainly in clinical and basic research of skull-base and brainstem lesions, especially focusing on brainstem glioma. He has made great contributions in researches and clinical applications of key techniques for diagnosis and treatment of skull-base and brainstem tumors. He has led to foundation the National Brain Tumor Registry of China and the collaborative research network of brain tumor. He has established the Skull-base Tumor Multi-disciplinary Cooperation System in China. He has compiled the Chinese Expert Consensus on Multidisciplinary Diagnosis and Treatment of Acoustic Neuroma and Chinese Expert Consensus on Comprehensive Diagnosis and Treatment of Brainstem Glioma. Besides, he has compiled the Explanations of Clinical Technical Path of Health Ministry. Every year, he completes over 200 complicated Skull-base surgeries. He has made great breakthroughs in basic research of brainstem glioma worldwide and previously collaborated academically with institutions and universities in France and the Netherlands. For example, he has identified somatic gain-of-function PPM1D mutations of brainstem glioma (Nat Genet. 2014 Jul;46(7):726-30) and other genetic and immune features of this malignant brain tumor (Oncotarget. 2017 Jul 28;8(47):82571-82582), and he has built up the patient-derived DIPG cells preserve stem-like characteristics and generate orthotopic tumors (Oncotarget. 2017 Jul 28;8(44):76644-76655), also he also identified deep sequencing of CSF ctDNA as a reliable technique for detecting tumor-specific alterations in brainstem tumors, offering an alternative approach to stereotactic biopsy for molecular profiling of brainstem tumors (Acta Neuropathol. 2018 Nov 20), moreover, he had identified the integrated genomic and epigenomic landscape of brainstem glioma, these findings indicate that the integration of genetic and epigenetic data can facilitate better understanding of brainstem gliomagenesis and classification, and guide future studies for the development of novel treatments for this disease (Nat Commun. 2020 Jun 17;11(1):3077). In the last 5 years, as the first author (or corresponding author) or coauthor, he has published more than 200 scientific research papers in international well-known academic journals, such as Nature Genetics, Nature Communications and Acta Neuropathologica, etc, with a single-paper-highest influencing factor of 35. As the editor in chief, he has published 10 professional monographs. As the first accomplisher, he has led the team to obtain one National Science and Technology Progress Award of China and 8 scientific and technological awards at the provincial and ministerial level. As the supervisor, he has successfully completed training more than 40 Master’s and Doctoral students.

ACHIEVEMENTS

(max. 300 words)

List important functions in academic or international bodies or in funding agencies, journals, conferences. List (most) important Prizes, Awards, and election into national Academies, but do not list irrelevant memberships in association, organisation, committees etc. These should be national and international prizes, or other honours, e.g. medals recognising sustained academia distinction; election to national Academies. Fellowships in scientific organisations and international associations etc. are not significant recognition.

He is the member of Academia Europaea (NO.5743). He acts as the Associate Director, National Center for Clinical Medicine of Neurological Diseases. He acts as the Senior Advisor of Asia-Pacific Smart Health Demonstration Zone Project, United Nations for Projects Services. Also, he acts as the State Council Expert for Special Allowance, Outstanding Mid-Aged Expert of the Ministry of Public Health. Besides, he acts as the Expert Reviewer of Healthcare Research Projects of Education Ministry, Expert Reviewer of Senior Title Assessment of Healthcare Research Projects of Health Ministry, Expert Reviewer of Clinical Technical Path of Ministry of Health, Expert Reviewer of National Science and Technology Major Project of the Ministry of Science and Technology of China, Expert Member of National Natural Science Foundation of China. He acts as the Associate Editor of Chinese Journal of Neurosurgery, chief editor of Neuro-oncology Part of Chinese edition of Neurosurgery. He won the National Science and Technology Progress Award of China of Second Prize in 2018 (Project Name, Treatment Strategy and Application of Key Technologies in Auditory Protection and Reconstruction of Treating Acoustic Neuroma).

PUBLICATIONS

(max. 10 works)

List the candidate's major and most recent publications and provide evidence of (scientific) impact where available or appropriate.

1. Zhang L, Chen LH, Wan H, Yang R, Wang Z, Feng J, Yang S, Jones S, Wang S, Zhou W, Zhu H, Killela PJ, Zhang J, Wu Z, Li G, Hao S, Wang Y, Webb JB, Friedman HS, Friedman AH, McLendon RE, He Y, Reitman ZJ, Bigner DD, Yan H. Exome sequencing identifies somatic gain-of-function PPM1D mutations in brainstem gliomas. *Nat Genet.* 2014 Jul;46(7):726-30. doi: 10.1038/ng.2995. Epub 2014 Jun 1. PMID: 24880341; PMCID: PMC4073211.
2. Chen LH, Pan C, Diplas BH, Xu C, Hansen LJ, Wu Y, Chen X, Geng Y, Sun T, Sun Y, Zhang P, Wu Z, Zhang J, Li D, Zhang Y, Wu W, Wang Y, Li G, Yang J, Wang X, Xu C, Wang S, Waitkus MS, He Y, McLendon RE, Ashley DM, Yan H, Zhang L. The integrated genomic and epigenomic landscape of brainstem glioma. *Nat Commun.* 2020 Jun 17;11(1):3077. doi: 10.1038/s41467-020-16682-y. PMID: 32555164; PMCID: PMC7299931.
3. Pan C, Diplas BH, Chen X, Wu Y, Xiao X, Jiang L, Geng Y, Xu C, Sun Y, Zhang P, Wu W, Wang Y, Wu Z, Zhang J, Jiao Y, Yan H, Zhang L. Molecular profiling of tumors of the brainstem by sequencing of CSF-derived circulating tumor DNA. *Acta Neuropathol.* 2019 Feb;137(2):297-306. doi: 10.1007/s00401-018-1936-6. Epub 2018 Nov 20. PMID: 30460397; PMCID: PMC7523750.
4. Zhang L, Li D, Xiao D, Couldwell WT, Ohata K. Improving brain health by identifying structure-function relations in patients with neurosurgical disorders. *BMJ.* 2020 Oct 9;371:m3690. doi: 10.1136/bmj.m3690. PMID: 33037010; PMCID: PMC7541034.
5. Zhang L, Jia W, Ji N, Li D, Xiao D, Shan GL, Wang T, Xiao X. Construction of the National Brain Tumor Registry of China for better management and more efficient use of data: a protocol. *BMJ Open.* 2021 Jan 17;11(1):e040055. doi: 10.1136/bmjopen-2020-040055. PMID: 33455925; PMCID: PMC7813366.
6. Zhao X, Li D, Qiao Z, Wang K, Chen Q, Pan C, Wu Y, Xiao D, Xi T, Zhang L, Ai L. 11C-methionine PET imaging characteristics in children with diffuse intrinsic pontine gliomas and

relationship to survival and H3 K27M mutation status. *Eur J Nucl Med Mol Imaging*. 2023 May;50(6):1709-1719. doi: 10.1007/s00259-022-06105-z. Epub 2023 Jan 26. PMID: 36697961.

7. Sun Y, Yan K, Wang Y, Xu C, Wang D, Zhou W, Guo S, Han Y, Tang L, Shao Y, Shan S, Zhang QC, Tang Y, Zhang L, Xi Q. Context-dependent tumor-suppressive BMP signaling in diffuse intrinsic pontine glioma regulates stemness through epigenetic regulation of CXXC5. *Nat Cancer*. 2022 Sep;3(9):1105-1122. doi: 10.1038/s43018-022-00408-8. Epub 2022 Aug 1. PMID: 35915262.

8. Shan S, Chen J, Sun Y, Wang Y, Xia B, Tan H, Pan C, Gu G, Zhong J, Qing G, Zhang Y, Wang J, Wang Y, Wang Y, Zuo P, Xu C, Li F, Guo W, Xu L, Chen M, Fan Y, Zhang L, Liang XJ. Functionalized Macrophage Exosomes with Panobinostat and PPM1D-siRNA for Diffuse Intrinsic Pontine Gliomas Therapy. *Adv Sci (Weinh)*. 2022 Jul;9(21):e2200353. doi: 10.1002/advs.202200353. Epub 2022 May 18. PMID: 35585670; PMCID: PMC9313473.

9. Zhuo Z, Qu L, Zhang P, Duan Y, Cheng D, Xu X, Sun T, Ding J, Xie C, Liu X, Haller S, Barkhof F, Zhang L, Liu Y. Prediction of H3K27M-mutant brainstem glioma by amide proton transfer-weighted imaging and its derived radiomics. *Eur J Nucl Med Mol Imaging*. 2021 Dec;48(13):4426-4436. doi: 10.1007/s00259-021-05455-4. Epub 2021 Jun 16. PMID: 34131804.

10. Zhou J, Ji N, Wang G, Zhang Y, Song H, Yuan Y, Yang C, Jin Y, Zhang Z, Zhang L, Yin Y. Metabolic detection of malignant brain gliomas through plasma lipidomic analysis and support vector machine-based machine learning. *EBioMedicine*. 2022 Jul;81:104097. doi: 10.1016/j.ebiom.2022.104097. Epub 2022 Jun 7. PMID: 35687958; PMCID: PMC9189781.

BIOGRAPHY WITH PHOTO:

Professor Zhang Liwei, M.D.

Chairman, Chinese Congress of Neurological Surgeons, Chinese Medical Doctor Association
Chairman, Skull-Base Neurosurgery Congress, China International Association for Medical and Health Care
Associate Director, National Center for Clinical Medicine of Neurological Diseases
Director, Neurosurgery Department, Beijing Tiantan Hospital, Capital Medical University
Neurosurgery Doctoral Supervisor, Capital Medical University and Tsinghua University
Fellow of China Association of Inventions
Member of Academia Europaea
International Member of American Association of Neurological Surgeons (AANS)

PROJECT MANAGEMENT, GRANTS OR FUNDING RECEIVED:

No	Name of Projects	Year of Projects	Project Number	Sources of Fund	Fund(RMB)
1	Multi-center clinical big data study and multi-path tumorigenesis mechanisms and precision treatment research on brainstem glioma	Nov 2019- Dec 2024	JYY2018-7	Health Commission of Beijing	22,000,000
2	Using CRISPR-Cas9 Screen to Detect the Downstream Target Genes of BMP Signaling Leading to the Synthetic Lethality of Diffuse Intrinsic Pontine Glioma	Jan 2019 - Dec 2022	81872048	General Program of National Natural Science Foundation of China	570,000

3	Study on the Mechanisms of PPM1D Gene Mutation in Malignant Biological Behavior of Brainstem Glioma and Targeted Intervention	Jan 2016 - Dec 2018	16G10359	Beijing Natural Science Foundation Program	800,000
4	Neurosurgery of Brainstem Tumor	Jan 2016 - Dec 2018	ZYL201608	Key Medical Specialty Development Plan of Beijing Hospital Administration	5,646,000
5	Molecular Typing of Brainstem Glioma	Jan 2016 - Dec 2017	8152800040	Joint Research Fund for Overseas Chinese Scholars and Scholars in Hong Kong and Macao Young Scholars	212,400
6	Prevention and Treatment of Head Diseases	Jan 2014 - Dec 2016	2014BAI04B01	National Science and Technology Pillar Program for the 12th Five-year Plan	10,280,000
7	Establishment of Brainstem Glioma Animal Model by Using Primary Culture Cells and Its Preliminary Application in Combination Therapy of Radiotherapy and Chemotherapy	Jan 2013 - Dec 2013	81241078	National Science and Technology Program	100,000
8	Establishment of Multidisciplinary Cooperative Platform for Skull Base Diseases in Beijing	Jan 2010 - Dec 2012	2009-1040	Capital Medical Development Fund	600,000
9	Cancer Genome Analysis-Glioma Study	May 2009 - Dec 2011	2006AA02A302	National High-tech Research and Development Program of China (863 Project)	1,000,000
10	A Comparative Study on the Invasiveness of Brainstem Glioma in Children and Adults	Jan 2008 - Dec 2010	30772237	National Science and Technology Program	280,000
11	Basic and Clinical Study of Brainstem Glioma	Oct 2007 - Oct 2009	2007N41	International Science and Technology Cooperation Project of Beijing Science and Technology Commission	100,000
12	Effect of Gradient Change of Skull-base Tissue on Brainstem and Circulation of Cerebrospinal Fluid through Petrous Approach	Sep 2002 - Dec 2005	7002012	Beijing Natural Science Foundation Program	110,000

HONORS AND AWARDS:

No	Name of Awards	Awards Level	Unit and Country of Award	Year of Award	Personal Ranking
1	National Science and Technology Progress Award of China: Treatment Strategy and Application of Key	Second Prize	State Council of China	2018	2

	Technologies in Auditory Protection and Reconstruction of Treating Acoustic Neuroma				
	Beijing Science and Technology Progress Award: Integrated Innovation and Application of Key Technologies in Diagnosis and Treatment of Brainstem Glioma				
2	Second Prize	Beijing Municipal Science and Technology Commission, China	2017	1	
	Chinese Medical Science Prize: Integrated Innovation and Application of Key Technologies in Diagnosis and Treatment of Brainstem Glioma				
3	Third Prize	Chinese Medical Association, China	2017	1	
	Chinese Medical Science and Technology Progress Award: Integrated Innovation and Application of Key Technologies in Diagnosis and Treatment of Brainstem Glioma				
4	Third Prize	China International Exchange and Promotive Association for Medical and Health Care, China	2017	1	
	Beijing Medical Science and Technology Progress Award: Establishment of Multidisciplinary Collaboration Platform for Skull-Base Diseases in Beijing				
5	Third Prize	Beijing Medical Association, China	2016	1	
	Chinese Medical Science Prize: Construction and Standardization of Microsurgical Treatment Platform for Skull-Base Tumor				
6	Third Prize	Chinese Medical Association, China	2015	4	
	Chinese Medical Science Prize: Basic and Clinical Research of Skull-Base Tumor				
7	Third Prize	Chinese Medical Association, China	2014	4	
	Beijing Science and Technology Progress Award: Microsurgical Treatment and Related Basic Research of Deep Brain Tumors				
8	Third Prize	Beijing Municipal Science and Technology Commission, China	2006	6	
	Chinese Medical Science Prize: Microsurgical Treatment and Related Basic Research of Deep Brain Tumors				
9	Second Prize	Chinese Medical Association, China	2006	6	

FULL PUBLICATIONS LIST:

1. Cao X, Hao S, Wu Z, Wang L, Jia G, Zhang L, et al. Treatment Response and Prognosis After Recurrence of Atypical Meningiomas. *World Neurosurg.* 2015;84(4):1014-9.
2. Cao X, Hao S, Wu Z, Wang L, Jia G, Zhang L, et al. Survival rates, prognostic factors and treatment of anaplastic meningiomas. *J Clin Neurosci.* 2015;22(5):828-33.
3. Chen H, Li X, Zhang X, Xu W, Mao F, Bao M, et al. Late delayed radiation-induced cerebral Arteriopathy by high-resolution magnetic resonance imaging: a case report. *BMC Neurol.* 2019;19(1):232.
4. Chen LH, Pan C, Diplas BH, Xu C, Hansen LJ, Wu Y, et al. The integrated genomic and epigenomic landscape of brainstem glioma. *Nat Commun.* 2020;11(1):3077.

5. Chen LP, Wang MR, Wang R, Li D, Zhang LW, Wu Z, et al. Utility of Dual Monitoring of the Lower Cranial Nerve Motor-Evoked Potentials Threshold Level Criterion to Predict Swallowing Function in Skull Base and Brainstem Surgery. *J Clin Neurophysiol*. 2021.
6. Chen X, Dong D, Pan C, Xu C, Sun Y, Geng Y, et al. Identification of Grade-associated MicroRNAs in Brainstem Gliomas Based on Microarray Data. *J Cancer*. 2018;9(23):4463-76.
7. Chen X, Pan C, Xu C, Sun Y, Geng Y, Kong L, et al. Identification of survival-associated key genes and long non-coding RNAs in glioblastoma multiforme by weighted gene co-expression network analysis. *Int J Mol Med*. 2019;43(4):1709-22.
8. Chen X, Pan C, Zhang P, Xu C, Sun Y, Yu H, et al. BRAF V600E mutation is a significant prognosticator of the tumour regrowth rate in brainstem gangliogliomas. *J Clin Neurosci*. 2017;46:50-7.
9. Dai B, Zhang Y, Zhang P, Pan C, Xu C, Wan W, et al. Upregulation of p-Smad2 contributes to FAT10-induced oncogenic activities in glioma. *Tumour Biol*. 2016;37(7):8621-31.
10. Deling L, Nan J, Yongji T, Shuqing Y, Zhixian G, Jisheng W, et al. Intraventricular ganglioglioma prognosis and hydrocephalus: the largest case series and systematic literature review. *Acta Neurochir (Wien)*. 2013;155(7):1253-60.
11. Fan Y, Sun Y, Chang W, Zhang X, Tang J, Zhang L, et al. Bioluminescence imaging and two-photon microscopy guided laser ablation of GBM decreases tumor burden. *Theranostics*. 2018;8(15):4072-85.
12. Fan Y, Xia Y, Zhang X, Sun Y, Tang J, Zhang L, et al. Optical coherence tomography for precision brain imaging, neurosurgical guidance and minimally invasive theranostics. *Biosci Trends*. 2018;12(1):12-23.
13. Feng J, Hao S, Pan C, Wang Y, Wu Z, Zhang J, et al. The H3.3 K27M mutation results in a poorer prognosis in brainstem gliomas than thalamic gliomas in adults. *Hum Pathol*. 2015;46(11):1626-32.
14. Gao Y, Xiao X, Han B, Li G, Ning X, Wang D, et al. Deep Learning Methodology for Differentiating Glioma Recurrence From Radiation Necrosis Using Multimodal Magnetic Resonance Imaging: Algorithm Development and Validation. *JMIR Med Inform*. 2020;8(11):e19805.
15. Ge X, Wu Z, Zhang J, Zhang L. Surgical Strategies and Functional Outcome of Intramedullary Cervicomedullary Ependymoma. *Turk Neurosurg*. 2017;27(4):563-72.
16. Geng S, Zhang J, Zhang LW, Wu Z, Jia G, Xiao X, et al. Diagnosis and microsurgical treatment of chondromas and chondrosarcomas of the cranial base. *Oncol Lett*. 2014;8(1):301-4.
17. Geng SM, Zhang JT, Zhang LW, Wu Z, Wang ZC. Optimal microsurgical treatment of dorsum sellae meningioma. *Chin Med J (Engl)*. 2009;122(16):1857-61.
18. Geng Y, Wu Y, Xu C, Li T, Zhang L. Long Non-Coding RNA LINC00662 Regulated Proliferation and Migration by Targeting miR-34a-5p/LMAN2L Axis in Glioma. *Onco Targets Ther*. 2020;13:10161-72.
19. Geng Y, Xu C, Wang Y, Zhang L. Quiescin Sulfhydryl Oxidase 1 Regulates the Proliferation, Migration and Invasion of Human Glioblastoma Cells via PI3K/Akt Pathway. *Onco Targets Ther*. 2020;13:5721-9.
20. Geng Y, Zuo P, Li XO, Zhang L. PODNL1 promotes cell proliferation and migration in glioma via regulating Akt/mTOR pathway. *J Cancer*. 2020;11(21):6234-42.
21. Guo F, Zhang L, Mo L. Long experience for the diagnosis and treatment of sporadic endolymphatic sac tumor in a single center. *Clin Neurol Neurosurg*. 2020;197:106078.
22. Guo Z, Shao C, Zhang Y, Qiu W, Li W, Zhu W, et al. A Global Multiregional Proteomic Map of the Human Cerebral Cortex. *Genomics Proteomics Bioinformatics*. 2021.

23. Guo Z, Zhang Y, Zou L, Wang D, Shao C, Wang Y, et al. A Proteomic Analysis of Individual and Gender Variations in Normal Human Urine and Cerebrospinal Fluid Using iTRAQ Quantification. *PLoS One*. 2015;10(7):e0133270.
24. Hao S, Feng J, Zhang L, Tang J, Wu Z, Zhang J. Rapid recurrence of petroclival meningioma in Werner syndrome: case report. *Clin Neurol Neurosurg*. 2011;113(9):795-7.
25. Hao S, Huang G, Feng J, Li D, Wang K, Wang L, et al. Non-NF2 mutations have a key effect on inhibitory immune checkpoints and tumor pathogenesis in skull base meningiomas. *J Neurooncol*. 2019;144(1):11-20.
26. Hao S, Li D, Feng J, Wang L, Wu Z, Zhang J, et al. Primary medulla oblongata germinomas: two case reports and review of the literature. *World J Surg Oncol*. 2013;11:274.
27. Hao X, Guo Z, Sun H, Liu X, Zhang Y, Zhang L, et al. Urinary protein biomarkers for pediatric medulloblastoma. *J Proteomics*. 2020;225:103832.
28. He K, Chi C, Li D, Zhang J, Niu G, Lv F, et al. Resection and survival data from a clinical trial of glioblastoma multiforme-specific IRDye800-BBN fluorescence-guided surgery. *Bioeng Transl Med*. 2021;6(1):e10182.
29. Hou Z, Cai X, Li H, Zeng C, Wang J, Gao Z, et al. Quantitative Assessment of Invasion of High-Grade Gliomas Using Diffusion Tensor Magnetic Resonance Imaging. *World Neurosurg*. 2018;113:e561-e7.
30. Hua T, Zhuo Z, Duan Y, Li X, Gu H, Haller S, et al. Prediction of H3 K27M-mutant in midline gliomas by magnetic resonance imaging: a systematic review and meta-analysis. *Neuroradiology*. 2022;64(7):1311-9.
31. Huang G, Feng J, Hao S, Li D, Wang K, Wang L, et al. CASP8, XRCC1, WRN, NF2, and BRIP1 Polymorphisms Analysis Shows Their Genetic Susceptibility for Meningioma Risk and the Association with Tumor-Related Phenotype in a Chinese Population. *World Neurosurg*. 2018;114:e883-e91.
32. Huang GY, Zhang JT, Wu Z, Zhang Y, Hao SY, Zhang LW, et al. [Microsurgical treatment for jugular foramen meningiomas]. *Zhonghua Yi Xue Za Zhi*. 2012;92(41):2921-3.
33. Huo X, Song L, Li D, Wang K, Wang Y, Chen F, et al. Landscape of the oncogenic role of fatty acid synthase in human tumors. *Aging (Albany NY)*. 2021;13(23):25106-37.
34. Huo XL, Wang B, Zhang GJ, Ma JP, Wang L, Zhang LW, et al. Adverse Factors of Treatment Response and Overall Survival in Pediatric and Adult Patients with Pineoblastoma. *Cancer Manag Res*. 2020;12:7343-51.
35. Jia G, Wu Z, Zhang J, Zhang L, Xiao X, Tang J, et al. Two-bone flap craniotomy for the transpetrosal-presigmoid approach to avoid a bony defect in the periauricular area after surgery on petroclival lesions: technical note. *Neurosurg Rev*. 2010;33(1):121-6.
36. Kong L, Ma XJ, Xu XY, Liu PP, Wu ZY, Zhang LW, et al. Five-year symptomatic hemorrhage risk of untreated brainstem cavernous malformations in a prospective cohort. *Neurosurg Rev*. 2022;45(4):2961-73.
37. Kumar Y, Yang J, Hu T, Chen L, Xu Z, Xu L, et al. Massive interstitial copy-neutral loss-of-heterozygosity as evidence for cancer being a disease of the DNA-damage response. *BMC Med Genomics*. 2015;8:42.
38. Leach JL, Roebker J, Schafer A, Baugh J, Chaney B, Fuller C, et al. MR imaging features of diffuse intrinsic pontine glioma and relationship to overall survival: report from the International DIPG Registry. *Neuro Oncol*. 2020;22(11):1647-57.
39. Li CB, Xie MG, Ma JP, Wang L, Hao SY, Zhang LW, et al. Primary Intracranial Angioleiomyomas as Rare, Nonmalignant, and Distinct Neoplastic Entities: A Series of 8 Cases and a Literature Review. *World Neurosurg*. 2018;113:1-13.
40. Li D, Hao SY, Jia GJ, Wu Z, Zhang LW, Zhang JT. Hemorrhage risks and functional outcomes of untreated brainstem cavernous malformations. *J Neurosurg*. 2014;121(1):32-41.

41. Li D, Hao SY, Lou XH, Tang J, Xiao XR, Wu Z, et al. Apnea as an uncommon preoperative manifestation of medulla cavernous malformation: surgical treatment and literature review. *Br J Neurosurg.* 2014;28(3):335-9.
42. Li D, Hao SY, Tang J, Cao XY, Lin S, Wang JM, et al. Primary intracranial angioleiomyomas: diagnosis, treatment, and literature review. *Brain Tumor Pathol.* 2014;31(2):101-7.
43. Li D, Hao SY, Tang J, Xiao XR, Jia GJ, Wu Z, et al. Surgical management of pediatric brainstem cavernous malformations. *J Neurosurg Pediatr.* 2014;13(5):484-502.
44. Li D, Hao SY, Tang J, Xiao XR, Jia GJ, Wu Z, et al. Clinical course of untreated pediatric brainstem cavernous malformations: hemorrhage risk and functional recovery. *J Neurosurg Pediatr.* 2014;13(5):471-83.
45. Li D, Hao SY, Wang L, Li GL, Wang JM, Wu Z, et al. Clinicoradiological features and surgical outcomes of primary intracranial medulloepitheliomas: a single-center experience and pooled analysis of individual patient data. *J Neurosurg.* 2018:1-15.
46. Li D, Hao SY, Wang L, Tang J, Xiao XR, Jia GJ, et al. Recurrent petroclival meningiomas: clinical characteristics, management, and outcomes. *Neurosurg Rev.* 2015;38(1):71-86; discussion -7.
47. Li D, Hao SY, Wang L, Tang J, Xiao XR, Zhou H, et al. Surgical management and outcomes of petroclival meningiomas: a single-center case series of 259 patients. *Acta Neurochir (Wien).* 2013;155(8):1367-83.
48. Li D, Hao SY, Wu Z, Jia GJ, Zhang LW, Zhang JT. Intramedullary medullocervical ependymoma--surgical treatment, functional recovery, and long-term outcome. *Neurol Med Chir (Tokyo).* 2013;53(10):663-75.
49. Li D, Hao SY, Wu Z, Zhang LW, Zhang JT. Primary medulla oblongata teratomas. *J Neurosurg Pediatr.* 2014;14(3):296-300.
50. Li D, Patel CB, Xu G, Iagaru A, Zhu Z, Zhang L, et al. Visualization of Diagnostic and Therapeutic Targets in Glioma With Molecular Imaging. *Front Immunol.* 2020;11:592389.
51. Li D, Tang J, Ren C, Wu Z, Zhang LW, Zhang JT. Surgical management of medium and large petroclival meningiomas: a single institution's experience of 199 cases with long-term follow-up. *Acta Neurochir (Wien).* 2016;158(3):409-25; discussion 25.
52. Li D, Wang JM, Li GL, Hao SY, Yang Y, Wu Z, et al. Clinical, radiological, and pathological features of 16 papillary glioneuronal tumors. *Acta Neurochir (Wien).* 2014;156(4):627-39.
53. Li D, Weng JC, Zhang GJ, Hao SY, Tang J, Zhang LW, et al. Proposed Treatment Paradigm for Intracranial Chondrosarcomas Based on Multidisciplinary Coordination. *World Neurosurg.* 2018;109:e517-e30.
54. Li D, Wu Z, Ren C, Hao SY, Wang L, Xiao XR, et al. Foramen magnum meningiomas: surgical results and risks predicting poor outcomes based on a modified classification. *J Neurosurg.* 2017;126(3):661-76.
55. Li D, Wu ZY, Liu PP, Ma JP, Huo XL, Wang L, et al. Natural history of brainstem cavernous malformations: prospective hemorrhage rate and adverse factors in a consecutive prospective cohort. *J Neurosurg.* 2020;134(3):917-28.
56. Li D, Yang Y, Hao SY, Wang L, Tang J, Xiao XR, et al. Hemorrhage risk, surgical management, and functional outcome of brainstem cavernous malformations. *J Neurosurg.* 2013;119(4):996-1008.
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58. Li D, Zhang H, Jia W, Zhang L, Zhang J, Liu W, et al. Significance of the Tentorial Alignment in Protecting the Occipital Lobe with the Poppen Approach for Tentorial or Pineal Area Meningiomas. *World Neurosurg.* 2017;108:453-9.
59. Li D, Zhang J, Chi C, Xiao X, Wang J, Lang L, et al. First-in-human study of PET and optical dual-modality image-guided surgery in glioblastoma using (68)Ga-IRDye800CW-BBN. *Theranostics.* 2018;8(9):2508-20.
60. Li D, Zhang J, Hao S, Tang J, Xiao X, Wu Z, et al. Surgical treatment and long-term outcomes of thalamic cavernous malformations. *World Neurosurg.* 2013;79(5-6):704-13.
61. Li D, Zhao X, Zhang L, Li F, Ji N, Gao Z, et al. (68)Ga-PRGD2 PET/CT in the evaluation of Glioma: a prospective study. *Mol Pharm.* 2014;11(11):3923-9.
62. Li D, Zheng JJ, Weng JC, Liu PP, Wu ZY, Zhang LW, et al. Neurological outcomes of untreated brainstem cavernous malformations in a prospective observational cohort and literature review. *Stroke Vasc Neurol.* 2021;6(4):501-10.
63. Li H, Gao F, Wang P, Yin L, Ji N, Zhang L, et al. Biodegradable Flexible Electronic Device with Controlled Drug Release for Cancer Treatment. *ACS Appl Mater Interfaces.* 2021;13(18):21067-75.
64. Li H, Hao SY, Wang L, Li D, Wu Z, Zhang LW, et al. Factors influencing the growth rate of vestibular schwannoma in patients with neurofibromatosis type 2. *Acta Neurochir (Wien).* 2015;157(11):1983-90.
65. Li H, Wang L, Hao S, Li D, Wu Z, Zhang L, et al. Identification of the Facial Nerve in Relation to Vestibular Schwannoma Using Preoperative Diffusion Tensor Tractography and Intraoperative Tractography-Integrated Neuronavigation System. *World Neurosurg.* 2017;107:669-77.
66. Li Z, Wang M, Zhang L, Fan X, Tao X, Qi L, et al. Neuronavigation-Guided Corticospinal Tract Mapping in Brainstem Tumor Surgery: Better Preservation of Motor Function. *World Neurosurg.* 2018;116:e291-e7.
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PATENT:

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