

NAME VIVIEN, Denis March 4, 1966	Current positions <ul style="list-style-type: none"> ➤ Professor of Cell Biology (Prof. Excellence Class 1 - CNU 44.3), Univ. Caen-Normandy, ➤ University Hospital Practitioner in Cell Biology (PU-PH), Caen Hospital, Head of the Center for Biological Ressources (CRB-InnovaBIO) and of the Department for Innovation in Diagnosis and Therapeutic (CIDT-chu). ➤ Senior Member IUF "Institut Universitaire de France" (2009) ➤ Director, INSERM UMR_S U1237 "Physiopathology and Imaging of Neurological Disorders" (phind.fr) (73 people) ➤ Scientific Director of the European Platform for Experimental Stroke (ESRP, esrp.fr), granted IBISA.
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INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
Paris XI, Orsay University (Paris, France)	PhD	1992	Molecular and cell biology
Sloan Kettering Howard Hughes Institute (New York, U.S.)	Post-doctoral	1993-94	Cancer research/ molecular biology
Caen Normandy University (France)	HDR	1997	Neurosciences

Positions:

- 1993-94 - Research Associate, Sloan Kettering Cancer Center, Howard Hughes Institute, New York.
- 1995-01 - Assistant professor in molecular biology, Université de Caen Normandy
- 2001- - Full Professor in Neurosciences, Université de Caen Normandy
- 2004-05 - Vice-Director of UMR CNRS 6185
- 2005-08 - Director INSERM-Avenir "tPA in the working brain" award
- 2008-2017 - Director, INSERM UMR_S U919 "serine proteases and pathophysiology of the neurovascular unit"
- 2014- - Coordinator of the team FRM "Immunotherapy for Neurological Diseases" funded "Fondation pour la Recherche Medicale"
- 2017- - Director INSERM UMR-S PhIND "Physiopathology and Imaging of Neurological Disorders" (phind.fr)
- Full Professor – University Hospital Practitioner in Cell Biology (PU-PH), CNU 44.3, Caen University Hospital.
- Department of Clinical Research, head of the department for Innovation in Diagnosis and Therapeutic (CIDT) and of the Center for Biological Ressources (CRB-InnovaBIO), Caen University Hospital.
- Scientific Director of the Platform for Experimental Stroke Research (ESRP)

Awards:

- Senior member of the Institut Universitaire de France (2009)
- Award: "medical innovation" (Fondation de France-Matmut), 2011
- Schlumberger Foundation prize for an innovative teaching aid called «Cérébro», 2012
- FRM group" by the French Medical Research Foundation, 2014-2017
- Rose LAMARCA Award for advance in translational research, 2016

Production

Results found:	182
Sum of the Times Cited:	7275
Average Citations per Item:	40
h-index:	44

Previous experience in collaborative research

- 2005-10 : - Partner in the European consortium "Diagnosis In Molecular Imaging", FP6
2008-13 : - Group leader in the European consortium "Eurostroke", FP7
2008-13: - Workpackage leader in the European consortium "ARISE", FP7
2008-13: - Coordinator of the European consortium ERANET-Neuron "Protea", FP7
2006-21: - 9 ANR contracts from 2006 : 4 Neurosciences, 1 Emergence, 2 BiotecS
2013-17: - Partner European Marie Curie International Training Network "NeuroInflammation, FP7
- Partner of « MULTIPARTt » EU network, FP7
2015-20: - Team partner H2020, Medit-Ageing
2016-20: - Co-PI Netherland Stroke Program, CONTRAST
2016-20: - Partner RHU Marvellous and RHU on small vessels diseases (RHU: Hospitalo- University Network, PIA-2)
2020-23. - Partner H2020 program, NeuroAtlantic, An Atlantic innovation platform on diagnosis and treatment of neurological diseases and aging
- Partner, H2020, International Marie Curie Training Network, ENTRAIN, Neuroinflammation.

Committee member:

- 2001-07 - Member of the CSS 1 « scientific council » INSERM, Neurosciences, Neurologie et Psychiatrie
2007-11 - section 69 (neurosciences) of the Conseil National des Universités (CNU)
2007-12 - section 1 "neurosciences, neurologie et neuro-psychiatrie" INSERM, CSS1
2012-16 - President of section 69 (neurosciences) of Conseil National des Universités (CNU)
2015-17 - Vice-president of the scientific committee of the new foundation "Recherche AVC", hosted by the - Fondation pour la Recherche Medicale (FRM)
2017-18 - Co-coordinator Scientific Pole Biology and Chemistry of Caen-Normandie-University
2013- - Vice-president (2 years) and President of the Committee for Biomedical Research and Public Health of the Caen Hospital
- President of the Scientific council of the « Fondation Thérèse et René Planiol »
2017- - President of the scientific committee of the new foundation "Recherche AVC", hosted by the Fondation pour la Recherche Medicale (FRM), Member of the scientific committee of the Fondation "Groupama"
- Expert member of ITMO "Neurosciences, Neurologie and Psychiatrie", AVIESAN
2018- - Editorial: section Editor "Neuroscience" journal

A/ Representative recent publications (10)

XXXX : PhIND's members

Thiebaut AM, Gauberti M, Ali C, Martinez De Lizarrondo S, Vivien D, Yepes M, Roussel BD. The role of plasminogen activators in stroke treatment: fibrinolysis and beyond. **Lancet Neurol.** 2018 Dec;17(12):1121-1132. Review. **IF: 27.4**

Martinez de Lizarrondo S, Gakuba C, Herbig BA, Repessé Y, Ali C, Denis CV, Lenting P, Touzé E, Diamond SL, Vivien D, Gauberti M. Potent Thrombolytic Effect of N-Acetylcysteine on Arterial Thrombi.. *Circulation.* 2017, 15;136(7):646-660. **IF : 19.8**

Marcos-Contreras OA, Martinez de Lizarrondo S, Bardou I, Orset C, Pruvost M, Anfray A, Frigout Y, Hommet Y, Lebouvier L, Montaner J, Vivien D*, Gauberti M*. * equal contribution. Hyperfibrinolysis increases blood brain barrier permeability by a plasmin and bradykinin-dependent mechanism. **Blood.** 2016 17;128(20):2423-243. **IF: 15.1**

Wyseure T, Rubio M, Denorme F, Martinez de Lizarrondo S, Peeters M, Gils A, De Meyer SF, Vivien D, Declerck PJ. Innovative thrombolytic strategy using a heterodimer diabody against TAFI and PAI-1 in mouse models of thrombosis and stroke. **Blood.** 2015;125:1325-32. **IF 15.1**

Llovera G, Hofmann K, Roth S, Salas-Pédomo A, Ferrer-Ferrer M, Perego C, Zanier ER, Mamrak U, Rex A, Party H, Agin V, Fauchon C, Orset C, Haelewyn B, De Simoni MG, Dirnagl U, Grittner U, Planas AM, Plesnila N, Vivien D, Liesz A. Results of a preclinical randomized controlled multicenter trial (pRCT): Anti-CD49d treatment for acute brain ischemia. **Sci Transl Med.** 2015 Aug 5;7(299):299ra121. **IF: 16.7**

Aurélien Quenault, Sara Martinez de Lizarrondo, Olivier Etard, Maxime Gauberti, Cyrille Orset, Benoît Haelewyn, Helen C. Segal, Peter M. Rothwell, Denis Vivien*, Emmanuel Touzé*, Carine Ali. * equal contribution. Molecular magnetic resonance imaging discloses endothelial activation after transient ischaemic attack. **Brain (2017)** 140(1):146-157 **IF : 10.8**

Louessard M, Bardou I, Lemarchand E, Thiebaut AM, Parcq J, Leprince J, Terrisse A, Carraro V, Fafournoux P, Bruhat A, Orset C, Vivien D, Ali C, Roussel BD. Activation of cell surface GRP78 decreases endoplasmic reticulum stress and neuronal death. **Cell Death Differ.** 2017 Sep;24(9):1518-1529. **IF: 8.7**

Lemarchand E, Maubert E, Haelewyn B, Ali C, Rubio M, Vivien D. Stressed neurons protect themselves by a tissue-type plasminogen activator-mediated EGFR-dependent mechanism. **Cell Death Differ.** 2016 Jan;23(1):123-31. doi: 10.1038/cdd.2015.76. **IF: 8.7**

Gakuba C, Gaberel T, Goursaud S, Bourges J, Di Palma C, Quenault A, Martinez de Lizarrondo S, Vivien D, Gauberti M. General Anesthesia Inhibits the Activity of the "Glymphatic System". **Theranostics.** 2018 Jan 1;8(3):710-722. **IF: 8.8**

Leys D, Hommet Y, Jacquet C, Moulin S, Sibon I, Mas JL, Moulin T, Giroud M, Sagnier S, Cordonnier C, Medeiros de Bustos E, Turc G, Ronzière T, Bejot Y, Detante O, Ouk T, Mendyk AM, Favrole P, Zuber M, Triquenot-Bagan A, Ozkul-Wermester O, Montoro FM, Lamy C, Faivre A, Lebouvier L, Potey C, Poli M, Hénon H, Renou P, Dequatre-Ponchelle N, Bodenat M, Debruxelles S, Rossi C, Bordet R, Vivien D: OPHÉLIE investigators and the STROKAVENIR network. Proportion of single-chain recombinant tissue plasminogen activator and outcome after stroke. **Neurology.** 2016 6;87(23):2416-2426. **IF : 7.6**

B/ Research monographs and any translations thereof

- Molecular Magnetic Resonance Imaging (mMRI). Maxime Gauberti, Antoine P. Fournier, **Preclinical MRI: Methods and Protocols**, Methods in Molecular Biology, vol. 1718, https://doi.org/10.1007/978-1-4939-7531-0_19, © Springer Science+Business Media, LLC 2018.
- Endoplasmic Reticulum Stress: an opportunity for neuroprotective strategies after stroke. Louessard M., Lemarchand E., Ali C., Roussel DB., Vivien D. Neuroprotective Therapy for Stroke and Ischemic Disease, **Springer, Editor, P.A Lapchak, 2017.**
- Orset C, Haelewyn B, **Vivien D.** Rodent Models of Stroke, Book chapter entitled: "**Thromboembolic stroke models**". Humana Press Inc. 1607617498, Editor: Pr U. Dirnagl. 2010 and 2nd edition 2017.
- Macrez R, Gauberti M, **Vivien D**, Ali C: New thrombolytic agents. Tratamiento del ictus isquémico, Marge Medica Books, Barcelona, 2009; 59-77.
- **Vivien D**, Benchenane K, Ali C. Transforming growth factor-beta in brain functions and dysfunctions. Dans transforming growth factor-beta in cancer therapy, **The Humana Press Inc.**, Totowa, 2008.
- Baron A, Ali C, **Vivien D.** Extracellular proteolysis and neurotoxicity. Fisiopatología de la isquemia cerebral, **Marge Medica Books**, Barcelona, 2008.

C/ Ten representative recent invited talks (70) – seminars (50) above 120 these last 10 years

- **D. Vivien.** Giving New Life to Old Music: Novel Functions of tPA in the Neurovascular Unit. The Plasminogen Activation & Extracellular Proteolysis Gordon Research Conference 2018; - Four Points, Ventura, CA, USA.
- **D. Vivien,** The 24th congress of the ISFP Edinburgh, UK, September 3-7 2018. - joint meeting with the International Workshop on Molecular and Cellular Biology of Plasminogen Activation. tPA : from fibrinolysis to neurotransmission.

- **D. Vivien**, tPA is more than a fibrinolytic. Invited conference, International Stroke Conference (ISC) 2017, Houston, United-States, 22-24 Feb., 2017. Conf. 2: D. Vivien, Molecular MR imaging of neuroinflammation. Invited conference, International Stroke Conference (ISC) 2017, Houston, United-States, 22-24 Feb, 2017.
- **D. Vivien**, European Stroke Conference (ESOC), MR imaging of neuroinflammation, Pragua, 15-18 May, 2017
- **D. Vivien**, State-of-art: Stroke models: it is time for a compromise. ISTH-2017, 8-13 july 2017. Berlin, Germany Berlin ISTH.
- **D. Vivien**, Second symposium in Inflammation and Thrombosis, 31th March-April 1st 2016, **Vienna, Austria**.
- **Vivien D.**, tPA more than a fibrinolytic, **9th International Symposium on Neuroprotection and Neurorepair**, Leipzig, Germany 19-22 April 2016.
- **Vivien D.**, tPA, more than a fibrinolytic, International Chinese Stroke Conference. June 2016, **Beijin, China**.
- **D. Vivien**, Imaging of neuroinflammation, **European Stroke Science Workshop**. Garmisch-Partenkirchen, Germany, 19-21 November 2015.
- **D. Vivien**. The Plasminogen Activation & Extracellular Proteolysis Gordon Research Conference 2014; - Four Points, Ventura, CA, USA, « Hot topics”.

D/ Granted patents

- Patent TIE 08609 VIVIEN, Treatment of neurological and neurodegenerative disorders, inventors: D. Vivien, C. Ali, R. Macrez and KU Petersen, WO2011/023250, published 2001.
- Patent TIE13193, Novel antibody useful in neurological or neurodegenerative disorders. Filing 2014, Inventors: D. Vivien, F. Docagne, R. Macrez, KU Petersen, PCT/WO2014187879. Under license with a big pharma 2017 : the patent in United States Of America has been granted on 11 Sep 2018 with N° 10 072 077
- W02013/034710A1 / IND9470-US-PCD (2017). Mutated tissue plasminogen activators and uses thereof., 09/2012, Patented with Inserm-Transfert and under licence with Op2lysis
- Patent GB1404879.7; Dual targeting of TAFI and PAI-1, deposit 2014, Under license with Cobiore (UK)
- Imaging method for predicting the onset of multiple sclerosis WO 2017134178 A1
- Dépôt de brevet en partenariat avec UMR-S U 1048 Toulouse, use of pi3kc2β inhibitors for the preservation of vascular endothelial cell barrier integrity

Current and anticipated grant support

Inserm, UMR-S U919 / U1237	2017-2021	750 000 €
Université de Caen - French ministry of research	2012-2016	200 000 €
ANR Emergence Optilyse	2012-2015	170 000 €
ANR P2N2	2016-2019	190 000 €
ANR Cyclops	2016-2019	100 000 €

FEDER Normandy Council	2015-2018	130 000 €
FP7, Marie Curie ITN "Neuroinflammation"	2014-2017	236 424 €
ARSEP "SIMSEP"	2014-2016	93 000 €
Team FRM "immunotherapy"	2014-2016	300 000 €
ANR PI3K	2016-2019	150 000 €
ANR PREDIC	2016-2019	300 000 €
FRM – AVC	2016-2018	71 000 €
H2020 Medit-Ageing « « Partner	2016-2020	70 000 €
Normandy Regional Council – rtPA	2018-2020	750 000 €
Contrast – PI Netherland Stroke Program	2016-2020	150 000 €
RHU MARVELLOUS	2016-2020	450 000 €
RHU Small Vessels diseases	2016-2020	150 000 €
ANR MrGly	2017-2021	246 000 €
Neuro-Atlantic, H2020	2019-2023	180 000 €
ITN-ENTRAIN, H2020	2023-2023	252 000 €

Our unit now includes around 83 people with new permanent researchers and clinicians who joined us. The opportunity for Gaël Chételat (ex Inserm UMR-S U1077), expert in the field of brain imaging especially in human to join our group (new team C) led to reinforce our translational strategy. Based on our background on fibrinolysis and neuroinflammatory processes, the « **Etablissement Français du Sang, EFS** » (French institute of blood), also member of AVIESAN, a consortium including the Universities (CP-CNU) and Inserm (our two present legal entities), expressed the wish to support our research and to become a partner of our unit, involving recurrent fundings.

Thus, for the next five-year program, we jointly propose the following tripartite unit:

Physiopathology and Imaging of Neurological Disorders “PhIND”

Team A: tPA and Neurovascular Disorders

Pr Denis VIVIEN (PRE2)

Team B: Serine Proteases, Neuroinflammation and Glial cells

Dr Fabian DOCAGNE (CR1, Inserm)

Team C : Multimodal Neuroimaging and Lifestyle in Ageing and Alzheimer’s Disease

Dr Gael CHETELAT (DR2, Inserm)

The diverse areas of our expertise create a highly synergistic environment to promote:

- The development of innovative methods and investigation tools, focusing on molecular biology, cell biology, physiology, behaviour and brain imaging.
- The application of these tools to push the boundaries of the study of the mechanisms underlying the functions and dysfunctions of the nervous system with a special interest for a set of common determinants of neurological disorders such as serine proteases (especially tPA), inflammatory processes and ageing.
- The interaction between basic research and clinical practice, with a “bench to bed/bed to bench” approach.

In addition, our unit co-leads an IBiSA platform “Experimental Stroke Research Platform”, (esrp.fr) a core facility of service, training and R&D in pre-clinical stroke research of international stature. ESRP transfers to the scientific community and industry the

experimental models we develop in the unit.

Our main objectives for the next 5 years are:

- To decipher the molecular mechanisms through which serine proteases influence brain functions and dysfunctions.
- To determine how environment and ageing may influence these brain functions and dysfunctions.
- To transfer our knowledge and tools to clinic applications.

Inserm U919/U1237 is hosted in GIP CYCERON. Created in 1985, CYCERON was one of the three centers in which PET was developed in France. The platform has been constantly upgraded and extended thanks to regional, national and European funding. Today, CYCERON is one of the few biomedical imaging platforms where neuroscience research is conducted on multiple levels that span from the molecule to the entire living human brain. The 6,000 m² facility is segmented into molecular and cellular biology labs (cell culture, RT-PCR, laser micro dissection, video microscopy, confocal microscopy, two-photon microscopy), experimental biology (rodent and primate animal facilities, physiology laboratories, surgery rooms), chemistry and radiochemistry (IBA cyclotron, robots and hot cells, routine production of O¹⁵, C¹¹ and F¹⁸ labeled compound), *in vivo* imaging lab (Siemens PET HR+, GE PET-CT, Philips MRI 3T, Bruker MRI 7T, 64-channel EEG, NIRF). The platform is run by 30 full-time equivalent technical personnel.

Publications

2018

The SCD-Well randomized controlled trial: Effects of a mindfulness-based intervention versus health education on mental health in patients with subjective cognitive decline (SCD). Marchant NL, Barnhofer T, Klimecki OM, Poisnel G, Lutz A, Arenaza-Urquijo E, Collette F, Wirth M, Schild AK, Coll-Adrós N, Reyrolle L, Horney D, Krolak-Salmon P, Molinuevo JL, Walker Z, Maillard A, Frison E, Jessen F, Chételat G; SCD-WELL Medit-Ageing Research Group. *Alzheimers Dement (N Y)*. 2018 Dec 14;4:737-745.

The Age-Well randomized controlled trial of the Medit-Ageing European project: Effect of meditation or foreign language training on brain and mental health in older adults. Poisnel G, Arenaza-Urquijo E, Collette F, Klimecki OM, Marchant NL, Wirth M, de La Sayette V, Rauchs G, Salmon E, Vuilleumier P, Frison E, Maillard A, **Vivien D**, Lutz A, Chételat G; Medit-Ageing Research Group. *Alzheimers Dement (N Y)*. 2018 Dec 14;4:714-723.

Ischemia-Reperfusion Injury After Endovascular Thrombectomy for Ischemic Stroke. Gauberti M, Lapergue B, Martinez de Lizarrondo S, **Vivien D**, Richard S, Bracard S, Piotin M, Gory B. *Stroke*. 2018 Dec;49(12):3071-3074.

The role of plasminogen activators in stroke treatment: fibrinolysis and beyond. Thiebaut AM, Gauberti M, Ali C, Martinez De Lizarrondo S, **Vivien D**, Yepes M, Roussel BD. *Lancet Neurol*. 2018 Dec;17(12):1121-1132. Review.

Cerebrospinal fluid leakage after posterior fossa surgery may impair brain metabolite clearance. Goulay R, Aron Badin R, Flament J, Emery E, Hantraye P, **Vivien D**, Gaberel T. *Neurochirurgie*. 2018 Dec;64(6):422-424.

A de novo variant in ADGRL2 suggests a novel mechanism underlying the previously undescribed association of extreme microcephaly with severely reduced sulcation and rhombencephalosynapsis. Vezain M, Lecuyer M, Rubio M, Dupé V, Ratié L, David V,

Pasquier L, Odent S, Coutant S, Tournier I, Trestard L, Adle-Biassette H, **Vivien D**, Frébourg T, Gonzalez BJ, Laquerrière A, Saugier-Verber P. *Acta Neuropathol Commun.* 2018 Oct 19;6(1):109.

Inhibition of store-operated channels by carboxyamidotriazole sensitizes ovarian carcinoma cells to anti-Bcl_{xL} strategies through Mcl-1 down-regulation. Bonnefond ML, Florent R, Lenoir S, Lambert B, Abeilard E, Giffard F, Louis MH, Elie N, Briand M, **Vivien D**, Poulain L, Gauduchon P, N'Diaye M *Oncotarget.* 2018 Sep 21;9(74):33896-33911.

Anti-inflammatory treatments for stroke: from bench to bedside.

Drieu A, Levard D, **Vivien D**, Rubio M. *Ther Adv Neurol Disord.* 2018 Jul 30;11:1756286418789854.

Tissue-Type Plasminogen Activator Controlled Corticogenesis Through a Mechanism Dependent of NMDA Receptors Expressed on Radial Glial Cells. Pasquet N, Douceau S, Naveau M, Lesept F, Louessard M, Lebouvier L, Hommet Y, **Vivien D**, Bardou I. *Cereb Cortex.* 2018 Jun 6. doi: 10.1093/cercor/bhy119. [Epub ahead of print]

Modification of apparent intracerebral hematoma volume on T₂-weighted images during normobaric oxygen therapy may contribute to false diagnosis. Goulay R, Drieu A, Di Palma C, Pro-Sistiaga P, Delcroix N, Chazalviel L, Saulnier R, Gakuba C, Goursaud S, Young AR, Gauberti M, Orset C, Emery E, **Vivien D**, Gaberel T. *J Clin Neurosci.* 2018 Mar 20. pii: S0967-5868(17)31369-3. doi: 10.1016/j.jocn.2018.01.046. [Epub ahead of print]

Influence of on-going treatment with angiotensin-converting enzyme inhibitor or angiotensin receptor blocker on the outcome of patients treated with intravenous rt-PA for ischemic stroke. Gilliot S, Sibon I, Mas JL, Moulin T, Béjot Y, Cordonnier C, Giroud M, Odou P, Bordet R, **Vivien D**, Leys D; OPHÉLIE Investigators. *J Neurol.* 2018 Mar 16. doi: 10.1007/s00415-018-8827-6. [Epub ahead of print]

Brain-released alarmins and stress response synergize in accelerating atherosclerosis progression after stroke. Roth S, Singh V, Tiedt S, Schindler L, Huber G, Geerlof A, Antoine DJ, Anfray A, Orset C, Gauberti M, Fournier A, Holdt LM, Harris HE, Engelhardt B, Bianchi ME, **Vivien D**, Haffner C, Bernhagen J, Dichgans M, Liesz A. *Sci Transl Med.* 2018 Mar 14;10(432). pii: eaao1313. doi: 10.1126/scitranslmed.aao1313.

Molecular Magnetic Resonance Imaging of Endothelial Activation in the Central Nervous System. Gauberti M, Fournier AP, Docagne F, **Vivien D**, Martinez de Lizarrondo S. *Theranostics.* 2018 Feb 2;8(5):1195-1212. doi: 10.7150/thno.22662. eCollection 2018. Review.

Reduced spinal cord parenchymal cerebrospinal fluid circulation in experimental autoimmune encephalomyelitis. Fournier AP, Gauberti M, Quenault A, **Vivien D**, Macrez R, Docagne F. *J Cereb Blood Flow Metab.* 2018 Jan 1;271678X18754732. doi: 10.1177/0271678X18754732. [Epub ahead of print]

General Anesthesia Inhibits the Activity of the "Glymphatic System". Gakuba C, Gaberel T, Goursaud S, Bourges J, Di Palma C, Quenault A, de Lizarrondo SM, **Vivien D**, Gauberti M. *Theranostics.* 2018 Jan 1;8(3):710-722. doi: 10.7150/thno.19154. eCollection 2018.

Molecular Magnetic Resonance Imaging (mMRI). Gauberti M, P Fournier A, **Vivien D**, Martinez de Lizarrondo S. *Methods Mol Biol.* 2018;1718:315-327. doi: 10.1007/978-1-4939-7531-0_19.

2017

Worse Outcome in Stroke Patients Treated with rt-PA Without Early Reperfusion: Associated Factors. Iglesias-Rey R, Rodríguez-Yáñez M, Rodríguez-Castro E, Pumar JM, Arias S, Santamaría M, López-Dequidt I, Hervella P, Correa-Paz C, Sobrino T, **Vivien D**, Campos F, Castellanos M, Castillo J. *Transl Stroke Res.* 2017 Nov 7. doi: 10.1007/s12975-017-0584-9. [Epub ahead of print]

ADAMTS-4 in oligodendrocytes contributes to myelination with an impact on motor function. Pruvost M, Lépine M, Leonetti C, Etard O, Naveau M, Agin V, Docagne F, Maubert E, Ali C, Emery E, **Vivien D**. *Glia*. 2017 Aug 29. doi: 10.1002/glia.23207.

Nicotinamide riboside, a form of vitamin B₃, protects against excitotoxicity-induced axonal degeneration. Vaur P, Brugg B, Mericskay M, Li Z, Schmidt MS, **Vivien D**, Orset C, Jacotot E, Brenner C, Duplus E. *FASEB J*. 2017 Aug 21. pii:

Experimental and clinical evidence of differential effects of magnesium sulfate on neuroprotection and angiogenesis in the fetal brain. Lecuyer M, Rubio M, Chollat C, Lecointre M, Jégou S, Leroux P, Cleren C, Leroux-Nicollet I, Marpeau L, **Vivien D**, Marret S, Gonzalez BJ. *Pharmacol Res Perspect*. 2017 Aug;5(4). doi:

Can the benefits of rtPA treatment for stroke be improved? **Vivien D**. *Rev Neurol (Paris)*. 2017 Aug 7. pii: S0035-3787(17)30676-8. doi: 10.1016/j.neurol.2017.07.003.

The choroid plexus is a key cerebral invasion route for T cells after stroke. Llovera G, Benakis C, Enzmann G, Cai R, Arzberger T, Ghasemigharagoz A, Mao X, Malik R, Lazarevic I, Liebscher S, Ertürk A, Meissner L, **Vivien D**, Haffner C, Plesnila N, Montaner J, Engelhardt B, Liesz A. *Acta Neuropathol*. 2017 Jul 31. doi:

Vascular Tissue-Type Plasminogen Activator Promotes Intracranial Aneurysm Formation. Labeyrie PE, Goulay R, Martinez de Lizarrondo S, Hébert M, Gauberti M, Maubert E, Delaunay B, Gory B, Signorelli F, Turjman F, Touzé E, Courthéoux P, **Vivien D**, Orset C. *Stroke*. 2017 Sep;48(9):2574-2582. doi:

Optimized tPA: A non-neurotoxic fibrinolytic agent for the drainage of intracerebral hemorrhages. Goulay R, Naveau M, Gaberel T, **Vivien D**, Parcq J. *J Cereb Blood Flow Metab*. 2017 Jan 1:271678X17719180. doi: 10.1177/0271678X17719180.

Activation of cell surface GRP78 decreases endoplasmic reticulum stress and neuronal death. Louessard M, Bardou I, Lemarchand E, Thiebaut AM, Parcq J, Leprince J, Terrisse A, Carraro V, Fafournoux P, Bruhat A, Orset C, **Vivien D**, Ali C, Roussel BD. *Cell Death Differ*. 2017 Sep;24(9):1518-1529. doi:

Are Distal and Proximal Visual Cues Equally Important during Spatial Learning in Mice? A Pilot Study of Overshadowing in the Spatial Domain. Hébert M, Bulla J, **Vivien D**, Agin V. *Front Behav Neurosci*. 2017 Jun 6;11:109. doi:

Potent Thrombolytic Effect of N-Acetylcysteine on Arterial Thrombi. Martinez de Lizarrondo S, Gakuba C, Herbig BA, Repessé Y, Ali C, Denis CV, Lenting P, Touzé E, Diamond SL, **Vivien D**, Gauberti M. *Circulation*. 2017 May 9. pii: CIRCULATIONAHA.117.027290. doi:

Prediction of disease activity in models of multiple sclerosis by molecular magnetic resonance imaging of P-selectin. Fournier AP, Quenault A, Martinez de Lizarrondo S, Gauberti M, Defer G, **Vivien D**, Docagne F, Macrez R. *Proc Natl Acad Sci U S A*. 2017 Jun 6;114(23):6116-6121. doi:

Subarachnoid Hemorrhage Severely Impairs Brain Parenchymal Cerebrospinal Fluid Circulation in Nonhuman Primate. Goulay R, Flament J, Gauberti M, Naveau M, Pasquet N, Gakuba C, Emery E, Hantraye P, **Vivien D**, Aron-Badin R, Gaberel T. *Stroke*. 2017 May 19. pii: STROKEAHA.117.017014. doi:

Astrocytes regulate the balance between plasminogen activation and plasmin clearance via cell-surface actin.

Briens A, Bardou I, Lebas H, Miles LA, Parmer RJ, **Vivien D**, Docagne F.
Cell Discov. **2017** Feb 21;3:17001. doi: 10.1038/celldisc.2017.1. eCollection **2017**.

New thrombolytic strategy providing neuroprotection in experimental ischemic stroke: MMP10 alone or in combination with tPA.

Roncal C, Martinez de Lizarrondo S, Salicio A, Chevillet A, Rodriguez JA, Rosell A, Couraud PO, Weksler B, Montaner J, **Vivien D**, Páramo JA, Orbe J.
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Conf. Seminar 2018

Sem. 1/ **D. Vivien**, How experimental Stroke research could help stroke patients. Unité INSERM U1195 – Kremlin Bicêtre, Schumacher M – Benavides J – Diplôme Universitaire Neurovasculaire,. 15 mars 2019, Paris.

Conf. 1/ **D. Vivien**, Organisation et séminaire, 1^{er} Atelier AVIESAN sur les accidents vasculaires Cérébraux – ITMO NNP, 26 mars 2019, esp. Van Gogh, Paris – Conf. 1 : Qu'avons nous appris des modèles animaux d'AVC ?

Conf. 2/ **D. Vivien**, Quelles nouvelles perspectives pour améliorer le reperfusion cérébrale post-AVC ? RENCONTRES TUC-GIHP-GACI, Cardiologie interventionnelle, de la thrombose et des urgences coronaires. Centre congrés Zalthabar, 4 avril 2019, Paris.

Sem. 2/ **D. Vivien**, tPA more than a fibrinolytic ? Marseille, La timone, INSERM UMR-S U 1263 / INRA 1260, centre cardiovasculaire, 6 Mai 2019.

Conf. 3/ **D. Vivien**, Comment revisiter la pharmacie de l'hôpital dans le domaine neurovasculaire, Réunion Annuelle de l'Académie de Pharmacie (délocalisée à Caen), Caen, France, 15 Mai 2019.

6/ Conf. NICS juin Paris

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11/ Toulouse, 3/4 Déc.

Conf. Seminar 2018

Conf. 1: D. Vivien, Plasminogen Activation and Extracellular Proteolysis, **Gordon Research Conference, February 11 - 16, 2018, Ventura, CA, US, Giving New Life to Old Music: Novel Functions of tPA in the Neurovascular Unit"**

Conf. 2 : D. Vivien, **Groupe jeunes de la société d'anesthésie et de réanimation (SFAR) pédiatrique**. II journée nationale, Caen 13 Avril 2018, Agents anesthésiques et développement cérébral.

Conf. 3. D. Vivien, **International meeting on Ischemia Reperfusion Injury in Transplantation, IMIRT 2018, Poitiers, 19-20 Avril 2018**. Whole body molecular résonance Imaging of inflammation.

Conf. 4. D. Vivien, **European Stroke Conference (ESOC), Goteborg, Sueden, 15-18 Mai 2018**. Integrating molecular imaging with other imaging technologies.

Conf. 5. **Key-Note Lecture by Denis Vivien** Contrast Collaboration for new treatment of acute stroke, Amsterdam; May 23th, 2018, Program contrast workshop; Amsterdam CONTRAST, Experimental stroke research on rodents especially outcome assessment and procedures without anesthesia.

Conf. 6: **Pr. Denis Vivien 2nd STROK@LLIANCE annual meeting** , June 5th, 2018 – MAISON DE LA CHIMIE , Paris, Giving new life to old music about the future of translational stroke research

Sem. 1: **Toulouse, MP Gratacap**, UMR-s U1045, D. Vivien, tPA from synapses to neurovascular diseases, 11 july, 2018.

Conf. 7: **ISFP and Plasminogen Activator Workshop, 3-7 Edimburg 2018** – tPA more than a fibrinolytic.

Conf. 8: D. Vvien,– Recherche translationnelle sur les accidents vasculaires cérébraux. Ecole de **l'ITMO Neurosciences**, Bordeaux, France, 20-23 Oct. 2018

Conf. 9: D. Vivien, Molecular MR imaging of neuroinflammation. **X^{em} Neurorepair & Neuroprotection meeting, Dresden, Germany, 9-11 Oct. 2018**.

Conf. 10 : D. Vivien, tPA and brain functions. **GFHT-ISTH, 24-26 Oct. 20018, Marseille, France**

Conf. 11, D. Vivien, The glymphatic system on stroke, First French meeting on lymphatics, Rouen, 26 Nov. 2018

Conf. 12: D. Vivien, Physiopathology and imaging of neurological disorders, **IV UIMP-IBiS SCHOOL OF BIOMEDICINE** Mechanisms linking aging and vascular disease - Seville, 17-18 Dec 2018

Conf. Seminar 2017

Sem.1: **D. Vivien**, tPA from fibrinolysis to NMDA receptor signaling, 14 Feb 2017, **Hungarian Academy of Sciences**, Budapest, Hungaria.

Conf.1: D. Vivien, tPA is more than a fibrinolytic. Invited conference, International Stroke Conference (ISC) 2017, Houston, United-States, 22-24 Feb., 2017.

Conf. 2: D. Vivien, Molecular MR imaging of neuroinflammation. Invited conference, International Stroke Conference (ISC) 2017, Houston, United-States, 22-24 Feb., 2017.

Conf. 3: **D. Vivien**, European Stroke Conference (ESOC), MR imaging of neuroinflammation, Pragua, 15-18 May, 2017

Sem.2: **D. Vivien**, tPA more than a fibrinolytic? Bochum International Graduate School of Neurosciences, Germany, 22 May, 2017.

Conf. 4. **D. Vivien**, Molecular Imaging of Neuroinflammation after Stroke, 14th Interdisciplinary Cerebrovascular Symposium, June 28-30-2017, Montpellier, France

Conf. 5. **D. Vivien**, State-of-art: Stroke models: it is time for a compromise. ISTH-2017, 8-13 July 2017. Berlin, Germany Berlin ISTH

Conf. 6. **D. Vivien**, 28 ème Journée Scientifique de l'ANEBC, Bagnoles de L'Orne, 21-23 Sept. 2017. Bio C, Normandie. L'activateur tissulaire du plasminogène (tPA), une protéase vasculaire qui se dit être un neurotransmetteur ?

Conf. 7. **D. Vivien**, Studium Conference, The role of glycosylation on serpin biology and conformational disease, 2è-29 Sept. 2017, Orléans, France. Single chain versus two chain tPA from fibrinolysis to neuronal signaling.

Conf. 8: **D. Vivien**, MR Molecular Imaging of Inflammation. . 2e Congrès National d'Imagerie du Vivant, 8-9 Nov. 2017, Paris

Conf. 9: **D. Vivien**, How to improve the efficacy of tPA, Journée Internationale. / Société Française de NeuroVasculaire, SFNV, 15-17 Nov. 2017? Paris.

Sem. 3 D. Vivien. New thrombolytics for stroke. Ready for a clinical trial? Pamplona, Spain, CIMA research center. 23 Nov. 2017.

Sem. 4. D. Vivien., tPA More than a fiberinolytic ? Marseille, 18 Déc. 2017, Institut des Neurosciences de la Timone (F. Debarbieux)

Conf. Seminars 2016

Conf. 1 : **Vivien D.**, Hyperfibrinolysis induces blood-brain barrier disruption by a plasmin-bradykinin dependent mechanism. **60th annual meeting of the society of Thrombosis and Haemostasis Research**. Munster, Germany, 17_20 fev, 2016

Conf. 2: **D. Vivien**, Second symposium in Inflammation and Thrombosis, , 31th March-April 1st 2016, **Vienna, Austria**.

Conf. 3: **Vivien D.** Neuroinflammation et traitements des Accidents Vasculaires Cérébraux. **20 èmes journée de la Société Française Neurovasculaire**, Paris 25-27 Nov, 2015.

Conf. 4: **Vivien D.**, tPA more than a fibrinolytic, **9th International Symposium on Neuroprotection and Neurorepair**, Leipzig, Germany 19-22 April 2016.

Conf. 5: **Vivien D.**, tPA, more than a fibrinolytic, International Chinese Stroke Conference. 24-26 June 2016, **Beijin, China**.

Sem. 1: **Vivien D.** tPA isoforms orchestrate neuronal survival. **Candiolo Cancer Institute, Candiolo, Turino**, Italy, Feb., 26th, 2016.

Sem.2: **Vivien D.** Preclinical stroke studies, time for a compromise, Invitation Arthur Liesz, Research Center for Alzheimer and Stroke, **Munchen**, 7-8 june 2016,.

Sem.3: **Vivien D.**, Molecular imaging of neuroinflammatory processes. Invitation, Rick Dkjuikensen, 13 June 2016, **Utrecht, Netherland**.

Sem.4: **Vivien D.**, tPA, from bench to bedside in the field of stroke. Tiantan Stroke Hospital., 26 june 2016, **Beijin, China**.

Sem.5: **Vivien D.**, Experimental Stroke Models, UFR de Pharmacie, 19 Sept. 2016, **Nancy, France**.

Sem.6: **Vivien D.**, What new in the field of the neuronal tPA? IRIB seminar., Invitation B. Gonzalez, 28 Sept. 2016, **Rouen, France**.

Sem 7: **Vivien D.**, Molecular Imaging of Neuro-Immune Interaction, Inserm U1028, Invitation FHU CHU Poitiers, Pôle Biologie Santé, Pr T. Hauet, **Poitiers** 28 Nov 2016..

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Sem. 3. D. >VivieConf 1: D. Vivien. L'activateur tissulaire du plasminogène entre fibrinolyse et neurotransmission, **Journées des Nouveautés de la Recherche Clinique**, Société Française de Neurologie. Institut de la Moelle et du Cerveau. Paris, 15-16 janvier 2015.

Conf 2: D. Vivien. Molecular magnetic resonance imaging of brain-immune interactions. Hot topics in Molecular Imaging, **9th winter conference of the European Society for Molecular Imaging** 2015, Les Houches, France, 01-06 Février 2015.

Conf 3: D. Vivien. Endovascular treatment for acute ischemic stroke, **11th International Conference on Cerebral Vascular Biology**, Paris, 6-9 july 2015.

Conf 4: D. Vivien. Qu'est-ce qu'un fibrinolytique au plan moléculaire ?, **Congrès National de la Société Française de Pharmacologie et de Thérapeutique**. Caen, 21-22 Avril 2015.

Conf 5: D. Vivien, Imaging of neurinflammation, **European Stroke Science Workshop**. Garmisch-Partenkirchen, Germany, 19-21 November 2015.

Conf 6: D. Vivien, How to improve stroke therapy : from bench to beside. **Journée recherche & santé, Accident Vasculaire Cérébral**. clinique physiopathologie, Aviesan, Paris, 24 novembre 2015.

Conf 7: D. Vivien, Inflammation et AVC, implication thérapeutiques. **20^{ème} journée de la société Française de Neurovasculaire**. Paris, 25-27 November 2015.

Sém 1: D. Vivien. Imagerie moléculaire des accidents vasculaires cérébraux. **Séminaires de l'Institut Langevin**. Paris, 20 janvier 2015.

Sém 2: D. Vivien. tPA more than a fibrinolytic. **13^{ème} cycle de séminaires de l'Hôpital Neurologique de Lyon**. Lyon, 26 mars 2015.

Sém 3: D. Vivien. tPA and synaptic plasticity. invited by Dr B. Gonzalez, Team ERI 28. INSERM. **Microvascular Endothelium and Neonate Brain Lesions. NeoVasc**. Rouen, 23 Février 2015.

Sém 4: D. Vivien. tPA more than a fibrinolytic. **4^{ème} journée de l'IRIB, The Rouen Institute for Research and Innovation in Biomedicine**. 5 juin 2015.

Sém 5: D. Vivien. Essais précliniques multicentriques et Imagerie Moléculaire de VCAM-1 et p-selectin. **Journée scientifique du DHU Neurovasc** Paris, 20 mars 2015.

Sém 6: D. Vivien. co-organisation "The Neurovascular Unit in Health and Diseases ». **Atelier ITMO Neurosciences**. Paris, 26 mai 2015.

Sém 7: D. Vivien, tPA orchestrates brain functions. **IBiS**. Campus Hospital Universitario Virgen del Rocío Sevilla, Spain. November 5th, 2015.