

BRAIN



Cover image: Toxic blood leaks in the brain inhibiting remyelination with implications for the development of therapeutic strategies for neuro-repair in multiple sclerosis and other neurological diseases with blood-brain barrier disruption and myelin damage. From Petersen et al. BMP receptor blockade overcomes extrinsic inhibition of remyelination and restores neurovascular homeostasis. Pp. 2291-2301.

Illustration by Ella Marushchenko.

Contents

Editorial

Proust and his neurologists: the challenge of functional disorders

M. Husain
2227

Essay

Time for a new deal between neurology and psychoanalysis

D. Centonze and M. S. Bassi
2228

Scientific Commentaries

Autoantibodies and microglia: boon or bane?

M. Naughton and A. G. de la Fuente
2231

Modelling Charcot-Marie-Tooth disease in a dish reveals common cell type-specific alterations

J. S. Müller and R. Horvath
2234

Pathogenic mechanisms underlying SLC6A1 variant-mediated neurodevelopmental disorders

J. Z. Cheng and G. L. Carvill
2237

Tubulin methylation of lysine 40 by SETD2: a new way to tune neuronal functions?

A. Andrieux and K. Sadoul
2240

Review Articles

The role of noradrenaline in cognition and cognitive disorders

N. Holland, T. W. Robbins and J. B. Rowe

2243

Consciousness among delta waves: a paradox?

J. Frohlich, D. Toker and M. M. Monti

2257

Update

The neuroimaging evidence of brain abnormalities in functional movement disorders

S. Sasikumar and A. P. Strafella

2278

Reports

Discriminatory ability of next-generation tau PET tracers for Alzheimer's disease

S. Y. Yap, B. Frias, M. C. Wren, M. Schöll, N. C. Fox, E. Årstad, T. Lashley and K. Sander

2284

BMP receptor blockade overcomes extrinsic inhibition of remyelination and restores neurovascular homeostasis

M. A. Petersen, R. Tognatta, A. Meyer-Franke, E. A. Bushong, A. S. Mendiola, Z. Yan, A. Muthusamy, M. Merlini, R. Meza-Acevedo, B. Cabrera, Y. Zhou, R. Thomas, J. K. Ryu, H. Lassmann, M. H. Ellisman and K. Akassoglou

2291

Tau mis-splicing correlates with motor impairments and striatal dysfunction in a model of tauopathy

A. Damianich, C. L. Facal, J. A. Muñoz, C. Mininni, M. Soiza-Reilly, M. Ponce De León, L. Urrutia, G. Falasco,

J. E. Ferrario and M. E. Avale

2302

Clinical Trial

Motor and cognitive outcomes of cerebello-spinal stimulation in neurodegenerative ataxia

A. Benussi, V. Cantoni, M. Manes, I. Libri, V. Dell'Era, A. Datta, C. Thomas, C. Ferrari, A. Di Fonzo, R. Fancellu, M. Grassi, A. Brusco, A. Alberici and B. Borroni

2310

Opening of ATP sensitive potassium channels causes migraine attacks with aura

M. A. Al-Karaghali, H. Ghanizada, C. A. W. Nielsen, A. Hougaard and M. Ashina

2322

Original Articles

Human tauopathy-derived tau strains determine the substrates recruited for templated amplification

A. Tarutani, H. Miyata, T. Nonaka, K. Hasegawa, M. Yoshida, Y. Saito, S. Murayama, A. C. Robinson, D. M. A. Mann, T. Tomita and M. Hasegawa

2333

Astrocytic glycogen accumulation drives the pathophysiology of neurodegeneration in Lafora disease

J. Duran, A. Hervera, K. H. Markussen, O. Varea, I. López-Soldado, R. C. Sun, J. A. del Río, M. S. Gentry and J. J. Guinovart

2349

MOG autoantibodies trigger a tightly-controlled FcR and BTK-driven microglia proliferative response

K. Pellerin, S. J. Rubino, J. C. Burns, B. A. Smith, C.-A. McCarl, J. Zhu, L. Jandreski, P. Cullen, T. M. Carlile, A. Li, J. V. Rebollar, J. Sybulski, T. L. Reynolds, B. Zhang, R. Basile, H. Tang, C. P. Harp, A. Pellerin, J. Silbereis, N. Franchimont, E. Cahir-McFarland, R. M. Ransohoff, T. O. Cameron and M. Mingueneau

2361

Features of MOG required for recognition by patients with MOG antibody-associated disorders

C. Macrini, R. Gerhards, S. Winklmeier, L. Bergmann, S. Mader, M. Spadaro, A. Vural, M. Smolle, R. Hohlfeld, T. Kümpfel, S. F. Lichtenthaler, H. G. Franquelim, D. Jenne and E. Meinl

2375

Hospital-diagnosed infections before age 20 and risk of a subsequent multiple sclerosis diagnosis

Y. Xu, K. A. Smith, A. Hiyoshi, F. Piehl, T. Olsson and S. Montgomery

2390

Staging of astrocytopathy and complement activation in neuromyelitis optica spectrum disorders

Y. Takai, T. Misu, H. Suzuki, T. Takahashi, H. Okada, S. Tanaka, K. Okita, S. Sasou, M. Watanabe, C. Namatame, Y. Matsumoto, H. Ono, K. Kaneko, S. Nishiyama, H. Kuroda, I. Nakashima, H. Lassmann, K. Fujihara, Y. Itoyama and M. Aoki

2401

Single nucleotide variations in ZBTB46 are associated with post-thrombotic parenchymal haematoma

C. Carrera, J. Cárcel-Márquez, N. Culell, N. Torres-Águila, E. Muíño, J. Castillo, T. Sobrino, F. Campos, E. Rodríguez-Castro, L. Lluçà-Carol, M. Millán, L. Muñoz-Narbona, E. López-Cancio, A. Bustamante, M. Ribó, J. Álvarez-Sabín, J. Jiménez-Conde, J. Roquer, E. Giralte-Steinhauer, C. Soriano-Tárraga, M. Mola-Caminal, C. Vives-Bauza, R. D. Navarro, S. Tur, V. Obach, J. F. Arenillas, T. Segura, G. Serrano-Heras, J. Martí-Fàbregas, R. Delgado-Mederos, M. M. Freijo-Guerrero, F. Moniche, J. A. Cabezas, M. Castellanos, C. Gallego-Fabrega, J. González-Sánchez, J. Krupinsky, D. Strbian, T. Tatlisumak, V. Thijs, R. Lemmens, A. Slowik, J. Pera, S. Kittner, J. Cole, L. Heitsch, L. Ibañez, C. Cruchaga, J.-M. Lee, J. Montaner and I. Fernández-Cadenas on behalf of the International Stroke Genetic Consortium and the Spanish Stroke Genetic Consortium

2416

INPP5K and SIL1 associated pathologies with overlapping clinical phenotypes converge through dysregulation of PHGDH

D. Hathazi, D. Cox, A. D'Amico, G. Tasca, R. Charlton, R.-Y. Carlier, J. Baumann, L. Kollipara, R. P. Zahedi, I. Feldmann, J.-F. Deleuze, A. Torella, R. Cohn, E. Robinson, F. Ricci, H. Jungbluth, F. Fattori, A. Boland, E. O'Connor, R. Horvath, R. Barresi, H. Lochmüller, A. Urtizberea, M.-L. Jacquemont, I. Nelson, L. Swan, G. Bonne and A. Roos

2427

Aromatic L-amino acid decarboxylase deficiency: a patient-derived neuronal model for precision therapies

G. Rossignoli, K. Krämer, E. Lugarà, H. Alrashidi, S. Pope, C. De La Fuente Barrigon, K. Barwick, G. Bisello, J. Ng, J. Counsell, G. Lignani, S. J. R. Heales, M. Bertoldi, S. Barral and M. A. Kurian

2443

Bi-allelic loss of function variants in COX20 gene cause autosomal recessive sensory neuronopathy

H.-L. Dong, Y. Ma, H. Yu, Q. Wei, J.-Q. Li, G.-L. Liu, H.-F. Li, L. Chen, D.-F. Chen, G. Bai and Z.-Y. Wu

2457

Induced pluripotent stem cell-derived motor neurons of CMT type 2 patients reveal progressive mitochondrial dysfunction

J. Van Lent, P. Verstraelen, B. Asselbergh, E. Adriaenssens, L. Mateiu, C. Verbist, V. De Winter, K. Eggermont, L. Van Den Bosch, W. H. De Vos and V. Timmerman

2471

Atypical neural topographies underpin dysfunctional pattern separation in temporal lobe epilepsy

Q. Li, S. Tavakol, J. Royer, S. Larivière, R. Vos De Wael, B.-y. Park, C. Paquola, D. Zeng, B. Caldaïrou, D. S. Bassett, A. Bernasconi, N. Bernasconi, B. Frauscher, J. Smallwood, L. Caciagli, S. Li and B. C. Bernhardt

2486

Common molecular mechanisms of SLC6A1 variant-mediated neurodevelopmental disorders in astrocytes and neurons

F. Mermer, S. Poliquin, K. Rigsby, A. Rastogi, W. Shen, A. Romero-Morales, G. Nwosu, P. McGrath, S. Demerast, J. Aoto, G. Bilousova, D. Lal, V. Gama and J.-Q. Kang

2499

Locus coeruleus integrity and the effect of atomoxetine on response inhibition in Parkinson's disease

C. O'Callaghan, F. H. Hezemans, R. Ye, C. Rua, P. S. Jones, A. G. Murley, N. Holland, R. Regenthal, K. A. Tsvetanov, N. Wolpe, R. A. Barker, C. H. Williams-Gray, T. W. Robbins, L. Passamonti and J. B. Rowe

2513

Neuronal SETD2 activity links microtubule methylation to an anxiety-like phenotype in mice

M. Koenning, X. Wang, M. Karki, R. K. Jangid, S. Kearns, D. N. Tripathi, M. Cianfrocco, K. J. Verhey, S. Y. Jung, C. Coarfa, C. S. Ward, B. T. Kalish, S. L. Grimm, W. K. Rathmell, R. Mostany, R. Dere, M. N. Rasband, C. L. Walker and I. Y. Park

2527

Functional maps of direct electrical stimulation-induced speech arrest and anomia: a multicentre retrospective study

J. Lu, Z. Zhao, J. Zhang, B. Wu, Y. Zhu, E. F. Chang, J. Wu, H. Duffau and M. S. Berger

2541

Letters to the Editor

From early limbic inflammation to long COVID sequelae

E. Guedj, S. Morbelli, E. Kaphan, J.-Y. Campion, P. Dudouet, M. Ceccaldi, S. Cammilleri, F. Nobili and C. Eldin

e65

Reply: From early limbic inflammation to long COVID sequelae

P. T. Meyer, G. Blazhenets, M. Prinz and J. A. Hosp

e66

Errata

e67

Corrigendum

e71