

### **Neurofunctional plasticity in fraction learning: An fMRI training study**

Wortha, S. M., Bloechle, J., Ninaus, M., Kiili, K., Lindstedt, A., Bahnmueller, J., Moeller, K. & Klein, E., 1 Dec 2020, In : Trends in Neuroscience and Education. 21, 15 p., 100141.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Assessment of PIV performance in validating CFD models from nasal cavity CBCT scans**

Ormiskangas, J., Valtonen, O., Kivekäs, I., Dean, M., Poe, D., Järnstedt, J., Leikkala, J., Harju, T., Saarenrinne, P. & Rautiainen, M., 1 Nov 2020, In : Respiratory Physiology and Neurobiology. 282, 9 p., 103508.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Salivary cortisol reactivity to psychological stressors in infancy: A meta-analysis**

Puhakka, I. J. A. & Peltola, M. J., 1 May 2020, In : PSYCHONEUROENDOCRINOLOGY. 115, 104603.

Research output: Contribution to journal > Review Article > Scientific > peer-review

### **Automatic assessment of the myoclonus severity from videos recorded according to standardized Unified Myoclonus Rating Scale protocol and using human pose and body movement analysis**

Hyppönen, J., Hakala, A., Annala, K., Zhang, H., Peltola, J., Mervaala, E. & Kälviäinen, R., 1 Mar 2020, In : Seizure. 76, p. 72-78 7 p.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Deep audio-visual saliency: Baseline model and data**

Tavakoli, H. R., Borji, A., Kannala, J. & Rahtu, E., 6 Feb 2020, *Proceedings ETRA 2020 Short Papers - ACM Symposium on Eye Tracking Research and Applications, ETRA 2020*. Spencer, S. N. (ed.). ACM, 3

Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

### **A Computational Model of Interactions Between Neuronal and Astrocytic Networks: The Role of Astrocytes in the Stability of the Neuronal Firing Rate**

Lenk, K., Satuvuori, E., Lallouette, J., Ladrón-de-Guevara, A., Berry, H. & Hyttinen, J. A. K., 22 Jan 2020, In : Frontiers in Computational Neuroscience. 13, 19 p., 92.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Membrane-Dependent Binding and Entry Mechanism of Dopamine into Its Receptor**

Lolicato, F., Juhola, H., Zak, A., Postila, P. A., Saukko, A., Rissanen, S., Enkavi, G., Vattulainen, I., Kepczynski, M. & Róg, T., 2020, In : ACS Chemical Neuroscience. 11, 13, p. 1914–1924 11 p.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Randomized Multiresolution Scanning in Focal and Fast E/MEG Sensing of Brain Activity with a Variable Depth**

Rezaei, A., Koulouri, A. & Pursiainen, S., 2020, In : Brain Topography. 33, 2, p. 161-175 15 p.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Tidal breathing flow profiles during sleep in wheezing children measured by impedance pneumography**

Gracia-Tabuenca, J., Seppä, V-P., Jauhiainen, M., Paassilta, M., Viik, J. & Karjalainen, J., 2020, In : Respiratory Physiology and Neurobiology. 271, 103312.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Unique Features of Network Bursts Emerge From the Complex Interplay of Excitatory and Inhibitory Receptors in Rat Neocortical Networks**

Teppola, H., Aćimović, J. & Linne, M. L., 6 Sep 2019, In : FRONTIERS IN CELLULAR NEUROSCIENCE. 13, 377.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Reduced level of docosahexaenoic acid shifts GPCR neuroreceptors to less ordered membrane regions**

Javanainen, M., Enkavi, G., Guixà-González, R., Kulig, W., Martínez-Seara, H., Levental, I. & Vattulainen, I., 1 May 2019, In : PLoS Computational Biology. 15, 5, e1007033.

Research output: Contribution to journal > Article > Scientific > peer-review

### **Viability of Mouse Retinal Explant Cultures Assessed by Preservation of Functionality and Morphology**

Alarautalahti, V., Ragauskas, S., Hakkarainen, J. J., Uusitalo-Järvinen, H., Uusitalo, H., Hyttinen, J., Kalesnykas, G. & Nymark, S., 1 May 2019, In : *Investigative ophthalmology & visual science*. 60, 6, p. 1914-1927 14 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Improved EEG source localization with Bayesian uncertainty modelling of unknown skull conductivity**

Rimpiläinen, V., Koulouri, A., Lucka, F., Kaipio, J. P. & Wolters, C. H., 1 Mar 2019, In : *NeuroImage*. 188, p. 252-260 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Diffusion tensor imaging and disability progression in multiple sclerosis: A 4-year follow-up study**

Kolasa, M., Hakulinen, U., Brander, A., Hagman, S., Dastidar, P., Elovaara, I. & Sumelahti, M-L., Jan 2019, In : *Brain and Behavior*. 9, 1, e01194.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Advances in Human Stem Cell-Derived Neuronal Cell Culturing and Analysis**

Ylä-Outinen, L., Tanskanen, J. M. A., Kapucu, F. E., Hyysalo, A., Hyttinen, J. A. K. & Narkilahti, S., 2019, *In Vitro Neuronal Networks: From Culturing Methods to Neuro-Technological Applications*. Springer New York LLC, p. 299-329 31 p. (Advances in Neurobiology; vol. 22).

Research output: Chapter in Book/Report/Conference proceeding › Chapter › Scientific › peer-review

### **A realistic, accurate and fast source modeling approach for the EEG forward problem**

Miinalainen, T., Rezaei, A., Us, D., Nüßing, A., Engwer, C., Wolters, C. H. & Pursiainen, S., 2019, In : *NeuroImage*. 184, 1, p. 56-67 12 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Astrocyte lineage cells are essential for functional neuronal differentiation and synapse maturation in human iPSC-derived neural networks**

Klapper, S. D., Garg, P., Dagar, S., Lenk, K., Gottmann, K. & Nieweg, K., 2019, In : *Glia*. 67, 10, p. 1893-1909 17 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Overview of Sources and Characteristics of Nanoparticles in Urban Traffic-Influenced Areas**

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Research output: Contribution to journal › Article › Scientific › peer-review

### **Teaching semantics and skills for human-robot collaboration**

Angleraud, A., Houbre, Q. & Pieters, R., 2019, In : *Paladyn*. 10, 1, p. 318-329 12 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Zeffiro User Interface for Electromagnetic Brain Imaging: a GPU Accelerated FEM Tool for Forward and Inverse Computations in Matlab**

He, Q., Rezaei, A. & Pursiainen, S., 2019, In : *Neuroinformatics*. 14 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Cognitive load and metacognitive confidence extraction from pupillary response**

Gavas, R. D., Tripathy, S. R., Chatterjee, D. & Sinha, A., 1 Dec 2018, In : *Cognitive Systems Research*. 52, p. 325-334 10 p.

Research output: Contribution to journal › Article › Scientific › peer-review

### **Human-robot interactive learning architecture using ontologies and symbol manipulation**

Angleraud, A., Houbre, Q., Kyrki, V. & Pieters, R., 6 Nov 2018, *RO-MAN 2018 - 27th IEEE International Symposium on Robot and Human Interactive Communication: August 27-31, 2018, Nanjing, China..* IEEE, p. 384-389 6 p. (IEEE RO-MAN).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

### **Data-driven study of synchronous population activity in generic spiking neuronal networks: How much do we capture using the minimal model for the considered phenomena?**

Acimovic, J., Teppola, H., Mäki-Marttunen, T. M. & Linne, M-L., 29 Oct 2018, In : BMC Neuroscience. 19, Suppl 2, p. 68-69 1 p.

Research output: Contribution to journal › Meeting Abstract › Scientific › peer-review

#### **Improvement of computational efficiency of a biochemical plasticity model**

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Research output: Contribution to journal › Meeting Abstract › Scientific › peer-review

#### **Data-driven study of synchronous population activity in generic spiking neuronal networks: How much do we capture using the minimal model for the considered phenomena?**

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Research output: Other conference contribution › Paper, poster or abstract › Scientific

#### **Assessment of mutation probabilities of KRAS G12 missense mutants and their long-timescale dynamics by atomistic molecular simulations and Markov state modeling**

Pantsar, T., Rissanen, S., Dauch, D., Laitinen, T., Vattulainen, I. & Poso, A., 10 Sep 2018, In : PLoS Computational Biology. 14, 9, e1006458.

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#### **Improving efficiency in convolutional neural networks with multilinear filters**

Tran, D. T., Iosifidis, A. & Gabbouj, M., 1 Sep 2018, In : Neural Networks. 105, p. 328-339 12 p.

Research output: Contribution to journal › Article › Scientific › peer-review

#### **Negatively Charged Gangliosides Promote Membrane Association of Amphipathic Neurotransmitters**

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Research output: Contribution to journal › Article › Scientific › peer-review

#### **Epileptiform and periodic EEG activities induced by rapid sevoflurane anaesthesia induction**

Sonkajärvi, E., Rytty, S., Alahuhta, S., Suominen, K., Kumpulainen, T., Ohtonen, P., Karvonen, E. & Jäntti, V., 1 Mar 2018, In : Clinical Neurophysiology. 129, 3, p. 638-645 8 p.

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#### **Nonlinear recurrent neural networks for finite-time solution of general time-varying linear matrix equations**

Xiao, L., Liao, B., Li, S. & Chen, K., Feb 2018, In : Neural Networks. 98, p. 102-113 12 p.

Research output: Contribution to journal › Article › Scientific › peer-review

#### **A Primal Neural Network for Online Equality-Constrained Quadratic Programming**

Chen, K. & Zhang, Z., 2018, In : Cognitive Computation. 10, 2, p. 381-388 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

#### **From in silico astrocyte cell models to neuron-astrocyte network models: A review**

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Research output: Contribution to journal › Review Article › Scientific › peer-review

#### **Concerted regulation of npc2 binding to endosomal/lysosomal membranes by bis(monoacylglycero)phosphate and sphingomyelin**

Enkavi, G., Mikkolainen, H., Güngör, B., Ikonen, E. & Vattulainen, I., 1 Oct 2017, In : PLoS Computational Biology. 13, 10, e1005831.

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#### **MetriIntMeas a novel metric for measuring the intelligence of a swarm of cooperating agents**

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Research output: Contribution to journal › Article › Scientific › peer-review

### **Inhibition of A $\beta$ Amyloid Growth and Toxicity by Silybins: The Crucial Role of Stereochemistry**

Sciacca, M. F. M., Romanucci, V., Zarrelli, A., Monaco, I., Lolicato, F., Spinella, N., Galati, C., Grasso, G., D'Urso, L., Romeo, M., Diomede, L., Salmona, M., Bongiorno, C., Di Fabio, G., La Rosa, C. & Milardi, D., 16 Aug 2017, In : ACS Chemical Neuroscience. 8, 8, p. 1767-1778 12 p.

Research output: Contribution to journal > Article > Scientific > peer-review

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Satuvuori, E., Mulansky, M., Bozanic, N., Malvestio, I., Zeldenrust, F., Lenk, K. & Kreuz, T., 1 Aug 2017, In : Journal of Neuroscience Methods. 287, p. 25-38 14 p.

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Research output: Contribution to journal > Article > Scientific > peer-review

### **Calcium Assists Dopamine Release by Preventing Aggregation on the Inner Leaflet of Presynaptic Vesicles**

Mokkila, S., Postila, P. A., Rissanen, S., Juhola, H., Vattulainen, I. & Róg, T., 21 Jun 2017, In : ACS Chemical Neuroscience. 8, 6, p. 1242-1250 9 p.

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### **CNN-based edge filtering for object proposals**

Waris, M. A., Iosifidis, A. & Gabbouj, M., 2 Jun 2017, In : Neurocomputing. 266, p. 631-640

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### **Network-wide adaptive burst detection depicts neuronal activity with improved accuracy**

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Research output: Contribution to journal > Article > Scientific > peer-review

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### **Cell culture chamber with gas supply for prolonged recording of human neuronal cells on microelectrode array**

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### **Predicting symptom severity in autism spectrum disorder based on cortical thickness measures in agglomerative data**

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### **The relationship between recognition memory for emotion-laden words and white matter microstructure in normal older individuals**

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#### **Automatic objective thresholding to detect neuronal action potentials**

Tanskanen, J. M. A., Kapucu, F. E., Välikki, I. & Hyttinen, J. A. K., 29 Aug 2016, *Proceedings of 2016 24th European Signal Processing Conference (EUSIPCO)*. p. 662-666 5 p.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

#### **Effect of rhodopsin phosphorylation on dark adaptation in mouse rods**

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#### **Comparison of Feature Selection Techniques in Machine Learning for Anatomical Brain MRI in Dementia**

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#### **How Many Is Enough? Effect of Sample Size in Inter-Subject Correlation Analysis of fMRI**

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Research output: Contribution to journal › Article › Scientific › peer-review

#### **Morphological Differentiation Towards Neuronal Phenotype of SH-SY5Y Neuroblastoma Cells by Estradiol, Retinoic Acid and Cholesterol**

Teppola, H., Sarkanen, J. R., Jalonen, T. O. & Linne, M-L., 2016, In : *Neurochemical Research*. 41, 4, p. 731-747

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#### **One-Class Classification based on Extreme Learning and Geometric Class Information**

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#### **Whole-cell morphological properties of neurons constrain the nonrandom features of network connectivity**

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#### **Assessment of respiratory effort during sleep with noninvasive techniques**

Tenhunen, M., Hasan, J. & Himanen, S. L., 1 Dec 2015, In : *Sleep Medicine Reviews*. 24, p. 103-104 2 p.

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#### **Eustachian tube mucosal inflammation scale validation based on digital video images**

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#### **Severe cerebral white matter lesions in ischemic stroke patients are associated with less time spent at home and early institutionalization**

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#### **Elevated levels of soluble CD26 and CD30 in multiple sclerosis**

Basnyat, P., Natarajan, R., Vistbakka, J., Lehtikangas, M., Airas, L., Matinlauri, I., Elovaara, I. & Hagman, S., 1 Nov 2015, In : *Clinical and Experimental Neuroimmunology*. 6, 4, p. 419-425 7 p.

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### **Human anterior thalamic nuclei are involved in emotion-attention interaction**

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### **Building new computational models to support health behavior change and maintenance: new opportunities in behavioral research**

Spruijt-Metz, D., Hekler, E., Saranummi, N., Intille, S., Korhonen, I., Nilsen, W., Rivera, D. E., Spring, B., Michie, S., Asch, D. A., Sanna, A., Salcedo, V. T., Kukakfa, R. & Pavel, M., 17 Sep 2015, In : *Translational Behavioral Medicine*. 5, 3, p. 335-346 12 p.

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### **Evaluation of the different sleep-disordered breathing patterns of the compressed tracheal sound**

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### **Association between soluble L-selectin and anti-JCV antibodies in natalizumab-treated relapsing-remitting MS patients**

Basnyat, P., Hagman, S., Kolasa, M., Koivisto, K., Verkkoniemi-Ahola, A., Airas, L. & Elovaara, I., 1 Jul 2015, In : *Multiple Sclerosis and Related Disorders*. 4, 4, p. 334-338 5 p.

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### **The effects of neuron morphology on graph theoretic measures of network connectivity: The analysis of a two-level statistical model**

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### **Experiments of the sonification of the sleep electroencephalogram**

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### **Podocyte apoptosis is prevented by blocking the Toll-like receptor pathway**

Saurus, P., Kuusela, S., Lehtonen, E., Hyvönen, M. E., Ristola, M., Fogarty, C. L., Tienari, J., Lassenius, M. I., Forsblom, C., Lehto, M., Saleem, M. A., Groop, P. H., Holthöfer, H. & Lehtonen, S., 1 May 2015, In : *CELL DEATH AND DISEASE*. 6, 5, e1752.

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### **Standardized evaluation of algorithms for computer-aided diagnosis of dementia based on structural MRI: The CADDementia challenge**

Bron, E. E., Smits, M., van der Flier, W. M., Vrenken, H., Barkhof, F., Scheltens, P., Papma, J. M., Steketee, R. M. E., Méndez Orellana, C., Meijboom, R., Pinto, M., Meireles, J. R., Garrett, C., Bastos-Leite, A. J., Abdulkadir, A., Ronneberger, O., Amoroso, N., Bellotti, R., Cárdenas-Peña, D., Álvarez-Meza, A. M., Dolph, C. V., Iftekharuddin, K. M., Eskildsen, S. F., Coupé, P., Fonov, V. S., Franke, K., Gaser, C., Ledig, C., Guerrero, R., Tong, T., Gray, K. R., Moradi, E., Tohka, J., Routier, A., Durrleman, S., Sarica, A., Di Fatta, G., Sensi, F., Chincarini, A., Smith, G. M., Stoyanov, Z. V.,

Sørensen, L., Nielsen, M., Tangaro, S., Inglese, P., Wachinger, C., Reuter, M., van Swieten, J. C., Niessen, W. J. & Klein, S., 1 May 2015, In : *NeuroImage*. 111, p. 562-579 18 p.

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#### **Analysis of apoptosis-related genes in patients with clinically isolated syndrome and their association with conversion to multiple sclerosis**

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#### **Defining the anterior nucleus of the thalamus (ANT) as a deep brain stimulation target in refractory epilepsy: Delineation using 3 T MRI and intraoperative microelectrode recording**

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#### **Effects of cytokine activation and oxidative stress on the function of the human embryonic stem cell-derived retinal pigment epithelial cells**

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#### **Extreme learning machine based supervised subspace learning**

Iosifidis, A., 2015, In : *Neurocomputing*. 167, p. 158-164 7 p.

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#### **Patient-specific induced pluripotent stem cell-derived RPE cells: Understanding the pathogenesis of retinopathy in long-chain 3-hydroxyacyl-CoA dehydrogenase deficiency**

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Iosifidis, A., Tefas, A. & Pitas, I., 5 Dec 2014, In : *Neurocomputing*. 145, p. 250-262 13 p.

Research output: Contribution to journal › Article › Scientific › peer-review

#### **Autoimmunity-related immunological serum markers and survival in a tertiary care cohort of adult patients with epilepsy**

Nevalainen, O., Auvinen, A., Ansakorpi, H., Raitanen, J. & Isojärvi, J., 1 Nov 2014, In : *EPILEPSY RESEARCH*. 108, 9, p. 1675-1679 5 p.

Research output: Contribution to journal › Article › Scientific › peer-review

#### **Immediate effects of deep brain stimulation of anterior thalamic nuclei on executive functions and emotion-attention interaction in humans**

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Research output: Contribution to journal › Article › Scientific › peer-review

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Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

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### **Real-time hidden gaze point correction**

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### **TraQuMe: A tool for measuring the gaze tracking quality**

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Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

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Research output: Contribution to journal › Article › Scientific › peer-review

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**Fluorescent probes as a tool for cell population tracking in spontaneously active neural networks derived from human pluripotent stem cells**

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**Neuroprotective effect of RO-20-1724-a phosphodiesterase4 inhibitor against intracerebroventricular streptozotocin induced cognitive deficit and oxidative stress in rats**

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**Inhibition of Casein kinase-2 induces p53-dependent cell cycle arrest and sensitizes glioblastoma cells to tumor necrosis factor (TNF $\alpha$ )-induced apoptosis through SIRT1 inhibition**

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**Computational study of structural changes in neuronal networks during growth: a model of dissociated neocortical cultures**

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