

3

Name of journal: *World Journal of Stem Cells*

ESPS Manuscript NO: 15973

Columns: REVIEW

Importance of being Nernst: An essential role for synaptogenesis and network emergence as higher-order metrics of neurogenesis in stem cell-derived neuron models

Aaron B Bradford, Patrick M McNutt

Abstract

Functional synaptogenesis and network emergence are signature endpoints of neurogenesis. These behaviors functionally provide higher-order confirmation that biochemical and cellular processes necessary for neurotransmitter release, post-synaptic detection and network propagation of neuronal activity have been properly expressed and coordinated among cells. The development of synaptic neurotransmission can therefore be considered a defining property of neurons. Although dissociated primary neuron cultures readily form functioning synapses and network behaviors *in vitro*, continuously cultured neurogenic cell lines have historically failed to meet these criteria. Thus physiological relevant, scalable, *in vitro*-derived neuron models are critically needed for a wide array of studies, including molecular neuroscience, developmental neurogenesis, disease research and

Match Overview

1	Internet 62 words crawled on 19-Feb-2013 www.ncbi.nlm.nih.gov	<1%
2	Internet 49 words crawled on 02-Nov-2014 www.science.gov	<1%
3	Internet 24 words crawled on 08-Jan-2015 www.wjgnet.com	<1%
4	Internet 20 words crawled on 16-Sep-2014 www.neurologyindia.com	<1%
5	Internet 20 words crawled on 28-Mar-2012 www.doria.fi	<1%
6	Internet 17 words crawled on 07-Oct-2014 trinity.engr.uconn.edu	<1%
7	CrossCheck 16 words Gina Turrigiano. "Homeostatic Synaptic Plasticity", Structural And Functional Organization Of The Synapse, 2008	<1%
8	CrossCheck 14 words Hubbard, Kyle, Phillip Beske, Megan Lyman, and Patrick M cNutt. "Functional Evaluation of Biological Neurotoxins in ...	<1%
9	CrossCheck 13 words Dutta, Susmita, Gurbind Singh, Sailaja Sreejith, Murali Krishna Mamidi, Juani Mazmin Husin, Indrani Datta, Rajarshi P	<1%



Importance of being Nernst: synaptic activity and functional relevance in



网页

图片

新闻

视频

更多

搜索工具

找到约 75,100 条结果 (用时 0.84 秒)

Google 学术: Importance of being Nernst: synaptic activity and functional relevance in stem cell-derived neurons

... stem cells as compared to fetal neuronal stem cells - Lepski - 被引用次数: 29

Delayed functional maturation of human neuronal ... - Lepski - 被引用次数: 10

... of D6/GFP mice differentiate primarily into neurons ... - Prajerova - 被引用次数: 16

Maturation of AMPAR Composition and the GABAAR ...

www.ncbi.nlm.nih.gov > ... > Literature > PubMed Central (PMC) - 翻译此页

作者: MR Livesey - 2014 - 被引用次数: 1 - 相关文章

2014年3月12日 - Neurons derived from human pluripotent stem cells theoretically offer the potential to ... in a human-relevant system, although this is currently not well explored. ... and ligand-gated ion channels, and exhibit putative synaptic activity; however, ... $[Cl^-]_{INT}$ was calculated using the Nernst equation in which ...

[PDF] Survival and Neuronal Differentiation of Mesenchymal Ste...

www.researchgate.net/...neuronal...stem_cells.../09e41502a887... - 翻译此页

作者: G Lepski - 被引用次数: 18 - 相关文章

Mesenchymal stem cells (MSCs) are being considered a promising option for ... ditionally, the yield of mature neuronal cells derived from the implanted cells was ...

5. Synapses, Receptor Cells, and Brain

www.bem.fi/book/05/05.htm - 翻译此页

The interconnection between neurons, called the synapse, behaves as a simple switch but also has a special role in information processing. ... The function of the synapse is to transfer electric activity (information) from one cell to another. ... One can show that it equals the average Nernst potential of sodium and potassium, ...

[网页](#)[图片](#)[新闻](#)[视频](#)[更多 ▾](#)[搜索工具](#)

找到约 71,300 条结果 (用时 0.70 秒)

Google 学术: Importance of being nernst: Synaptic activity and functional relevance in stem cell-derived neurons

... stem cells as compared to fetal neuronal stem cells - Lepski - 被引用次数: 29

Delayed functional maturation of human neuronal ... - Lepski - 被引用次数: 10

... of D6/GFP mice differentiate primarily into neurons ... - Prajerova - 被引用次数: 16

[PLOS ONE: Functional Neuromuscular Junctions Formed by ...](#)

[journals.plos.org/plosone/article?id=10.1371/journal.pone...](#) ▾ [翻译此页](#)

2012年5月4日 - However, the synaptic activity of stem cell-derived MNs remains less well defined. ... that stem cell-derived MNs innervate muscle cells in a functionally relevant manner. ... Junctions Formed by Embryonic Stem Cell-Derived Motor Neurons. ... An important step towards this goal is the development of in vitro ...

缺少字词: nernst

Full Text - Journal of Neuroscience

[www.jneurosci.org/content/34/11/4070.full](#) ▾ [翻译此页](#)

作者: MR Livesey - 2014 - 被引用次数: 2 - [相关文章](#)

2014年3月12日 - Neurons derived from human pluripotent stem cells theoretically offer the potential to ... in a human-relevant system, although this is currently not well explored.