脳神経系の形成と発達を制御する脳内環境の解明

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Publicly

Project Area	Brain Environment
Project/Area Number	26111708
Research Category	Grant-in-Aid for Scientific Research on Innovative Areas (Research in a proposed research area)
Allocation Type	Single-year Grants
Review Section	Biological Sciences
Research Institution	Kanazawa University
Principal Investigator	**河崎 洋志** 金沢大学, 脳・肝インターフェースメディシン研究センター, 教授 (50303904)
Project Period (FY)	**2014-04-01 – 2016-03-31**
Project Status	Completed (Fiscal Year 2015)
Budget Amount *help	**¥9,360,000 (Direct Cost: ¥7,200,000、Indirect Cost: ¥2,160,000)** Fiscal Year 2015: ¥4,680,000 (Direct Cost: ¥3,600,000、Indirect Cost: ¥1,080,000) Fiscal Year 2014: ¥4,680,000 (Direct Cost: ¥3,600,000、Indirect Cost: ¥1,080,000)
Keywords	脳神経科学 / 大脳皮質 / 脳神経系 / マウス / 発達
Outline of Annual Research Achievements	脳神経系の形成・発達を制御する遺伝要因と環境要因の解明は、脳神経医学の最重要課題の一つである。受精から始まる哺乳類の一生において最大の環境変化は「出生」といえるが、出生前後の脳神経系の変化には不明な点が多い。最近我々は、マウス大脳皮質での感覚地図形成が、新生仔の出生により制御されていることを見いだした。またこれまでに、出生が神経回路形成のみならず哺乳行動の発達も制御していることを見いだした。そこで本研究課題では、出生直後に生じる大脳皮質の成熟機構の解明を行った結果、大脳皮質の樹状突起の発達を制御する新たなメカニズムを見いだした。本研究の成果は、基礎神経科学のみならず臨床脳医学的な波及効果も大きい。
Research Progress Status	27年度が最終年度であるため、記入しない。
Strategy for Future Research Activity	27年度が最終年度であるため、記入しない。

Report (2 results)

2015 Annual Research Report

2014 Annual Research Report

Research Products (55 results)

All | 2017 | 2016 | 2015 | 2014 | Other

All | Int'l Joint Research | Journal Article | Presentation | Book | Remarks | Patent(Industrial Property Rights)

[Int'l Joint Research] University of Zurich(スイス)

[Journal Article] Molecular investigations of development and diseases of the brain of higher mammals using the ferret 2017

[Journal Article] The effects of unilateral cochlear ablation on the expression of vesicular glutamate transporter 1 in the lower auditory pathway of neonatal rats. 2017

[Journal Article] Pathophysiological analyses of periventricular nodular heterotopia using gyrencephalic mammals 2017

[Journal Article] CRISPR/Cas9-Mediated Gene Knockout in the Mouse Brain Using In Utero Electroporation 2017

[Journal Article] Cell type-specific expression of FoxP2 in the ferret and mouse retina 2017

[Journal Article] Foxp2 Regulates Identities and Projection Patterns of Thalamic Nuclei During Development 2017

[Journal Article] Immunostaining of sulfatide-storing macrophages in gallbladder of a patient with metachromatic leukodystrophy 2016

[Journal Article] Several posttranslational modifications act in concert to regulate gephyrin scaffolding and GABAergic transmission 2016

[Journal Article] An essential role of SVZ progenitors in cortical folding in gyrencephalic mammals. 2016

[Journal Article] Sox11 balances dendritic morphogenesis with neuronal migration in the developing cerebral cortex 2016

[Journal Article] CRISPR/Cas9-mediated gene knockout in the mouse brain using in utero electroporation 2016

[Journal Article] Draxin from neocortical neurons controls the guidance of thalamocortical projections into the neocortex 2015

[Journal Article] Long-term two-photon calcium imaging of neuronal populations with subcellular resolution in adult 2015

[Journal Article] Pathophysiological analyses of cortical malformation using gyrencephalic mammals 2015

[Journal Article] In Vivo Two-Photon Imaging of Dendritic Spines in Marmoset Neocortex 2015

[Journal Article] Classic cadherins mediate selective intracortical circuit formation in the mouse neocortex. 2015

[Journal Article] Spatio-temporal regulation of the formation of the somatosensory system 2015

[Journal Article] フェレットを用いた高等哺乳動物の脳神経医学研究 2015

[Journal Article] Establishment of an experimental ferret ocular hypertension model for the analysis of central visual pathway damage 2014

[Journal Article] Molecular investigations of the brain of higher mammals using gyrencephalic carnivore ferrets 2014

[Journal Article] The development of suckling behavior of neonatal mice is regulated by birth 2014

[Journal Article] 脳神経系の形成制御機構の解明とその医学的応用 2014

[Presentation] Mechanisms of formation and malformation of the cerebral cortex of ferrets 2017

[Presentation] フェレットを使った脳神経系の形成と異常の解析 2016

[Presentation] Genetic and environmental regulation of neonatal cortical development 2016

[Presentation] 脳神経系の形成機構の解析とその医学的応用 2016

[Presentation] フェレットを用いた高等哺乳動物の脳神経系の分子遺伝学的解析 2015

[Presentation] The roles of birth and serotonin in neural circuit formation during development 2015

[Presentation] Two-photon calcium imaging using genetically-encoded calcium indicator in primate neocortex 2015

[Presentation] マーモセット大脳皮質におけるGCaMPを用いた2光子カルシウムイメージング 2015

[Presentation] Sox11による大脳皮質神経細胞の成熟抑制機構の解析 2015

[Presentation] 発生過程の視床パターン形成におけるFoxp2の機能解析 2015

[Presentation] 高等哺乳動物を用いた視覚系の分子生物学的解析 2015

[Presentation] フェレットとマウスにおけるFoxP2陽性網膜神経節細胞の個性解析 2015

[Presentation] The role of Foxp2 in the thalamic pattern formation during development 2015

[Presentation] 大脳皮質神経細胞における樹状突起の成熟抑制機構の解析 2015

[Presentation] 神経回路形成における軸索ガイダンス分子Draxinの機能 2015

[Presentation] 視床パターン形成におけるFoxp2の機能解析 2015

[Presentation] 感覚神経回路形成における出生の意義 2014

[Presentation] 大脳皮質神経細胞の成熟抑制機構の解析 2014

[Presentation] The molecular mechanism of thalamic pattern formation during development 2014

[Presentation] The molecular mechanism of thalamic pattern formation during development 2014

[Presentation] The role of Sox11 in neuronal maturation in the mouse cerebral cortex 2014

[Presentation] マウス大脳皮質の神経細胞成熟過程におけるSox11の機能解析 2014

[Presentation] 脳神経系の形成過程における出生の役割 2014

[Presentation] Birth regulates sensory map formation during development 2014

[Presentation] 出生による脳神経系発達の制御メカニズム 2014

[Book] Brain Evolution by Design 2017

[Book] Electroporation Methods and Neuroscience 2014

[Book] 脳神経系の発生・再生の融合的新展開 2014

[Book] 分子脳科学 2014

[Remarks] 河崎研究室

[Remarks] 河崎研究室

[Patent(Industrial Property Rights)] 高等哺乳動物を用いた新規脳疾患モデル動物 2015

URL: https://kaken.nii.ac.jp/grant/KAKENHI-PUBLICLY-26111708/

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