

# Novel regenerative therapies based on injury-induced neural stem cells obtained from patients with stroke

Research Project

All ▼

## Project/Area Number

15K06723

## Research Category

Grant-in-Aid for Scientific Research (C)

## Allocation Type

Multi-year Fund

## Section

一般

## Research Field

Neurophysiology / General neuroscience

## Research Institution

Hyogo College of Medicine

## Principal Investigator

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## Project Period (FY)

2015-04-01 – 2018-03-31

Project Status

Completed(Fiscal Year 2017)

Budget Amount \*help

¥5,070,000 (Direct Cost : ¥3,900,000、 Indirect Cost : ¥1,170,000)  
Fiscal Year 2017 : ¥1,690,000 (Direct Cost : ¥1,300,000、 Indirect Cost : ¥390,000)  
Fiscal Year 2016 : ¥1,690,000 (Direct Cost : ¥1,300,000、 Indirect Cost : ¥390,000)  
Fiscal Year 2015 : ¥1,690,000 (Direct Cost : ¥1,300,000、 Indirect Cost : ¥390,000)


Keywords

脳梗塞 / 幹細胞 / 神経再生

Outline of Final Research Achievements

Using a mouse model of cerebral infarction, we have previously demonstrated that neural stem/progenitor cells (NSPCs) develop within ischemic areas. The injury/ischemia-induced NSPCs (iNSPCs) likely originate in part from brain pericytes and they have the potential to differentiate into neural lineages. However, it is essential to understand the traits of iNSPCs in human brain for possible applications in stem cell-based therapies for stroke patients. To examine this, putative iNSPCs were extracted from ischemic brain tissue obtained from elderly stroke patients requiring decompressive craniectomy and partial lobectomy for diffuse cerebral infarction. Immunohistochemistry showed that nestin+ iNSPCs were localized near blood vessels within ischemic areas. Isolated iNSPCs also expressed nestin and demonstrated high proliferative potential. Furthermore, they formed neurosphere-like cell clusters and differentiated into neuronal lineages in vitro.

Report (4results)

- 2017   Annual Research Report   Final Research Report   (  PDF   )
- 2016   Research-status Report
- 2015   Research-status Report

Research Products (8results)

All	2018	2017
All	Journal Article	Presentation   Book

- [Journal Article] Identification of multipotent stem cells in human brain tissue following stroke 2017 ▾
- [Journal Article] Novel Regenerative Therapies Based on Regionally Induced Multipotent Stem Cells in Post-Stroke Brains: Their Origin, Characterization, and Perspective 2017 ▾

[Presentation] ヒト脳傷害誘導性多能性幹細胞の性状とその特徴 2018 ▼

[Presentation] Ischemia-induced multipotent stem cells in human cerebral infarction 2018 ▼

[Presentation] ヒト脳梗塞巣における脳傷害誘導性幹細胞の確立 2017 ▼

[Presentation] ヒト脳梗塞組織における多能性幹細胞の同定 2017 ▼

[Book] 血行再建療法時代の脳保護療法と再生医療：虚血誘導性多能性幹細胞とその臨床応用への展開 2018 ▼

[Book] 神経筋細胞による研究：傷害誘導性神経・多能性幹細胞 2018 ▼

URL : <https://kaken.nii.ac.jp/grant/KAKENHI-PROJECT-15K06723/>

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# ヒト由来脳傷害/虚血誘導性神経幹細胞による細胞移植療法の開発

Research Project

All▼

## Project/Area Number

18K07380

## Research Category

Grant-in-Aid for Scientific Research (C)

## Allocation Type

Multi-year Fund

## Section

一般

## Review Section

Basic Section 51030:Pathophysiologic neuroscience-related

## Research Institution

Hyogo College of Medicine

## Principal Investigator

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## Project Period (FY)

## Project Status

Granted(Fiscal Year 2018)

## Budget Amount \*help

**¥4,290,000 (Direct Cost : ¥3,300,000、 Indirect Cost : ¥990,000)**  
Fiscal Year 2020 : ¥1,430,000 (Direct Cost : ¥1,100,000、 Indirect Cost : ¥330,000)  
Fiscal Year 2019 : ¥1,430,000 (Direct Cost : ¥1,100,000、 Indirect Cost : ¥330,000)  
Fiscal Year 2018 : ¥1,430,000 (Direct Cost : ¥1,100,000、 Indirect Cost : ¥330,000)

## Keywords

脳梗塞 / 幹細胞 / 移植 / 神経再生

URL : 

https://kaken.nii.ac.jp/grant/KAKENHI-PROJECT-18K07380/

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