哺乳動物のストレス応答MAPキナーゼ経路における足場タンパク質の解析

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2006 Fiscal Year Final Research Report Summary

Functional analysis of scaffold proteins for mammalian stress-responsive MAP kinase signaling pathways

Research Project

Project/Area Number	14086205
Research Category	Grant-in-Aid for Scientific Research on Priority Areas
Allocation Type	Single-year Grants
Review Section	Biological Sciences
Research Institution	Kanazawa University
Principal Investigator	**YOSHIOKA Katsuji** Kanazawa University, Cancer Research Institute, Professor (60200937)
Co-Investigator(Kenkyū-buntansha)	ITO Michihiko Kitasato University, School of Science, Associate Professor (90240994)
Project Period (FY)	**2002 – 2006**
Keywords	cadherin / cerebellum / deveropment and differentiation / genetically engineered mice / JNK / MAP kinase / scaffold protein / signal transduction

Research Abstract

Scaffold proteins of the mammalian MAP kinase (MAPK) cascades are considered having critical roles in spatio-temporal regulation of MAPK pathways by organizing their signaling components into functional modules. We are particularly interested in the functions of these scaffold proteins, mainly c-Jun NH_2-terminal kinase (JNK)/stress-activated protein kinase-associated protein 1 (JSAP1); a scaffold protein that participates in JNK MAPK cascades, both in vitro and in vivo. Our findings are summarized as follows :
1) We first investigated the JSAP1-null ES cells. We found that the cardiomyogenesis and neurogenesis process in JSAP1-null mutants were seriously impaired, which strongly indicated that JSAP1 plays an important role in cardiomyocyte and neural development (JBC, 2002 ; BBRC, 2005).
2) We also demonstrated that JSAP1 regulates cell movement in cooperation with the focal adhesion kinase (Oncogene, 2002 ; JBC 2005).
3) We further showed that JSAP1 scaffold regulates cell-cell interact ···▾ More

Research Products (40 results)

All 2007 2006 2005 2004 2003 2002

All Journal Article

[Journal Article] Regulation of N-cadherin-based cell-cell interaction by JSAP1 scaffold in PC12h cells. 2007

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[Journal Article] 2-methoxyestradiol, an endogenous mammalian metabolite. radiosensitizes colon carcinoma cells through c-Jun NH2-tenninal kinase activation. 2006

[Journal Article] c-jun N-terminal kinase hyperphosphorylates R406W tau at the PHF-1 site during mitosis. 2006

[Journal Article] Expression and distribution of JNK/SAPK-associated scaffold protein JSAP1 in developing and adult mouse brain. 2006

[Journal Article] Selective expression of the scaffold protein JSAP1 in spermatogonia and spermatocytes. 2006

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[Journal Article] Identification and characterization of mouse PSF1-binding protein, SLD5. 2006

[Journal Article] Convergence of cell cycle regulation and growth factor signals onGRASP65. 2005

[Journal Article] JSAP1/JIP3 cooperates with FAK to regulate c-Jun N-terminal kinase and cell migration. 2005

[Journal Article] Impairment of cardiomyogenesis in embryonic stem cells lacking scaffold protein JSAP1. 2005

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[Journal Article] Critical roles of c-Jun signaling in regulation of NFAT family and RANKL-regulated osteoclast differentiation. 2004

[Journal Article] Scaffold protein JSAP1 is transported to growth cones of neuritis independent of JNK signaling pathways in PC12h cells. 2004

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[Journal Article] JNK promotes Bax translocation to mitochondria through phosphorylation of 14-3-3 proteins. 2004

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[Journal Article] Phosphorylation-dependent scaffolding role of JSAP1/JIP3 in the ASK1-JNK signaling pathway : A new mode of regulation of the MAP kinase cascade. 2002

[Journal Article] Aberrant tau phosphorylation by glycogen synthase kinase-3β and JNK3 induces oligomeric tau fibrils in COS-7 cells. 2002

[Journal Article] A scaffold protein in the c-Jun N-terminal kinase signaling pathway is associated with focal adhesion kinase and tyrosine-phosphorylated. 2002

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