

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

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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

<b>Project/Area Number</b>	14086205
<b>Research Category</b>	Grant-in-Aid for Scientific Research on Priority Areas
<b>Allocation Type</b>	Single-year Grants
<b>Review Section</b>	Biological Sciences
<b>Research Institution</b>	Kanazawa University
<b>Principal Investigator</b>	<b>YOSHIOKA Katsuji</b> Kanazawa University, Cancer Research Institute, Professor (60200937)
<b>Co-Investigator(Kenkyū-buntansha)</b>	ITO Michihiko Kitasato University, School of Science, Associate Professor (90240994)
<b>Project Period (FY)</b>	<b>2002 – 2006</b>
<b>Keywords</b>	cadherin / cerebellum / development and differentiation / genetically engineered mice / JNK / MAP kinase / scaffold protein / signal transduction
<b>Research Abstract</b>	<p>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<sub>2</sub>-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 :</p> <p>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).</p> <p>2) We also demonstrated that JSAP1 regulates cell movement in cooperation with the focal adhesion kinase (Oncogene, 2002 ; JBC 2005).</p> <p>3) We further showed that JSAP1 scaffold regulates cell-cell interact ... More</p>

## 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 NH <sub>2</sub> -terminal 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	▼
[Journal Article] 2-methoxyestradiol, an endogenous mammalian metabolite, radiosensitizes colon carcinoma cells through c-Jun NH <sub>2</sub> -terminal kinase activation.	2006	▼
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[Journal Article] Selective expression of the scaffold protein JSAP1 in spermatogonia and spermatocytes.	2006	▼
[Journal Article] Identification and characterization of mouse PSF1-binding protein, SLD5.	2006	▼
[Journal Article] Convergence of cell cycle regulation and growth factor signals on GRASP65.	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] Activation mechanism of c-Jun amino-terminal kinase in the course of neural differentiation of P19 embryonic carcinoma cells.	2004 ▾
[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 ▾
[Journal Article] Membrane type 1 matrix metalloproteinase regulates collagen-dependent mitogen-activated protein/extracellular signal-regulated kinase activation and cell migration.	2004 ▾
[Journal Article] JNK promotes Bax translocation to mitochondria through phosphorylation of 14-3-3 proteins.	2004 ▾
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[Journal Article] Scaffold proteins of the cJun-NH2-terminal kinase (JNK) signaling pathways in neuronal cells.	2003 ▾
[Journal Article] In vitro development of mouse embryonic stem cells lacking JNK/stress-activated protein kinase-associated protein (JSAP1) scaffold protein revealed its requirement during early embryonic neurogenesis.	2003 ▾
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[Journal Article] In vitro development of mouse embryonic stem cells lacking JNK/stress-activated protein kinase-associated protein (JSAP1) scaffold protein revealed its requirement during early embryonic neurogenesis.	2003 ▾
[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-3 $\beta$ 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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