

Experimental research for the availability of gene therapy using ORP150, a novel molecular chaperone

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2001 Fiscal Year Final Research Report Summary

Experimental research for the availability of gene therapy using ORP150, a novel molecular chaperone

Research Project

Project/Area Number

12671522

Research Category

Grant-in-Aid for Scientific Research (C)

Allocation Type

Single-year Grants

Section

一般

Research Field

Urology

Research Institution

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Project Period (FY)

2000 - 2001

Keywords

Stress response / Unfolded protein response / angiogenesis / Molecular chaperone / Gene therapy / Adenovirus vecto / Tumor growth

Research Abstract

Newly synthesized protein and immature proteins are easily aggregated because they expose hydrophobic regions. Many stress conditions, such as heat shock or hypoxia, slow down their folding process and cause accumulation of unfolded/misfolded proteins in the cell. Molecular chaperones, including heat shock proteins (HSPs), are induced in these conditions, bind to unfolded/misfolded proteins, and help them to be folded or refolded properly. The protective role of molecular chaperones for the cells under stress has been reported.

Expression of angiogenic factors such as vascular endothelial growth factor (VEGF) under conditions of cell stress involves both transcriptional and translational events, as

well as an important role for inducible endoplasmicreticulum (ER) chaperones. Coexpression of VEGF and 150-kDa oxygen-regulated protein (ORP), a novel ER chaperone, in human glioblastomas suggested a link between angiogenesis and ORP150. C6 gliomas stably transfected with ORP150 antisense ... More

Research Products (16 results)

All Other
All Publications

- [Publications] Tamatani他: "ORP 150 protects against hypoxia/ischemia-induced neuronal death"Nature Med.. 7. 317-323 (2001) ▼
- [Publications] Tsukamoto他: "Expression of a novel RNA splicing factor, RA301/Tra2beta, in vascular lesions and its role in smooth muscle cell proliferation"Am. J. Pathol.. 158. 1685-1694 (2001) ▼
- [Publications] Ozawa他: "Regulation of tumor angiogenesis by ORP150, an inducible endoplasmic reticulum chaperone"Can. Res.. 61. 4206-4213 (2001) ▼
- [Publications] Ozawa他: "Expression of ORP150 (150 kDa Oxygen Regulated Protein) accelerates wound healing by modulating intracellular VEGF transport"J. Clin. Invest.. 108. 41-50 (2001) ▼
- [Publications] Kitao他: "Expression of 150 kDa Oxygen Regulated Protein (ORP150), a Molecular Chaperone in the Endoplasmic Reticulum, Rescues Hippocampal Neurons from Glutamate Toxicity"J. Clin. Invest.. 108. 291-299 (2001) ▼
- [Publications] Miyagi他: "Antitumor Effect of Reduction of 150-kDa Oxygen-Regulated Protein Expression in Human Prostate Cancer Cells"Mol. Urol.. 5. 79-80 (2001) ▼
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- [Publications] amatani M, Matsuyama T, Yamaguchi A, Mitsuda N, Tsukamoto Y, Taniguchi T, Che YH, Ozawa K, Hori O, Nishimura H, Yamashita A, Okabe M, Yanagi H, Stern DM, Ogawa S, and Tohyama M.: "ORP150 protects against hypoxia/ischemia-induced neuronal death."Nature Med.. 7. 317-323 (2001) ▼
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- [Publications] Vorp DA, Lee PC, Wang Dh, Makaroun MS, Nemoto EM, Ogawa S, and Webster MW.: "Association of intraluminal thrombus in abdominal aortic aneurysm with local hypoxia and wall weakening."J Vasc Surg. 34. 291-299 (2001) ▼
- [Publications] Kitao Y., Ozawa K., Miyazaki M., Kobayashi T., Yanagi H., Okabe M., Ikawa M., Yamashita T., Tohyama M., Stern D., Hori O., and Ogawa S.: "Expression of 150 kDa Oxygen Regulated Protein (ORP150), a Molecular Chaperone in the Endoplasmic Reticulum, Rescues Hippocampal Neurons from Glutamate Toxicity."J. Clin. Invest.. 108. 1439-1450 (2001) ▼
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