

12/15-リポキシゲナーゼアイソザイムの組織特異的 発現と細胞増殖機構

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1999 Fiscal Year Final Research Report Summary

Mechanisms for tissue specific expression and cell growth of 12/15-lipoxygenase

Research Project

Project/Area Number

10670134

Research Category

Grant-in-Aid for Scientific Research (C)

Allocation Type

Single-year Grants

Section

一般

Research Field

Pathological medical chemistry

Research Institution

Kanazawa University

Principal Investigator

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Project Period (FY)

1998 - 1999

Keywords

12-Lipoxygenase / Atherosclerosis / Low density lipoprotein (LDL) / Oxidized LDL / Scavenger receptor / Macrophage

Research Abstract

Lipoxygenase (LOX) incorporates a molecular oxygen into a specific carbon atom of unsaturated fatty acids. There are 5-, 8-, 12- and 15-LOXs in mammalian tissues according to the oxygenation site of arachidonic acid. Based upon the primary structures deduced from their cDNAs and enzymological properties, they are principally classified into 5-LOX and 12/15-LOX subfamilies. The 5-LOX catalyzes the first step in the generation of leukotrienes which have potent biological activities in the immediate hypersensitivity and allergy. There are number of isoforms of 12/15-LOXs : leukocyte, platelet and epidermis. Although the 12/15-LOXs have been shown to play roles in several systems such as atherosclerosis and neurotransmission, their pathophysiological functions are still subjects of investigation and discussion. There are a body of circumstantial evidences for a role of LOX in oxidative modification of low density lipoprotein (LDL). The aim of this study was to investigate the role of intrac ... More

Research Products (10 results)

All Other
All Publications

[Publications] T. Sakashita, et al.: "Essential involvement of 12-lipoxygenase in regiospecific and stereospecific oxidation of low density lipoprotein by macrophages" *Eur. J. Biochem.* 265. 825-831 (1999) ▼

[Publications] Y. Ozaki, et al.: "An anti-platelet agent, OPC-29030, inhibits translocation of 12-lipoxygenase and 12-hydroxyeicosatetraenoic acid production in human platelets" *Br. J. Pharmacol.* 128. 1699-1704 (1999) ▼

[Publications] Y. Takahashi, et al.: "12-Lipoxygenase overexpression in rodent NG108-15 cells enhances membrane excitability by inhibiting M-type K⁺ channels" *J. Physiol. (London)*. 521. 567-574 (1999) ▼

[Publications] Y. Takahashi, et al.: "Activation of matrix metalloproteinase-2 in human breast cancer cells overexpressing cyclooxygenase-1 or -2" *FEBS Lett.* 460. 145-148 (1999) ▼

[Publications] T. Kinoshita, et al.: "Growth stimulation and induction of epidermal growth factor receptor by overexpression of cyclooxygenases 1 and 2 in human colon carcinoma cells" *Biochem. Biophys. Acta.* 1438. 120-130 (1999) ▼

[Publications] T. Sakashita, et al.: "Essential involvement of 12-lipoxygenase in regiospecific and stereospecific oxidation of flow density lipoprotein by macrophages" *Eur. J. Biochem.* 265. 825-831 (1999) ▼

[Publications] Y. Ozeki, et al.: "An anti-platelet agent, OPC-29030, inhibits translocation of 12-lipoxygenase and 12-hydroxyeicosatetraenoic acid production in human platelets" *Br. J. Pharmacol.* 128. 1699-1704 (1999) ▼

[Publications] Y. Takahashi, et al.: "12-Lipoxygenase overexpression in rodent NG108-15 cells enhances membrane excitability by inhibiting M-type K⁺ channels" *J. Physiol. (London)*. 521. 567-574 (1999) ▼

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