

免疫不全を伴う補体産生異常の遺伝子機構

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1991 Fiscal Year Final Research Report Summary

Genetic mechanisms of the complement deficiency associated with immune abnormalities

Research Project

Project/Area Number

02454186

Research Category

Grant-in-Aid for General Scientific Research (B)

Allocation Type

Single-year Grants

Research Field

Immunology

Research Institution

Kanazawa University

Principal Investigator

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Project Period (FY)

1990 - 1991

Keywords

Complement deficiency / Molecular cloning / Mouse C4 / B2 sequence / RNA splicing / retrotransposon / レトロトランスポゾン

Research Abstract

1) In order to gain insight into the genetic mechanism of human C3 deficiency, mRNA and DNA extracted from peripheral blood were analyzed by Northern and Southern blotting. Furthermore, C3 gene of 16kb long was isolated from the patient DNA and subjected to extensive structural and functional analyzes. The combined results showed that the C3 deficient state of this patient is caused by genetic irregularities at the posttranscriptional and pretranslational level.

2) Mouse strains of H-2_k haplotype are invariably low C4 producers. Analysis of C4 mRNA from these mouse strains revealed the presence of abnormal 200bp insert consisting of B2 repetitive sequence and part of intronic sequence. Subsequent structural analyses of C4 genes isolated from low C4 producers showed the retrotransposon-like insertion of B2 sequent in the 13th intron of the gene, which probably accounts for the aberrant RNA splicing of the C4 transcript.

Research Products (12 results)

All Other

All Publications (12 results)

- [Publications] 中山 耕造他: "Posttranscriptional regulation of complement C4 gene in the low C4 producing strain of mouse" Immunogenetics. 31. 361-367 (1990) ▼
- [Publications] Sa-nga Pattanaki tsakul 他: "Three extra copies of C4-Related genes in H-2^k mice are C4-Slp hybrid genes generated by multiple recombinational events" Immunogenetics. 32. 431-439 (1990) ▼
- [Publications] 黄 志明他: "Differential expression of the five C4-related genes of H-2^k mice" Immunogenetics. 33. 361-366 (1991) ▼
- [Publications] 黄 志明他: "Evidence for the common evolutionary origin of the C4/Slp locus in the two wild mouse-derived haplotypes, W7 and W19" Immunogenetics. 35. (1992) ▼
- [Publications] Sa-nga Pattanaki tsakul 他: "Aberrant splicing caused by the insertion of the B2 sequence into an intron of the complement C4 gene is the basis for low C4 production in H-2^k mouse" Journal of Biological Chemistry. 267. (1992) ▼
- [Publications] 野中 勝他: "The complete cDNA sequence of the third component of complement(C3)of lamprey: implication of thiolester containing proteins" Journal of Immunology. 148. (1992) ▼
- [Publications] K. Nakayama et al.: "Posttranscriptional regulation of the complement C4 gene in the low C4-producing strain of mouse." Immunogenetics. 31. 361-367 (1990) ▼
- [Publications] S. Pattanakitsakul et al.: "Three extra copies of C4-related genes in H-2^k mice are C4/Slp hybrid genes generated by multiple recombinational events." Immunogenetics. 32. 431-439 (1990) ▼
- [Publications] Z. M. Huang et al.: "Differential expression of the five C4-related genes of H-2^k mice." Immunogenetics. 33. 361-366 (1991) ▼
- [Publications] Z. M. Huang et al.: "Evidence for the common evolutionary origin of the C4/Slp Locus in the two wild mouse-derived haplotypes, W7 and W19." Immunogenetics. 35. (1992) ▼
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- [Publications] M. Nonaka et al.: "The complete cDNA sequence of the third complement (c3) of lamprey : implication of thiol ester containing Proteins." Journal of Immunology. 148. (1992) ▼

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