

# Quantitative analysis of Epstein-Barr virus immediate-early proteins and evaluation of its clinical role especially in nasopharyngeal

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# 1997 Fiscal Year Final Research Report Summary

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## Quantitative analysis of Epstein-Barr virus immediate-early proteins and evaluation of its clinical role especially in nasopharyngeal

Research Project

### Project/Area Number

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08457450

### Research Category

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Grant-in-Aid for Scientific Research (B)

### Allocation Type

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Single-year Grants

### Section

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一般

### Research Field

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Otorhinolaryngology

### Research Institution

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Kanazawa University

### Principal Investigator

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### Project Period (FY)

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1996 – 1997

### Keywords

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## Research Abstract

Nasopharyngeal carcinoma (NPC), an epithelial tumor which is characterized by marked geographic and population differences in incidence, is found to be associated with Epstein-Barr virus (EBV) by serologic evidence, and the relationship was confirmed by the detection of EBVDNA and EB-encoded RNAs in NPC cells. Elevation of IgG and IgA antibodies against EBV viral capsid antigen and early antigen are often found in NPC patients. Serologic tests of these antibodies have been recognized as tumor markers for NPC. EBV persists in a latent form in both epithelial cells and B lymphocytes. A variety of stimulation may activate a virus. The Z protein and the R protein, which are immediate early proteins of the EBV lytic cycle, control the switch of the virus from a latent to a lytic cycle by transactivating several early promoters. But a lytic cycle is sometimes incomplete in tumor. Z protein and R protein are expressed earlier than EA or VCA, so anti-Z,-R antibody titers will be more sensitive markers for NPC. Plasmid presenting BZLF1 or BRLF1 gene were produced, and Z protein and R protein were harvested. Sera from patients with NPC, infectious mononucleosis (IM), non-Hodgkin's lymphoma (NHL), head and neck carcinoma and healthy controls are examined for its reactivity against Z and R protein by Western blotting and ELISA. NPC patients before treatment all indicated high anti-Z,-R antibody titers, whereas in three NPC patients without recurrence, only one (33%) was positive. IM patients all indicated no anti-Z,-R antibodies. Several patients of other diseases have anti-Z,-R antibodies, but their titers were low. In comparison with anti-VCA antibodies, anti-Z,-R antibodies were specific to NPC. A NPC patients whose anti-VCA antibodies were negative indicated high anti -Z,-R antibody titers, and a NHL patient who shows elevation of anti-VCA antibody titer was negative in anti-Z,-R antibodies. These findings suggest that the anti-Z,-R antibody titers are useful markers for NPC.

## Research Products (18 results)

	All	Other
	<b>All Publications (18 results)</b>	
[Publications] 竹下 元 他: "上咽頭早期癌の診断と治療" Johns. 13(4). 619-624 (1997)		▼
[Publications] 脇坂 尚宏: "上咽頭癌におけるEpstein-Barrウイルス関連因子および血管新生因子発現に関する研究" 金沢大学十全医学会雑誌. 106(1). 105-115 (1997)		▼
[Publications] 古川 仍 他: "上咽頭癌の臨床と遺伝子治療の可能性" Johns. 13(9). 1325-1328 (1997)		▼
[Publications] 古川 仍: "上咽頭癌の画像診断,CT,MRI所見" 日・耳・鼻・会報. 100(12). 1468-1471 (1997)		▼
[Publications] 三輪 泰子: "Epstein-Barrウイルス前早期抗原定量法の確立と臨床的意義" 金沢大学十全医学会雑誌. 107(in press). (1998)		▼
[Publications] 古川 仍 他: "耳鼻咽喉科・頭頸部外科" 神崎仁編集,鈴木肇発行,南山堂, 471 (1996)		▼
[Publications] 竹下 元 他: "耳鼻咽喉科・頭頸部外科クリニカルトレンド" 野村恭也,本庄巖,平出文久編,平田直発行,中山書店, 296 (1998)		▼
[Publications] M.Furukawa: "XVI World Congress of Otorhinolaryngology,Head and Neck Surgery, 「SYDNEY'97」" G.McCafferty,W.Coman,R.Carroll,ed.Monduzzi Editore, 1783 (1997)		▼
[Publications] M.Furukawa: "Gann Monograph on Cancer Research A5 Epstein-Barr Virus and Human Cancer." T.Osato,K.Takada,M.Tokunaga,ed.Japan Scientific Societies Press,Karger, 190 (1998)		▼
[Publications] S.Murono: "Detection of Epstein-Barr virus gene products, p53 protein and bcl-2 protein in nasopharyngeal carcinoma." J.Juzen Med Soc.105 (2). 187-202 (1996)		▼
[Publications] M.Furukawa, I.Nagayama, S.Murono, H.Takeshita, T.Nishimura, T.Yoshizaki: "Interaction Between Epstein-Barr virus (EBV) gene expression and antibodies to EBV in nasopharyngeal carcinoma." Jap.J.of Clin.Pathol.44 (9). 832-833 (1996)		▼
[Publications] M.Furukawa, S.Murono, S.Nakagawa, H.Takeshita, T.Yoshizaki: "Detection of Epstein-Barr virus genomes in nasopharyngeal carcinoma" Japanese J.Of Clinical Medicine. 55 (2). 76-79 (1997)		▼
[Publications] "EBV-infected tonsillar B-cells Contribute to the elevated levels of plasma IgE atopic subjects" XVI World Congress of Otorhinolaryngology Head and Neck Surgery 「SYDNEY'97」. 1227-1230 (1997)		▼

[Publications] N.Wakisaka: "Expression of Epstein-Barr virus related factors and angiogenic factors in nasopharyngeal carcinomas" J.Juzen Med Soc.106 (1). 105-115 (1997) ▼

[Publications] H.Takeshita, M.Furukawa: "Diagnosis and treatment for early nasopharyngeal carcinoma" JOHNS. 13 (4). 619-624 (1997) ▼

[Publications] M.Furukawa, S.Murono, H.Takeshita, T.Yoshizaki: "Detection of Epstein-Barr viral genes products, p53 and bcl-2 protein in non-endemic nasopharyngeal carcinoma" Gann Monograph on Cancer Research 45. Epstein-Barr virus and human cancer, T.Osato, K.Takada, M.Tokunaga ed.109-116 (1998) ▼

[Publications] M.Furukawa, H.Takeshita, H.Miwa, T.Nishimura, T.Miwa: "Clinical studies of nasopharyngeal carcinoma and the possibility for gene therapy." JOHNS. 13 (9). 1325-1328 (1997) ▼

[Publications] H.Miwa: "Quantitative analysis of Epstein-Barr virus immediate-early protein and evaluation of its clinical role especially in nasopharyngeal carcinoma." J.Juzen Med Soc.107. (1998) ▼

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