

# 睪丸腫瘍における胎盤様アルカリフォスファターゼ (PCAP-like)の研究

著者	越田 潔
著者別表示	Koshida Kiyoshi
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# 1991 Fiscal Year Final Research Report Summary

## Placental-like alkaline phosphatase in testicular tumor

Research Project

### Project/Area Number

01570883

### Research Category

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

### Allocation Type

Single-year Grants

### Research Field

Urology

### Research Institution

Kanazawa University

### Principal Investigator

**KOSHIDA Kiyoshi** Kanazawa University Urology Lecturer, 医学部附属病院, 講師 (70186667)

### Co-Investigator(Kenkyū-buntansha)

HIRANO Kazuyuki Gifu pharmaceutical University Professor, 薬剂学, 教授 (90057365)

UCHIBAYASHI Tadao Kanazawa University Urology Lecturer, 医学部附属病院, 講師 (90151894)

HISAZUMI Haruo Kanazawa University Urology Professor, 医学部, 教授 (70019537)

### Project Period (FY)

1989 - 1991

### Keywords

Testicular tumor / placental-like / Tumor marker / Immunolocalization

### Research Abstract

The role of PLAP-like as a tumor marker was evaluated in 62 cases of testicular germ cell tumors. Positive rates in different histology as well as stages were as follows ; seminoma, stage I : 42%, stages II-III, 90%, nonseminoma, stage I : 17%, stages II-III : 44%. Serum PLAP-like values in stages II-III were significantly higher than those in stage I. Tissue PLAP-like concentrations in 32 seminomas and 15 nonseminomas were also investigated. Significant differences in PLAP-like concentrations were disclosed between seminoma tissues and nonseminoma tissues as well as between the cases with elevated serum levels and the cases with normal serum levels. Serum values in stage I turned to normal within a week after orchietomy. Half-life in the circulation was calculated at 2 days. Four out of 93 cases(4.3%), 17 of 594 samples(2.9%)in a follow-up study were regarded as false positive. Thus PLAP-like appears to be a useful marker for seminoma.

To investigate a potential use of an anti-PLAP monoclonal antibody for detecting tumors, HPMS-1 MAb labeled with I-125 was injected to athymic mice bearing tumors producing PLAP. Although accumulation rate(%dose/g tissue)was gradually decreased in the tumor, clearance of the MAb in other organs were more rapidly. Thereby an increase of tumor/organ ratio with time was observed, resulted in a clear tumor imaging after 9 days of injection. PLAP concentrations in the transplanted tumors were lower than those of primary seminomas or metastatic lymphnodes of seminoma. Therefore a potential use of the anti-PLAP MAb(HPMS-1)for detecting metastatic lesion of seminoma could be expected.

## Research Products (9 results)

All Other

All Publications (9 results)

- [Publications] Y.Itayashi: "Improved monoclonal immunocatalytic allays (MICAs) for human alkaline phosphatase isozymes" Jpn.J.Clin Chem. 120. 125-132 (1991) ▼
- [Publications] K.Koshida: "Characterization of seminoma-derived placental-like alkaline phosphatase" Urologia Internationalis. 47(Suppl). 96-99 (1991) ▼
- [Publications] K.Koshida: "Analysis of serum placental alkaline phosphatase activity in testicular cancer and cigarette smokers" Urological Research. 18. 169-173 (1990) ▼
- [Publications] E.Brchmer-Andersson: "Isoenzyme of alkaline phosphatase in seminomas An immunohistochemical and biochemical study" APMIS. 98. 977-982 (1990) ▼
- [Publications] 西野 昭夫: "精巣腫瘍患者における血清および組織内胎盤性アルカリフォスファターゼ値に関する検討" 日本泌尿器科学会雑誌. 81. 1506-1512 (1990) ▼
- [Publications] K.Koshida: "The role of alkaline phosphatase isoenzymes as tumor markers for testicular germ cell tumors." J.Urology. 146. 57-60 (1991) ▼
- [Publications] K. Koshida, A. Nishimoto, H. Yamamoto, T. Uchibayashi, K. Naito, H. Hisazumi, K. Hirano, Y. Hayashi, B. Wahren, L. Andersson: "The role of alkaline phosphatase isoenzymes as tumor markers for testicular germ cell tumors" J. Urology. 146. 57-60 (1991) ▼
- [Publications] K. Koshida, T. Uchibayashi, H. Hisazumi: "Characterization of seminoma-derived placental-like alkaline phosphatase" Urologia Internationalis. 47(suppl 1). 96-99 (1991) ▼
- [Publications] A Nishino, K. Koshida, H. Yamamoto, T. Uchibayashi, K. Naito, H. Hisazumi: "Serum and tissue levels of placental alkaline phosphatase in patients with testicular tumor" Jap. J Urol. 81. 1506-1512 (1990) ▼

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