

		<b>BIOMEDICAL RESEARCH ON TRACE ELEMENTS</b>	
Japan Society for Biomedical Research on Trace Elements			
<a href="#">Available Issues</a>   <a href="#">Japanese</a>			
Author:	<input type="text"/>	<a href="#">ADVANCED</a>	Volume Page
Keyword:	<input type="text"/>	<input type="button" value="Search"/>	<input type="text"/> <input type="text"/> <input type="button" value="Go"/>



[TOP](#) > [Available Issues](#) > [Table of Contents](#) > [Abstract](#)

ONLINE ISSN : 1880-1404

PRINT ISSN : 0916-717X

## Biomedical Research on Trace Elements

Vol. 15 (2004) , No. 4 317-325

[\[Image PDF \(839K\)\]](#) [\[References\]](#)

### Cancer Immunity and Trace Elements

[Yasuaki Arakawa](#)<sup>1)</sup>

1) Department of Hygiene & Preventive Medicine, Faculty of Health Sciences, The University of Shizuoka

#### Abstract:

In this article, the connection modes between cancer immunity and trace elements are reviewed, with a focus on the three wide fields of the carcinogenesis, the tumor progress and the tumor suppression, as an immunoenvironment surrounding the tumor, on the basis of recent data. The table of contents is as follows : Introduction, 1. The Carcinogenesis and Trace Elements, 2. The Progress of Tumor and Trace Elements, 3. The Suppression of Tumor and Trace Elements, Conclusion.

To sum up this article, there are several aspects in the connection mode of trace elements with cancer immunity. In the field of carcinogenesis, there are two cases as follows; 1) the induction of the facility of carcinogenesis by the disorder in the general intracellular metabolism, the disorder in the activation modulating systems of enzyme, hormone, cytokine etc which are induced by the deficiency or the excessive exposure of trace elements and the disorder in the immune response. 2) under the conditions rising the carcinogenic sensibility, the induction of carcinogenesis by cancer-causing substances (carcinogenic trace elements etc)-induced several DNA damage and the functional injury of a gene associated with proliferation/differentiation. In the field of the tumor progress, there are several cases as follows; 3) with the progress of tumor, a break-down of essential roles of trace elements in an immunity system. Conversely, 4) the promotion of tumor progress by this break-down. Further, 5) an increase in the demand of certain trace elements needed for the proliferation of cancerous cells or 6) an increase in the level of certain trace elements acting suppressively on the proliferation of cancerous cells. In the field of the tumor suppression, most of cases are 7) the action as an anticancer agent administered from the outside of a body, except for the suppression of proliferation of tumor cells by zinc-deficiency and selenium-deficiency and by accumulation of aluminum at the tumor site.

**Key words:** [cancer immunity](#), [trace elements](#), [carcinogenesis](#), [tumor progress](#), [tumor suppression](#), [anticancer agent](#)

[\[Image PDF \(839K\)\]](#) [\[References\]](#)

Download Meta of Article[\[Help\]](#)

[RIS](#)

[BibTeX](#)

To cite this article:

Yasuaki Arakawa, "Cancer Immunity and Trace Elements", Biomedical Research on Trace Elements, Vol. **15**, pp.317-325 (2004) .

---

JOI JST.JSTAGE/brte/15.317

Copyright (c) 2005 by Japan Society for Biomedical Research on Trace Elements

---



---

[Japan Science and Technology Information Aggregator, Electronic](#)

