Current Trends in Histocompatibility

VOLUME 2

BIOLOGICAL AND CLINICAL CONCEPTS

Edited by
Ralph A. Reisfeld
and
Soldano Ferrone

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Preface

Information about histocompatibility antigens is expanding so rapidly that it is difficult to remain abreast of all advances. In these volumes, we have made an effort to bring together the most current work on topics that have generated most of the recent advances and discussions. We have asked each author to present and interpret his most current work, and we have judiciously refrained from imposing our own prejudices and viewpoints. Although there is obvious overlap in some individual topics, we have encouraged this to provide the reader with as many different and sometimes opposing viewpoints as possible. This approach will, we hope, give a broad overview of current ideas in the field.

We wish to thank all contributors for their timely and exciting manuscripts, and we sincerely hope that the reader will benefit from these volumes.

R.A. Reisfeld
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Role of Histocompatibility Antigens in Cell–Cell Interaction

1

Histocompatibility Antigens and the T-Cell Repertoire

Harald von Boehmer

1. Introduction

Considering the numerous reviews dealing with the major histocompatibility complex (MHC) and its influence on T cells, it is not tempting to write yet another article on the subject. The experimental data that I am going to summarize are in principle compatible with several theoretical models. I therefore shall not attempt to discriminate among them. Our own view has been stated before (von Boehmer *et al.*, 1978b).

2. *H-2* Restriction

2.1. *H-2* Restriction of T Cells

Cell-surface structures encoded by genes in the MHC influence the T-cell receptor repertoire: the interaction of T cells with other cells is restricted by H-2 antigens (Katz *et al.*, 1973a; Rosenthal and Shevach, 1973; Zinkernagel and Doherty, 1974). The cell interactions require an apparent dual specificity of T cells: one for antigens (x) and one for H-2 antigens (s).

In a normal, nonchimeric animal, the repertoire of H-2 restriction is mainly directed against self H-2: T-cells from strain a depleted by various methods of alloreactivity to strain b can respond to antigen x on cells a

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