Book Reviews
I.P. Witz, M.G. Hanna, Jr. (eds)
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In situ Expression of Tumor Immunity
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The editors rightly state in their preface that the hypotheses and dogmas on host-tumor relationship, which prevailed in the 1960s and 1970s have been refuted. It is quite clear that if an immune response against a solid tumor is evoked, its expression must be investigated in situ, i.e. in the tumor itself. Specific antitumor antibodies or effector cells must gain access to the tumor to be able to exert an effect. To investigate the occurrence and function of immune components in solid tumors, new technical approaches were necessary. These are thoroughly discussed and critically evaluated in the first contribution by Russel, Witz and Herberman. As in the whole volume, not only the results achieved, but also the problems to be solved in the future, are clearly presented.
In the following 14 contributions, all aspects of the expression of local immunity in solid animal and human neoplasms are expertly discussed in a most lucid and stimulating way. The results achieved hitherto do not allow definite answers. They do show, however, that this approach is promising and fruitful. In solid tumors there are specific antitumor antibodies, and specifically committed effector lymphocytes, cytotoxic and suppressor cells, nonspecific killer cells, macrophages and plasma cells. The cellular infiltrate is generally greater in early differentiated primary tumors. Antibodies and immune lymphocytes affect the tumor cells in two ways: on the one hand they can be lysed or prepared for the attack by macrophages, on the other hand their antigenic properties can be changed or lost, with increased malignancy and loss of differentiation as a consequence. The local immune response can thus lead to beneficial or deleterious effects. There is much to be learned before full understanding of these complex processes is achieved and possibilities for their manipulation to the benefit of the tumor-bearing host emerge. The present volume is a most valuable guide for future research in this important field. Paul Kallós, Helsingborg

Sponse, especially helper and suppressor activity and cytotoxicity. Fridman et al. show that FeG receptor bearing T lymphocytes (FeγR+) act mainly as nonspecific suppressors of antibody production. Allo-antigen-activated FeγR+ T cells (ACT) release their receptors in vitro. The soluble receptor is able to suppress humoral responses. FeγR is la-associated. The authors produced hybrido-mas fusing ATC and HAT-sensitive lymphoma cells. This cell line is FeγR+. They present a hypothetical model of the regulation of antibody production by FeγR.

Subpopulations of human T lymphocytes: laboratory and clinical studies’ is the subject of an excellent review by Gupta and Good. They stress that subpopulations of T lymphocytes can exhibit Fc receptors for any of the five isotypes of Ig. Such receptors are also present on B lymphocytes and macrophages. In antigen or pokeweed mitogen (PWM) driven B lymphocyte cultures FeµR+ T cells exert helper activity for the differentiation of B cells into Ig-secreting
plasma cells. FcγR+ cells are suppressors. In allergic patients, e.g. asthmatics, with high plasma IgE levels, increased numbers of FceR+ cells can be found, these participate supposedly in the regulation of the IgE response. About 50% of FcγR+ lymphocytes possess histamine (H2) receptors. These cells are capable of inhibiting Ig secretion in the above-mentioned in vitro systems, whereas the T cells lacking H2 receptors are effector cells with NK or ADCC activity. The authors review the functional role of these and many other lymphocyte surface receptors in health and disease. Spiegelberg deals with ‘lymphocytes bearing Fc receptors for IgE’. These receptors are species-specific in humans and rats, antigenically different from the IgE receptors on mast cells and basophils and their affinity for monomeric IgE is about 100-fold lower. 90% of FceR+ lymphocytes are B cells and their function is still unclear. It has recently been shown in Ishizaka’s laboratory that FcεR+ T cells produce factors which regulate IgE production in vitro. Cases of human and murine myeloma show frequently an ‘extraordinary expansion’ of T cells with Fc receptors matching the heavy chain class of the myeloma globulin. The possible role of these cells is thoroughly discussed by Hoover et al. Mor-etta et al. deal with the role of Fcγ and Fcµ receptors on resting and activated human T lymphocytes. Pichler and Broder present a meticulous analysis of the in vitro activities of Fcγ and Fcµ receptor-bearing T cells. Ingenious novel methods, including hybridoma techniques, were used in all investigations. The present volume is unusually rich in facts and stimulating ideas. Paul Kallós, Helsingborg

G. Möller (ed.)
Role of Fc Receptor Bearing T-Cells

Interest is steadily growing in the role of Fc surface receptors on T cells. These receptors are not, as originally supposed, only one of the ‘markers’ of T lymphocytes, but functional units. Their role is highlighted in the present volume. Andersson et al. deal with functional aspects of IgM and IgG-Fc receptors on murine lymphocytes. They stress that these ‘present the potential of modulating or promoting the efficiency of cellular interactions’ in the immune re-

D.J. McLaren
Schistosoma mansoni: The Parasite Surface in Relation to Host Immunity

Schistosomiasis is one of the most widespread and debilitating of all tropical infections caused by metazoan parasites. It is important that people involved in the combat of this disease should have an easy access to recent progress in concerned basic and applied sciences. The present monograph is in this context a most interesting and useful presentation of our current knowledge about the host-parasite relationship in schistosomiasis with emphasis on ultrastructural and developmental aspects of the parasite involved as related to immunological phenomena induced by the different life forms of the parasite.

In the first part of the monograph, the ultrastructure of the parasite as adult worm, cercaria and schistosomulum is described in detail and their surface characteristics are given inter alia by very instructive transmission and scanning electron micrographs. The author’s interest is focused on the tegumental part, particularly its outer membrane and the changes thereof at the shift from one
stage of life to another by the parasite. The observations concerning the topography and morphology of the parasite’s surface coat, its chemical and antigenic composition form the base for the subsequent chapters in which an extended analysis of the immunobiological phenomena involved in the host-parasite relationship is given. Pertinent results from in vivo as well as in vitro studies are put together, and the intricate interplay of cellular and humoral immune responses to primary and subsequent infections by the parasite and their relation to protective immunity or lack thereof is exemplified by the author’s own data as well as findings reported in the recent literature by other investigators. The interest of the biomedically inclined reader is immediately attracted by headings such as antigen mimicry, antigen masking, immunological blockade, eosinophilic killer cells, accelerated membrane turnover and concomitant immunity. In the last chapter, interesting information is given about changes in the molecular organization of the schistosoma membrane as revealed by the electron microscope employing the freeze fracture technique. It is demonstrated that the internal cyto-architecture of the tegumental outer membrane undergoes definite alterations during the maturation of the parasite and that the integral proteins change in number and distribution. The immunological implications of these phenomena are discussed.

The monograph comprising six chapters, each with an individual summary, is terminated by a conclusion where some questions crucial to the understanding of the escape mechanisms of the parasite from the immunological forces of defence in the host are shortly discussed. The schistosomes are obviously very successful parasites with remarkable powers of survival. Interdisciplinary research in biochemistry and immunology, as outlined by the author, point, however, to feasible ways of defeating the parasite. The prospective reader of this interesting book is no doubt in for a stimulating and highly rewarding perusal. Örjan Ouchterlony, Göteborg

G. Mö rer(ed)

Ontogeny of Human Lymphocyte Function

It is well known that the specific defence of neonates and infants against bacterial and viral infections is defective. During the first months of life maternal IgG provides some degree of protection. The present volume highlights the development of the human lymphocyte system and thereby that of immune reactivity. Andersson et al. stress that the newborn is able to form specific IgM to antigens, the IgG and IgA responses are, however, defective due to immaturity of the B cell system. Within 12 months from birth IgG1 and IgG3 production reaches adult levels, whereas the full development of the IgG2 and IgG4 responses takes another year. IgA, a most important protective immunoglobulin, reaches adult levels several years from birth. The failure to mount an immune response against bacterial capsular polysaccharides during the first year or years of life is a sometimes fatal deficiency. T helper function is absent during the first 6 months, whereas the capacity to produce the lymphocyte growth factor interleukin 2 is fully developed at birth. ‘T cell cytotoxicity against allogeneic blast transformed as well as haptenated autologous cells is much reduced in the newborn’ and
matures during the first year of life. In cord blood ‘a unique suppressor T cell function’ exists, mediated through a soluble factor, that exerts ‘cytostatic influence on antigen or mitogen activated T cells of adults and allogeneic neonates... in addition B cells of adults are directly suppressed.’ This suppressor function provides protection against graft-versus-host reaction that could be induced by maternal lymphocytes transferred to the fetus. The following reviews by Hayward, Miyawaki et al., Toivanen et al., Gathings et al. and Haynes add further important details concerning the pre- and postnatal development of the human lymphocyte system. The study of this volume is most rewarding for immunologists and pediatricians. Paul Kallós, Helsingborg