CORRESPONDENCE

CON-A-INDUCED RESPIRATORY BURST

To the Editor:

I read the article of Cohen et al. showing that the respiratory burst induced in leukocytes by Con-A ceases upon removal of the stimulus. This reversibility of the burst (very important in the field of the coupling stimulus-response) is presented by the authors as an original observation. I published the same result 9 yr ago in Nature. In that paper I made two new points: (1) Con-A stimulates the KCN-insensitive respiration in granulocytes and macrophages; (2) this respiratory burst induced by Con-A is a reversible phenomenon, and ceases when a competing sugar (α-MG or α-MM) is added after the activation of respiration. In 1981, my collaborators published data showing that the NADPH oxidase activated by Con-A ceases upon removal of the α-MM. Cohen et al. quote these papers saying that, “It is also known that alpha methyl-mannoside (α-MM) can prevent Con-A binding and Con-A induced PMN O₂⁻ production and oxygen consumption.” However, they do not mention that I have shown that α-MM not only prevents the activation but also switches off the burst and the NADPH oxidase.

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REFERENCES


To the Editor:

It is certainly true that both Prof. Rossi’s group, as noted in his letter, and Cohen et al. had already described the inhibition and inactivation of the Con-A-stimulated respiratory burst by α-methylmannoside (α-MM). In fact, it was those observations that led to our study. We are, therefore, indebted to them and their observations. Each reference is acknowledged in our article. The purpose of our study was to show that the effect of α-MM is specific for Con-A and, more importantly, that this effect can be reversed by the subsequent addition of PMA or the readdition of Con-A after the α-MM is removed. Since there are many perturbations that can be applied to granulocytes which will result in an irreversible inactivation of the respiratory burst (NEM for example), the point of this study was to demonstrate that for α-MM and TPCK, the inactivation was reversed by the addition of other stimulators.

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REFERENCES


T-CELL GROWTH FACTOR RECEPTOR IN ADULT T-CELL LEUKEMIA

To the Editor:

Having been involved in the study of adult T-cell leukemia (ATL) in Japan, we were very much interested in the recent review by Gallo and Wong-Staal about the relationship between HTLV type-C virus and oncogenesis. They hypothesized that provirus of HTLV may activate genes of T-cell growth factor (TCGF) in leukemic cells of ATL and CTCL (cutaneous T-cell lymphoma), resulting in the continuous stimulation of their own receptors for TCGF (TCGF-R). Since ATL leukemic cells and their established cell line cells expressed TCGF-R, as determined by TCGF binding assay and by the reactivity with a monoclonal antibody (Tac Ab) for the antigens (Tac Ag) associated with TCGF-R, their hypothesis appears to be likely.

However, our recent study disclosed that the physiologic regulation mechanism of TCGF-R/Tac Ag is lacking in ATL cells and cell line cells. Since there seems to be no direct evidence for the hyperproduction of TCGF and its unique interaction with TCGF-R “inside” of the membrane in ATL-derived cells or cell lines, we would like to propose a receptor-oriented hypothesis, indicating that the unregulated or “constitutive” expression of TCGF-R/Tac Ag is primarily responsible for the unrestricted proliferation of ATL cells. The expression of TCGF-R and/or Tac Ag is regulated physiologically by external ligands. Their expression is induced or maintained (“up-regulation”) by mitogens, antigens, and crude TCGF (unpublished). As is the case with TL and CALLA antigens, or the acetylcholine receptor, Tac Ag on normal T-cell blasts is “down-regulated” or “modulated” by anti-Tac Ab. Furthermore, we recently found that anti-Tac-Ab can inhibit the induction of Tac Ag on a non-ATL leukemic cell line (YT cells, unpublished) by crude TCGF. It appears that TCGF-R on normal T cells as well as YT cell line is regulable by exogenous ligands.

It has been known that Tac Ag on ATL cells and cell line cells is downregulated by anti-Tac-Ab. Interestingly, the expression of Tac Ag is already unregulable or “constitutive” on ATL-HTLV (+) TCGF-dependent T-cell lines derived from ATL patients. If one is to explain the abnormal TCGF-R expression on ATL cells by the “TCGF hyperproduction model,” one may have to assume that TCGF-R on ATL cells can interact with TCGF from “inside” of the cells, as suggested by Gallo et al. Such a “intramem-
T-cell growth factor receptor in adult T-cell leukemia [letter]
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