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Reply

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As Drs. Metze and Lorand-Metzé commented in their letter, there are several means for analyzing argyro-philic proteins of NOR (AgNORs): with simple enumeration as we did; total dots, both intra- and extranucleolar enumeration, as Crocker et al. recommended, and a combination of number and pattern of AgNORs reported by Metze et al. Since the nature of AgNORs is still unclear, there is no consensus on how AgNORs should be counted. In order to discuss the usefulness of AgNORs staining for analyzing cell proliferation potential, we think that it is essential to standardize counting and staining of AgNORs.

Concerning the relationship between the proliferative activity of cells and AgNORs, we investigated the relationship of AgNORs to the proportions of Ki-67 and DNA polymerase α monoclonal antibody (MoAb)-reacting cells in non-Hodgkin’s lymphomas. We observed a linear relation between the mean number of AgNORs per nucleus and each proportion, and thus recognized that Ki-67 MoAb is useful for analyzing cellular proliferation [1]. However, the proportion of Ki-67 MoAb-reacting cells may not necessarily indicate the proliferative activity of the cells, because human leukemic cells have variable cell cycle times (Tc), mainly depending on the duration of G1 phase. If AgNORs could be directly compared with Tc, a better understanding of the proliferative activity could be obtained. Although it is impossible to know the accurate Tc, approximate Tc in vivo can be calculated [2]. Cells in S-phase always enter into G2 and then immediately proceed into M-phase. So we think that the proportion of cells in S-phase directly indicates the proliferative activity.

References


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Announcement
Update in Haematology/Oncology III: Seminar on Cytokines
Vienna, 25-26 June, 1993

Cytokines, including interleukins, interferons and haematopoietic growth factors, are of increasing importance not only in the understanding of the pathology of many malignant disorders but also for their successful therapeutic control. This seminar provides an overview of the biological role and clinical applicability of substances such as IL-1, IL-3, IL-4, IL-6, SCF, GM-CSF, IFN-α and EPO.

The seminar will be held by the European School of Oncology in collaboration with the European School of Haematology.


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