To the Editor:

A series of data, including those that recently appeared in Blood, have focused the interest on the expression of the antigen recognized by the B-ly-7 monoclonal antibody (MoAb). Other antibodies with a pattern of reactivity similar to B-ly-7 have recently been produced, such as HML-1 and Ber-ACTS MoAbs. The molecular structure recognized by these MoAbs appears to be a trimer made of 150-Kd, 125-Kd, and 105-Kd components, thus analogous to the integrin family. All these antibodies seem to selectively recognize intraepithelial T cells, particularly those of gut, whereas lymphocytes from other compartments are negative. Interestingly, these MoAbs strongly react with leukemic hairy cells and some lymphomas, notably the intestinal T-cell lymphomas.

Recent data are accumulating on the expression of this antigen by in vitro activated T cells, indicating the possibility that the presence of this marker correlates with a long lasting in vivo activation of T lymphocytes. The positivity of intraepithelial lymphocytes of small intestine for this marker is consistent with the evidence of a persistent activation state of these cell populations. This finding prompted us to investigate the expression of this antigen, using the B-ly-7 MoAb, on pulmonary lymphocytes obtained with the bronchoalveolar lavage (BAL) technique from the lower respiratory tract of patients with chronic interstitial lung disorders (eight sarcoidosis, three hypersensitivity pneumonitis, seven HIV-1-seropositive patients with pulmonary involvement, three idiopathic pulmonary fibrosis). All these disorders are characterized by the presence of an alveolitis with T lymphocytes in a chronic state of activation.

As shown in Table 1, we found a significant expression of B-ly-7-positive cells in all the conditions we studied, irrespective of the immunologic type of alveolitis (see CD4/CD8 ratios on Table 1). Lymphocytes from healthy individuals were also shown to significantly express a certain degree of B-ly-7-positive cells (29% ± 4%). Because cells lining the lower respiratory tract are in direct contact with the external environment, this pattern of expression on controls might be interpreted as the consequence of a pre-activation state of the cells we are dealing with. Pulmonary alveolar macrophages were not stained by B-ly-7 MoAb. Because the expression of this antigen seems to be selectively restricted to CD3+ lymphocytes, and in particular to CD8-positive cells, we also investigated the coexpression of CD4 and CD8 antigens and B-ly-7

Table 1. Expression of B-ly-7 Antigen on Bronchoalveolar Lymphocytes From Patients With Different Interstitial Lung Disorders

<table>
<thead>
<tr>
<th>Disease</th>
<th>Cells Recovered (10⁶/mL)</th>
<th>Lymphocytes (%)</th>
<th>CD4/CD8 Ratio</th>
<th>B-ly-7 + Cells (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sarcoidosis (n:8)</td>
<td>284 ± 23</td>
<td>28.0 ± 3.2</td>
<td>6.1 ± 0.9</td>
<td>27 ± 6</td>
</tr>
<tr>
<td>Hypersensitivity pneumonitis (n:3)</td>
<td>353 ± 96</td>
<td>64.5 ± 8.1</td>
<td>0.8 ± 0.1</td>
<td>57 ± 13</td>
</tr>
<tr>
<td>HIV-1 infection (n:7)</td>
<td>138 ± 28</td>
<td>7.5 ± 2.5</td>
<td>0.05 ± 0.001</td>
<td>42 ± 2</td>
</tr>
<tr>
<td>Idiopathic pulmonary fibrosis (n:3)</td>
<td>657 ± 16</td>
<td>18.5 ± 9.4</td>
<td>0.6 ± 0.1</td>
<td>56 ± 2</td>
</tr>
<tr>
<td>Controls (n:6)</td>
<td>145 ± 15</td>
<td>8.8 ± 1.1</td>
<td>1.6 ± 0.5</td>
<td>29 ± 4</td>
</tr>
</tbody>
</table>

Data are expressed as mean ± SEM.

Fig 1. Coexpression of B-ly-7 antigen with CD4 and CD8 antigens on BAL lymphocytes obtained from a normal subject.
antigen. The large majority (more than 60%) of B-ly-7+ cells expressed the CD8 antigen, whereas less than 25% of B-ly-7+ lymphocytes expressed the CD4 antigen (Fig 1). Interestingly, this pattern was demonstrated also in sarcoid patients, where the majority of pulmonary lymphocytes express the CD4 antigen, indicating that sarcoid CD8+ lymphocytes, although present in low percentage, are in vivo activated. Furthermore, it is interesting to note that in the interstitial lung disorders characterized by an accumulation of CD8+ lymphocytes, not all the CD8+ population expresses this antigen, thus suggesting the possibility that different cell subsets with possibly different roles could be identified among the CD8+ cells using this marker.

Our results confirm the conclusions of the paper recently appearing in Blood by Mulligan et al2 supporting the concept that the reactivity with B-ly-7 MoAb represents a new activation marker associated with a long-lasting stimulation and extend the above observation to expression of this antigen by BAL T lymphocytes (including CD4+ lymphocytes) homing the lung microenvironment. The evaluation of B-ly-7+ lymphocytes might be taken into account for monitoring the immune events taking place in the interstitial lung disorders.

ACKNOWLEDGMENT

The authors thank Dr S. Poppema for kindly providing the B-ly-7 MoAb. Supported in part by a grant from the Ministero della Sanità, Istituto Superiore della Sanità-Progetto AIDS 1990 (Rome). R.Z. is a recipient of a fellowship from Istituto Superiore della Sanità (Rome).

RENATO ZAMBELLO
CRISTINA FERUGLIO
ANGIOLO CIPRIANI
PAOLO CADROBBI
GIANPIETRO SEMENZATO
Instituto di Medicina Clinica dell'Università di Padova
Pneumologia e Divisione di Malattie Infettive dell'Ospedale
Civile di Padova
Italy

REFERENCES

B-ly-7, a monoclonal antibody labeling of activated lung lymphocytes [letter]

R Zambello, C Feruglio, A Cipriani, P Cadrobbi and G Semenzato