To the Editor:

In a recent article about purification of common acute lymphoblastic leukemia antigen (CALLA) positive bone marrow cells from normal human bone marrow, Hokland et al stated that the phenotype of these cells resembles that of leukemic common ALL cells. This is in agreement with the observation of Greaves et al in regenerating bone marrow, who found that these CALLA-positive cells can resemble leukemic blasts in both size and staining with J-5, a monoclonal CALLA antibody. These cells are thought to be early B cells. In animal studies, Newman et al showed that early B cells do bind to peanut agglutinin (PNA). Recently, we showed that nonleukemic regenerating CALLA-positive lymphoid cells were also reactive with PNA, contrary to the phenotype of CALLA-positive leukemic blasts at diagnosis and in relapse.

In Fig 1, the percentage of CALLA-positive cells is shown in relation to the percentage of PNA-positive cells for 23 samples, obtained from 18 children. The specimens included regenerating bone marrows (20) of 13 children with leukemia (one acute myelogenous leukemia, 12 ALL) and two children after treatment for solid tumors (neuroblastoma, malignant histiocytosis), and bone marrows of children with myelodysplastic syndrome (one), with pyruvate kinase deficiency (one), and with hypersplenism (one). None of the nine common ALL cases was also PNA-positive. Immunologic phenotyping was done with an immunoperoxidase method on lymphoid cells isolated with Ficoll-Isopaque. There was an obvious positive correlation between CALLA and PNA positivity on lymphoid cells (Spearman’s correlation test: $P < .001$, $r = +.943$).

Our conclusion is that most CALLA-positive nonleukemic lymphoid bone marrow cells are not phenotypically identical to CALLA-positive leukemic blasts, as suggested by Hokland et al. PNA is a useful marker to distinguish between these two.

REFERENCES


To the Editor:

I agree that the data presented in the letter by Hogeman et al is of some interest since we and others have not been able to identify any phenotypic differences between normal common acute lymphoblastic leukemia antigen (CALLA)-positive cells and leukemic CALLA-positive lymphoblasts. We did not use peanut agglutinin (PNA) in our studies, so I have no direct comments to make regarding the issue of whether or not PNA positivity can be used as a reliable marker to distinguish normal from malignant lymphoblasts. Our studies were not meant to suggest that the normal and malignant blasts were absolutely identical, since this is clearly not the case and profound biological differences must necessarily exist that can distinguish normal cells from leukemic ones. On the other hand, the very close phenotypic similarity between these two populations seen with a large panel of monoclonal antibodies suggests that the leukemic cells in patients with CALLA-positive ALL are derived from a very small subset of early lymphocyte progenitors that are present in normal bone marrow.

With respect to the data presented in Dr Hogeman’s letter, it would appear that PNA reactivity might be a useful way of distinguishing between normal and leukemic CALLA-positive cells.
Common acute lymphoblastic leukemia antigen-positive cells in normal bone marrow [letter]

PH Hogeman, AJ Veerman, DR Huismans and IH Van Zantwijk