isoelectric focussing gel which altered the subsequent interaction between the polypeptides and SDS. The formation of doublets in ALC2 and VLC2 (fig. 3) which we observed consistently in our 2D gel system[23] may be similarly explained. Monkey VLC2 has slightly more acidic isoelectric point than ALC2 and this is in accordance with published data for other mammals and birds[7,9,19-24].

We have shown here that although human and African Green monkey are both primate, they have different light chain 1 for atrial and ventricular myosins. Our results indicate that this species of monkey would be no better than lower mammals for the study of myosin light chains in relation to human heart diseases.

1 Acknowledgments. This work was supported by MRC of Canada No. MA-8559. Dr G. Jackowski is a scholar of the Medical Research Council of Canada, and is the author to whom all correspondence should be addressed.

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0014-4754/85/091171-03$1.50 + 0.20/0

Dendritic reticulum cells in AIDS-related lymphadenopathy

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Summary. One of two cases of acquired immune deficiency syndrome-related persistent generalized lymphadenopathy revealed a profoundly altered pattern of dendritic reticulum cells as demonstrated by immunoreactive acid cysteine proteinase inhibitor. The alterations could be related to totally or partially destructed lymphoid secondary follicles.
Key words. Immunohistochemistry; immunologic deficiency syndromes; lymph nodes; protease inhibitors.

Ultrastructural alterations, including both hypertrophy and degeneration of follicular dendritic cells or dendritic reticulum cells (DRC), have been reported in patients with acquired immunodeficiency syndrome(AIDS)-related persistent generalized lymphadenopathy (PGL)[2,3]. Recently, it has been shown that the so-called acid cysteine proteinase inhibitor (ACPI)[4] is a common characteristic of human squamous epithelia and DRC of lymphoid secondary follicles and can be demonstrated immunohistochemically in DRC in paraffin-embedded tissues[5,6]. We have analyzed two PGL cases in order to detect whether any alterations occur in ACPI-immunoreactive DRC in this disorder. The PGL cases came from the metropolitan area of Los Angeles and fulfilled the criteria of the Centers for Disease Control for PGL[7]. Lymph nodes had been fixed in B5-fixative and embedded in paraffin for routine evaluation. For demonstration of ACPI-immunoreactive DRC in the histological section, the peroxidase-antiperoxidase method after Sternberger et al.[8] was used with slight modification. In the control cases (nonspecific follicular reactive hyperplasia) a typical dendritic pattern was found consistently in the lymphoid secondary follicles (figs 1 and 2). PGL case No. 1: In hematoxylin-eosin (HE) stained sections a follicular hyperplasia was encountered without any clearcut destruction of the secondary follicles. The immunostaining for ACPI-reactive DRC exhibited a follicular pattern comparable with that of the control cases. PGL case No. 2: HE-stained sections revealed partial, subtotal or total destruction of the lymphoid secondary follicles. An ACPI-positive follicular DRC-pattern comparable with that of the control cases was found in part of the lymph node and could be related to areas where preserved secondary follicles were discernible. In areas where partial or total destruction of the secondary follicles had occurred, however, a peculiar pattern of ACPI-immunoreactive reticulum cells could be demonstrated (figs 3 and 4). The main characteristics of these areas were as follows: 1) a loss of the normal follicular DRC-pattern, 2) haphazardly organized DRC which tightly embraced groups of lymphoid cells and, 3) occasional hypertrophy of DRC. Some areas exhibited an intermediate pattern with partially preserved or destroyed follicular DRC pattern.

Out of about 100 lymph nodes representing various types of reactive lymphadenopathies, Hodgkin's disease and non-Hodgkin's lymphoma, our case No. 2 of PGL is the first where this type of ACPI-immunoreactive pattern has been encountered. The question of how consistently this phenomenon is associated

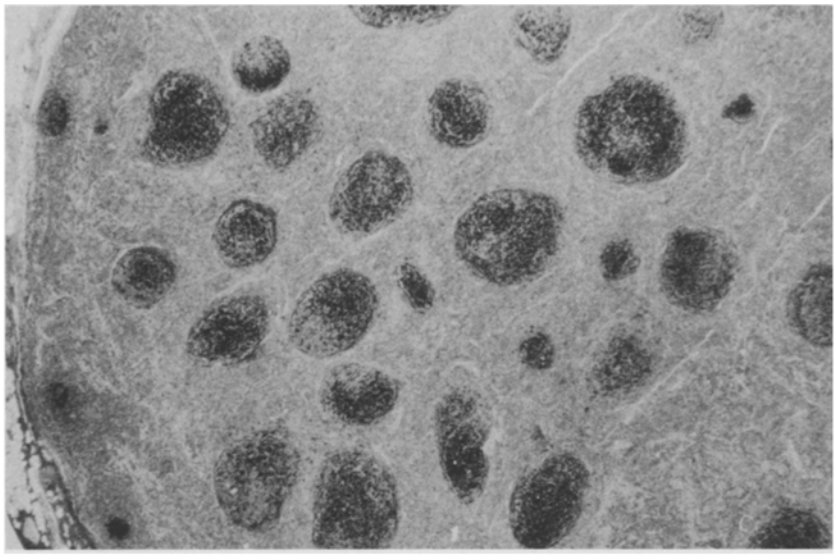


Figure 1. A control case representing a nonspecific follicular hyperplasia exposed to ACPI-antiserum reveals numerous well preserved follicles which exhibit a strong ACPI-reaction. ×20.

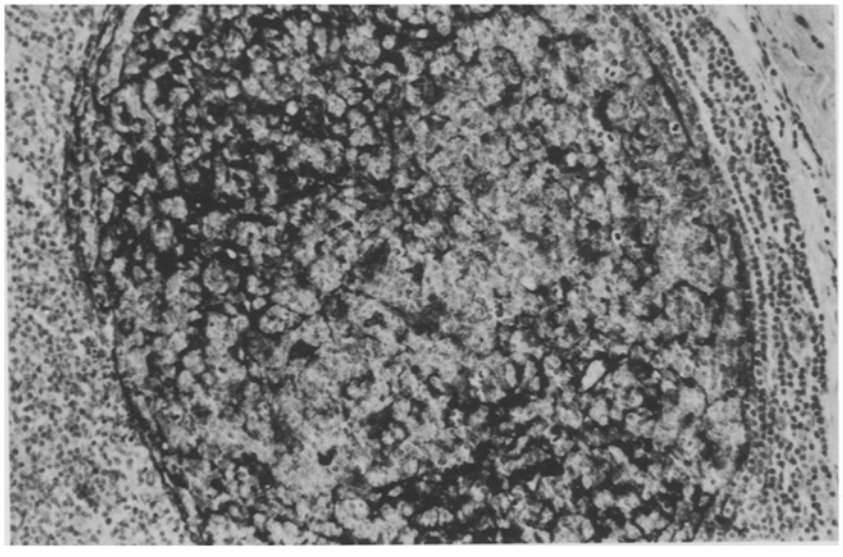
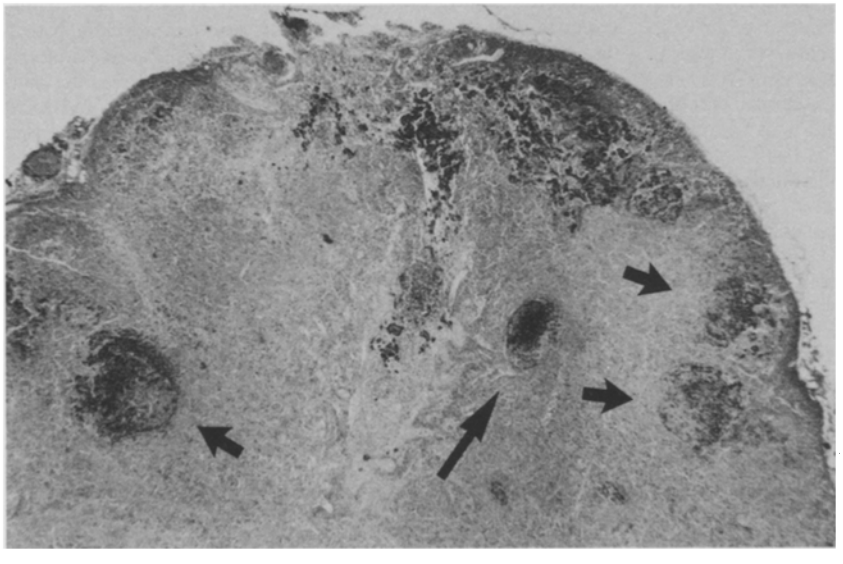


Figure 2. A higher magnification shows a portion of a well preserved secondary follicle in the control case. Follicular center cells are enmeshed within the network formed by ACPI-positive DRC processes. DRC are arranged concentrically at the periphery. ×240.



Figures 3 and 4. Persistent generalized lymphadenopathy representing destructive phase in secondary follicles immunostained for ACPI. There is one totally preserved follicle (long arrow) and three partially destroyed follicles (short arrows). The upper and central part where no preserved follicles could be encountered in hematoxylin-eosin stained sections exhibits a disorganized ACPI-positive reticular pattern (fig. 3). ×20.

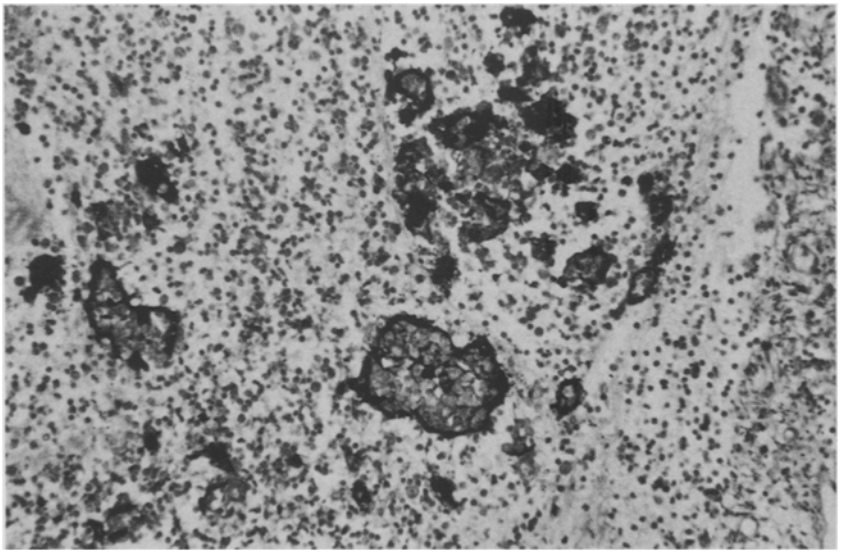


Figure 4. ACPI positive reticulum cells are surrounding lymphocyte clusters and forming irregular aggregates. ×240.

with the destructive phase in lymphoid secondary follicles with PGL remains to be elucidated. It seems to be quite analogous to the destruction of secondary follicles observed in the study of Janossy et al. which employed application of a monoclonal antibody to DRC on frozen sections; in 12 out of 23 patients with PGL this phenomenon could be found[9]. Our findings are also in line with observations by Armstrong and Horne, who, in an ultrastructural study, found discrete or semi-confluent aggregates of expanded DRC in AIDS-related lymphadenopathy[2].

1 Acknowledgments. This work has been partially supported by the grant from the Sigrid Juselius Foundation, Finland.

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0014-4754/85/091173-03$1.50 + 0.20/0

A testis-specific lactate dehydrogenase in the pipid frog, *Hymenochirus boettgeri*

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Summary. Lactate dehydrogenase zymograms of mature testes of *Hymenochirus boettgeri* show in addition to the five isozymes composed of LDH-A and LDH-B subunits, a second 5-band system which is due to isozymes formed between LDH-A and a third subunit, LDH-C. These testis-specific LDH-C isozymes appear around 6 months after metamorphosis indicating that their expression is correlated with sexual maturity as is generally the case in mammals. This is the first report of a testis-specific LDH isozyme in a lower tetrapod; such isozymes have hitherto only been reported in mammals and in the pigeon.
Key words. Testis; LDH-C; *Hymenochirus boettgeri;* Pipidae.

Male germ cells of mammals express a specific lactate dehydrogenase gene (Ldh-c) which is first activated in primary spermatocytes. It is presumed that this lactate dehydrogenase enzyme (LDH-C) processes the lactate present in the fluid of male and female genital tracts as a major energy source for the spermatozoon[2-4]. LDH isozymes of somatic tissues depend on two other nuclear genes, Ldh-a and Ldh-b, encoding different subunits which assemble randomly to form the active tetrameric isozymes. Variations in the amino acid sequences of the three subunits indicate that the Ldh-a and Ldh-b genes are more closely related to each other than is either to Ldh-c, and also that the gene duplications that created the different Ldh genes occurred already at an early stage of chordate phylogeny[5]. In accordance to this view is the 3-Ldh gene constitution of bony fish of the subclass Actinopterygii. While the tissue-specific expression of Ldh-a and Ldh-b is comparable in both fish and mammals, the third Ldh gene of fish has acquired either an eye or a liver specific function in the more evolved teleosts, but shows a generalized expression in more primitive fish orders[6]. In contrast, other vertebrates, i.e. amphibians, reptiles and birds seem to possess only the two Ldh-a and Ldh-b genes, with the unique exception of the pigeons, which show a LDH condition resembling that of mammals[7,8], though the homology between the testis-specific LDH-C isozymes of pigeons and mammals has not been proven. It thus appears that the expression of the Ldh-c gene has been lost in most tetrapods, despite the fact that it had seemingly been conserved throughout the main line of vertebrate evolution leading to the mammals. However, we report here the