

LYMPHOGRAPHIA

DENDRITIC (LANGERHANS) CELLS IN CENTRAL LYMPH OF RABBITS

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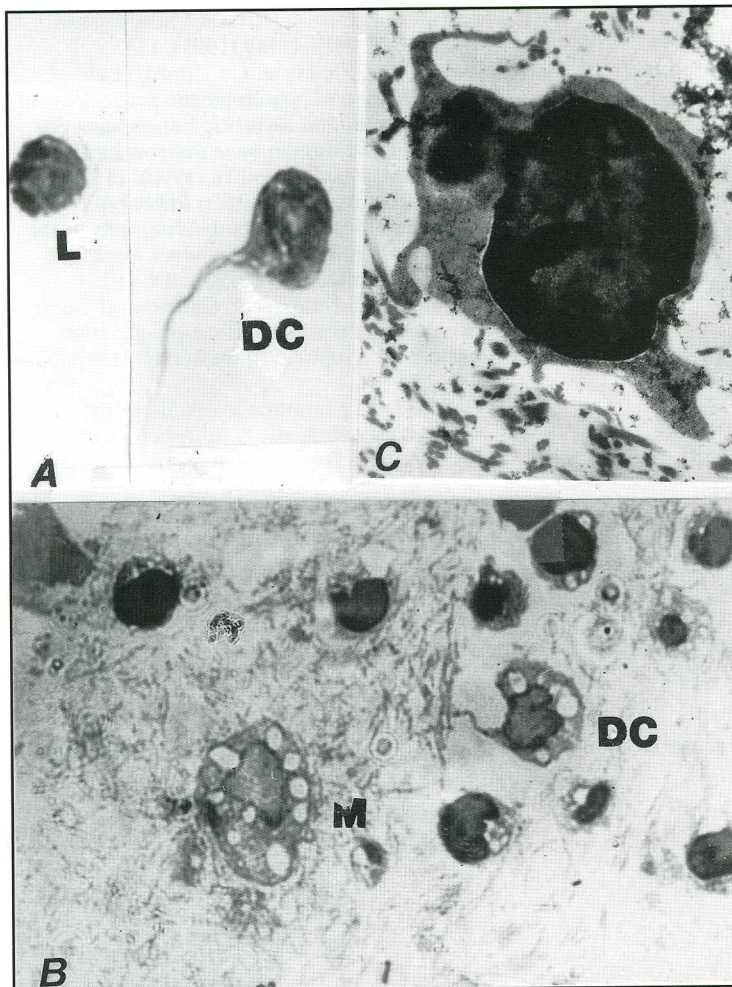


Fig. 1. A. A dendritic cell (DC) compared with a lymphocyte (L) isolated from rabbit central lymph (Giesma x600). B. A dendritic cell (DC) compared with a Mott cell (M) in central lymph of a rabbit (Giesma x600). C. A dendritic cell from central lymph (x8000) (electron microscopy by V.A. Lazarev).

In Chinchilla rabbits (2-3.5 kg), the thoracic duct was accessed at its origin from the cisterna chyli using a glass micropipette.

Approximately 3ml was mixed with 2% glutaraldehyde buffered pH 7.2 with 0.05M cacodylate. Fixation proceeded for 1-2h at

room temperature. Thereafter, the lymph was centrifuged for 20 min at 200g. The supernatant was washed in phosphate-buffered saline, postfixed with OsO₄ and embedded in Epon. Semithin sections were stained with toluidine blue for light microscopy. Thin sections were contrasted by uranyl acetate and lead citrate and dendritic cells isolated and examined by transmission electron microscopy (JEM)—100S.

Dendritic cells are polymorphous structures (*Fig. 1A*) with anomalous forms (*Fig. 1C*). The cell body has processes formed by the extension of cytoplasm. Some of these have a wide base and gradually become more pointed; others are thick and form a bulbous tip. In the cytoplasm, homogenous electron-dense material (chromatin) is seen and is likely part of the nucleus with numerous vesicles in the cytoplasm (*Fig. 1B*). Using a test system described by Weibel et al (1) for morphometrics, the area of the DC nucleus varied from 0.14 ± 0.008 to 0.23 ± 0.01 ; the area of the cytoplasm from 0.01 ± 0.001 to 0.13 ± 0.014 . The area of the "processes" from 0.06 ± 0.007 to 0.09 ± 0.01 and the nucleus/cytoplasm index from 1.1 to 2.3. The size of the DCs themselves varied from 3 to 15 μ l.

Dendritic cells are key elements in various lymphoid and non-lymphoid tissues (2) being found in skin (3,4), bone marrow and peripheral blood (5), as well as in peripheral lymph (6-8). Demonstration of DCs in central lymph confirms that DCs are migratory cells with immunologic activity and may even express neuromediator and neurohormonal capability (9). In this regard, these circulating cells form a critical link between the lymphatic (immunologic) and nervous system.

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