

Human Alveolar Macrophages Express Elafin and Secretory Leukocyte Protease Inhibitor

Alina Mihaila and Guy M. Tremblay*

Centre de recherche, Hôpital Laval, Institut universitaire de cardiologie et de pneumologie de l'Université Laval, 2725 chemin Sainte-Foy, Sainte-Foy (Québec), Canada G1V 4G5.
Fax: +1-418-656-4509. E-mail: guy.tremblay@med.ulaval.ca

* Author for correspondence and reprint requests

Z. Naturforsch. **56c**, 291–297 (2001); received December 16, 2000/January 12, 2001

Alveolar Macrophage, Elafin, Secretory Leukocyte Protease Inhibitor

Elafin and secretory leukocyte protease inhibitor (SLPI) are two structurally related serine protease inhibitors present in the lung. The cellular origin of elafin in the alveolar space is unknown. It has been suggested that at least one alveolar leukocyte population express elafin. We therefore postulated that the alveolar macrophage, as the most numerous leukocyte in the alveolar space, express elafin. On the other hand, it is unclear whether human alveolar macrophages are a source of SLPI. In the present study, we showed by RT-PCR that human alveolar macrophages, but not peripheral blood monocytes, express elafin and SLPI transcripts. Elafin, but not SLPI, mRNA expression was increased time dependently in alveolar macrophages stimulated with *Saccharopolyspora rectivirgula* antigen (50 µg/ml), a causative agent of hypersensitivity pneumonitis, but not LPS (10 µg/ml). Intracellular or cell-associated elafin protein accumulated after 24 h of culture only in *S. rectivirgula* antigen-stimulated alveolar macrophages as shown by Western blot. In contrast, alveolar macrophages release 50 ± 6 pg/ml of SLPI in culture medium with no increase in function of time. Alveolar macrophages could be a source of elafin in the lung. In addition to lung structural cells, SLPI could also be derived from alveolar macrophages.