



# **MACROPHAGE**

## **LIBRARY DISSERTATION**

Submitted to the  
Department of Oral Pathology and Microbiology in partial fulfillment  
of the requirements for the degree of

**MASTER OF DENTAL SURGERY (M.D.S.)**

in

**ORAL AND MAXILLOFACIAL PATHOLOGY AND  
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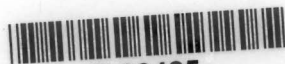
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Macrophages are much more than 'big eaters' implied by their name. Metchnikoff (1893)<sup>1</sup> was the first person to use the term 'macrophage' to describe a large cell which shows the ability to take up microorganisms.<sup>1</sup>

(1924)<sup>2</sup> Aschoff assigned these cells to the reticuloendothelial system (RES), that was later replaced by the term mononuclear phagocyte system (MPS). This includes histiocytes of connective tissue, kupffer cells of liver, alveolar macrophages of lungs, interdigitating cells of lymph nodes, splenic macrophages, osteoclasts of bone and langerhans cells of skin.

The cells of MPS are phagocytes, and are produced by monocytes in the bone marrow. They are the end cells showing no ability to divide further.<sup>2</sup>

Macrophages are corner stone of innate immunity. They are implicated in host defense against various bacterial, viral and fungal diseases via plethora of receptors, phagocytose them, thus evading the pathogen in some but not all cases. Certain organisms like *M. leprae*, HIV viruses, survive in macrophages that renders them unrecognized by the other effector immune cells.<sup>3</sup>

Macrophages have a function in scavenging the cells undergoing programmed cell death which appear as apoptotic bodies. They also induce apoptosis of normal cells under certain circumstances such as, capillary regression.<sup>4</sup>

Macrophages secrete a number of products ranging from enzymes (lysozymes, proteases) that contribute in cell degradation and killing the pathogen to growth factors and