

Gerald M. Turino, M.D.  
Professor of Medicine  
Columbia University College of  
Physicians & Surgeons  
630 West 168th Street  
New York, New York 10032

11/30/78

Remove  
11/24/79

Chemical Basis of Tissue Destruction in Obstructive Lung Diseases.

The major focus of this research is the study of elastolytic enzymes of human alveolar macrophages freshly obtained by bronchoalveolar lavage or cultured in vitro. In addition, elastases derived from canine alveolar macrophages with and without in vivo stimulation will be studied. Factors which determine variations in elastase activity will be investigated including exposure to tobacco smoke, phagocytosis, stimulation with thioglycollate, colchicine, cytochalasin B, endotoxin in vivo and in vitro and natural and synthetic site-specific inhibitors. Attempts will also be made to define the effect of corticosteroids and antibiotics on macrophage elastase production and secretion. Elastase activity will be tested against native elastin as well as specific synthetic substrates and levels of activity in normal populations, patients with chronic obstructive lung disease, individuals with different Pi phenotypes, as well as smokers and nonsmokers, will be established and compared. Elastase from the media of macrophage cell cultures will be isolated and purified and levels of activity and specificity will be compared with those of pancreatic elastase and polymorphonuclear leukocyte elastase. Antisera produced in rabbits immunized with the purified macrophage elastase will be applied to localize the elastase in cells and tissues by immunofluorescence and immunoperoxidase techniques.

Activation Date: July 1, 1978

Current Grant Level: \$41,772.

Φ000147911

B-43B