

The biochemical characterisation of respiratory mucins from patients with Tuberculosis (TB). A report of preliminary findings.

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Introduction: TB is endemic in South Africa and is a recognised cause of bronchorrhea (more than 100ml of mucus production per day). To date there are no reports on the type of mucin produced in the respiratory tract of patients with TB. MUC5AC and MUC5B mucins are found in normal respiratory secretions. Methods: Sputum from patients (adults, n=15 and children, n=6) was obtained from patients at Red Cross and GF Jooste Hospitals in Cape Town. TB diagnosis was made by AFB staining and/or culture. The sputum was added to 6M guanidinium chloride (GuHCl) and a cocktail of proteolytic inhibitors at a dilution of 1:5. Mucins were purified by CsCl density gradient ultra-centrifugation at a 105 000g, twice for 48h and analysed by gel filtration, SDS-PAGE and agarose gel electrophoresis. Results: Mucins fractionated at a density of approximately 1.39g/ml-1 in CsCl/GuHCl. The mucin peak, as determined by the PAS assay was found to be free of all contaminant protein at this density. Gel filtration studies showed that mucins from both controls and TB patients contained both polymeric and degraded glycoproteins (subunits). Agarose gel electrophoresis showed that MUC2 was present in patients with lung disease, with TB patients secreting two different glycoforms of this mucin. MUC5B was absent in patients with TB. Conclusion: Whilst MUC2, a novel mucin was present in a variety of diseases of the lung, MUC5B, a mucin normally found in the respiratory tract, was absent in patients with TB.