Genetic Association of Alpha-1 Antitrypsin Polymorphisms in COPD Patients

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Research project description:

Alpha-1 antitrypsin gene – SERPINA1 is located on chromosome 14q32.1 and belongs to super serine protease inhibitor (serpin) family. The gene product provides protect function of lower respiratory track from damage by neutrophil elastase. The deficiency of the protein in serum leads to progressive lung impairment. Previous studies have shown allelic bias in gene’s transcription regulatory region between healthy and COPD subpopulations, and our next generation sequencing data also confirmed the observation. Our goal for this project is to define the disease prognostic markers and to translate the old DNA fragment technology into precise, and quick large scale screening method for clinical use. The medical student will involve in test samples selection, method development, and results interpretation.