The Integrated Mount Sinai Fibrosis Program

The mission of the Mount Sinai Fibrosis Program is to create a unique, multidisciplinary program that will uncover therapeutic targets and establish novel, effective antifibrotic therapies to improve the health of patients with chronic fibrotic disorders. The overall strategy of the Program is to recruit or exploit existing expertise across the spectrum of diseases affected by fibrosis, working together to identify therapeutic targets, screen for novel drugs, and test promising agents in pre-clinical models and clinical trials.

Fibrosis, or scarring, refers to the accumulation of extracellular matrix (e.g., collagen, proteoglycans and glycoproteins) in response to chronic tissue injury. Fibrosis can involve virtually all tissues, affects hundreds of millions worldwide, and is estimated to account for ~45% of all deaths in the industrialized world. Those organs most commonly affected include liver (cirrhosis), lung (idiopathic pulmonary fibrosis), kidney (nephrosclerosis and tubulointerstitial fibrosis), heart (myocardial fibrosis), arteries (atherosclerosis), bone marrow (myelofibrosis), ovaries/uterus (endometriosis and fibroids) and skin (scleroderma). The past three decades have witnessed explosive growth in our understanding of the mechanisms of fibrosis, which has generated a comprehensive framework for understanding fibrotic diseases. These advances have also unearthed dozens of potential antifibrotic drug targets and spawned broad interest in the pharmaceutical and biotech sectors to develop antifibrotic drugs. While these advances are substantial, there are only two drugs approved yet as an antifibrotic therapy, however www.clinicaltrials.gov currently lists over 1600 ongoing or planned trials in fibrosis. Mount Sinai is committing to becoming the world’s leader in this rapidly expanding discipline of fibrosis pathogenesis and treatment.

The unique activities of the Program include:

1. A dynamic, interactive and translationally-oriented culture of scientific innovation and collaboration.
2. Capacity for analysis of antifibrotic drugs in culture and animal models of tissue injury
3. Access to small molecule and siRNA libraries and monoclonal antibody development to identify novel therapeutics and diagnostics
4. World-class strength in genomics, bio-banking, drug discovery and translational medicine that will complement the Program’s goals of drug discovery and personalized therapies.
5. Unique patient cohorts unparalleled in size or associated scientific and clinical expertise, including those with pulmonary fibrosis, cirrhosis, myelofibrosis, cardiac fibrosis and end-stage renal disease.
6. Dynamic, internationally recognized leadership in fibrotic diseases.
7. Unparalleled visibility of fibrosis research within Mount Sinai among pharmaceutical and biotechnology companies.

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