**RXi Targets Multi-Billion Dollar Fibrosis Market with Unique Platform**

Scarring for most people is something that happens on the skin after a minor scrape or burn, but internal organs can also scar and lead to what are known as fibrotic disorders. Fibrosis is the formation of excess fibrous connective tissue in an organ or tissue in a reparative or reactive process. There are many causes for fibrotic disorders, ranging from infection in pulmonary fibrosis to gene mutations in cystic fibrosis, but few treatment options exist.

RXi Pharmaceuticals Corp. (NASDAQ: RXII) is a biotechnology company focused on therapies using RNAi technologies to treat fibrotic disorders. By silencing the expression of specific genes, the company's compounds reduce excessive scarring and treat many forms of fibrosis that don't stem from external factors. The firm's flagship RXI-109 is initially targeting dermal scarring while an earlier stage program aims to treat liver fibrosis.

On March 5, 2014, the company announced that it had been granted a key patent for its unique self-delivering RNAi compounds (sd-rxRNA) for the treatment of fibrosis. With the patent in hand, management greatly enhanced its value proposition and deepened its ability to broadly protect its proprietary and novel technology platform, including its anti-fibrotic compounds.

In this article, we'll take a look at the company's unique patent-protected technology, how it could treat fibrotic disorders, and the potential market opportunity for investors.

**Large Unmet Medical Needs**

RXi Pharmaceuticals' primary focus is on the dermal scarring market as an adjunct treatment used in conjunction with scar revision surgery. These surgeries could include revisions after a hysterectomy, Cesarean section, cosmetic breast alterations, and bilateral keloids. Griffin Securities - an analyst firm covering RXi Pharmaceuticals - estimated that these markets could exceed $4 billion in size, particularly given the lack of viable alternatives.

Liver fibrosis, or cirrhosis, represents a secondary area of focus for the company. According to the [National Institute of Health](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3265008/), the direct costs of liver cirrhosis in the United States exceeded $2.5 billion in 2004 with indirect costs amounting to $10.6 billion. The organization expects these figures to double over the next 20 years given that the percentage of patients with HCV-related cirrhosis is predicted to almost double and alcohol abuse remains a problem.

In addition to these fibrotic disorders, the company is developing treatments for other diseases with a fibrotic component, such as macular degeneration and retinopathy. Studies in these areas are being conducted with the same target gene as the aforementioned fibrotic conditions with promising results in early-stage pre-clinical and clinical trials. These markets could unlock additional long-term value for investors, but represent only a fraction of its potential.

**Unique Approach Targeting Fibrosis**

Fibrosis is driven by Connective Tissue Growth Factor ("CTGF") which is implicated in epithelial to mesenchymal transition ("EMT"), a cellular process that creates myofibroblasts that drive scarring. The EMT process is a final common pathway that underlies all forms of chronic fibrosis. Since fibrosis appears to be dynamic and amenable to reversal, treatments targeting CTGF could revolutionize the treatment of these disorders by reversing their effects.

RXi Pharmaceuticals' aims to reduce the expression of CTGF using its proprietary RNAi therapeutics. RNA interference ("RNAi") is a biological process in which RNA molecules inhibit gene expression by causing the destruction of specific messenger RNA ("mRNA") molecules. In fact, the company's founder Craig C. Mello shared the 2006 Nobel Prize in Physiology or Medicine for his co-discovery of RNAi in the nematode worm in 1998.

The problem with RNA-based therapeutics has always been the delivery mechanism. Companies like Tekmira Pharmaceuticals (NASDAQ: TKMR) and Arrowhead Research Corp. (NASDAQ: ARWR) have both developed proprietary technologies based on nano particles, but they have largely failed to impress. RXi Pharmaceuticals is different in that sd-rxRNA doesn't require a delivery vehicle in that it's a self-delivering compound.

In early clinical trials, the company's RXI-109 - based on the sd-rxRNA platform - obtained a 43% gene knockdown at a relatively low dosing regimen. Complete knockdown isn't desired in these cases, since complete suppression wouldn't allow any scars to form, but the partial knockdown at such a low dose suggests strong efficacy. If these results are repeated in other fibrotic disorders, the company could be sitting on a breakthrough RNA technology.

**Potential Investment Opportunity**

RXi Pharmaceuticals trades with a market capitalization of $80 million compared to Alnylam Pharmaceuticals Inc.'s (NASDAQ: ALNY) $5 billion valuation or ISIS Pharmaceuticals' (NASDAQ: ISIS) $6.4 billion valuation. While its compounds remain in early trials, the results in early clinical trials suggests strong safety and efficacy that bodes well for its future. Upcoming clinical results and potential partnerships could provide catalysts to unlock that value.

For more information, see the following resources:

* [Company Website](http://www.rxipharma.com/)
* [Recent SEC Filings](http://secfilings.com/SearchResults.aspx?ticker=RXII)