miRagen Therapeutics Reports First Quarter 2017 Financial Results and Provides Corporate Update

May 10, 2017

- MRG-106 granted orphan-drug status for the treatment of mycosis fungoides by U.S. Food and Drug Administration (FDA)
- miRagen's collaboration with Servier extended with the objective to start testing MRG-110 in humans within a year
- MRG-106 clinical data to be presented at ASCO in June 2017
- Cash balance sufficient to fund operations through 2018
- Conference call today at 4:30 p.m. ET

BOULDER, Colo., May 10, 2017 (GLOBE NEWSWIRE) -- Miragen Therapeutics, Inc. (NASDAQ:MGEN), a clinical-stage biopharmaceutical company focused on the discovery and development of microRNA-targeted therapies, today announced first quarter 2017 financial results and provided a corporate update.

"It has been an exciting and productive first quarter of 2017, with encouraging business developments and clinical progress to report," said William S. Marshall, Ph.D., president and chief executive officer of miRagen Therapeutics. "We continue to be encouraged by the interim results from our MRG-106 and MRG-201 Phase 1 clinical trials, and plan to provide updated clinical data at scientific conferences throughout the year. We also completed a merger to become a public company and concurrent financing during the quarter. With a cash runway through 2018, we believe we are well-positioned to deliver clinical data from our existing trials, expand these trials, and provide additional data that may broaden the potential clinical applications of our lead programs."

Business Highlights and Update

- **Completed merger to become a public company:** On February 13, 2017, miRagen completed a merger with Signal Genetics, Inc., and the Company began trading on the NASDAQ Capital Market under the ticker symbol "MGEN" on February 14, 2017.

- **Raised $40.7 million though an equity financing:** Concurrent with the merger, the Company also completed a private placement of its common stock with gross proceeds of approximately $40.7 million immediately prior to the merger.

- **Advanced MRG-106 Phase 1 trial with completion of Part A and continued enrollment in Part B:** As of March 31, 2017, MRG-106 had been generally safe and well tolerated in eighteen of the nineteen patients who had received the product candidate in Parts A and B of the Company's ongoing Phase 1 clinical trial. miRagen expects to present updated data from this trial at the 2017 meeting of the American Society of Clinical Oncology in June. In addition, MRG-106 was granted orphan-drug status for the treatment of mycosis fungoides by the FDA.

- **MRG-201 Phase 1 trial scheduled to be completed and data planned to be presented in second half of 2017:** As of March 31, 2017, 54 healthy volunteers had participated in the Phase 1 trial, 47 of whom had been administered MRG-201 and 7 of whom had been incised without receiving a dose of MRG-201. MRG-201 has been generally safe and well tolerated in all volunteers, with no significant injection site reactions. The Company recently presented previously announced interim results from its ongoing Phase 1 trial of MRG-201 at the Society for Investigative Dermatology 76th Annual Meeting. In addition to presenting data related to the safety of MRG-201, data were presented showing that MRG-201 downregulated specific genes involved with fibrosis and may be beneficial in diseases characterized by abnormal scarring. miRagen expects to complete the trial in the second quarter of 2017, and present additional results from this trial at a scientific conference in the second half of 2017.

- **Extended collaboration with Servier to include clinical candidate:** In May 2017, the Company announced an extension of its collaboration with Servier through September 2019. MicroRNA-92 has been added to the existing collaboration as a new therapeutic target, with the objective to start testing MRG-110 in humans within a year. MRG-110, the lead product candidate under the Servier collaboration, is designed to inhibit the activity of microRNA-92, which has been shown to be a regulator of new blood vessel creation in preclinical models and multiple peer reviewed scientific publications. miRagen believes this may indicate that MRG-110 could be useful as a potential treatment of ischemic disease, cardiovascular disease and certain other vascular flow related diseases.

Upcoming Events

miRagen plans to participate in the following upcoming scientific, medical and industry conferences:

- American Society of Clinical Oncology, June 2-6, Chicago
- International Conference on Malignant Lymphoma, June 14-17, Lugano

- BIO International Conference, June 19-22, San Diego

The Company plans to participate in the following upcoming investor conferences:

- UBS Healthcare Conference, May 22-24, New York
- Jefferies Healthcare Conference, June 6-9, New York

First Quarter 2017 Financial Results

Cash and cash equivalents at March 31, 2017 were $54.3 million, compared to $22.1 million at December 31, 2016. The increase in cash and cash equivalents was primarily attributable to $39.5 million in net proceeds received from miRagen's private placement, partially offset by cash used in operations. The Company's current cash and cash equivalents are expected to be sufficient to fund its operations through 2018.

Net loss attributable to common stockholders for the first quarter of 2017 was $7.0 million, or $0.60 per share (basic and diluted), compared to $3.6 million or $5.58 per share for the same period in 2016.

- Revenue decreased to $0.5 million during the first quarter of 2017, from $0.9 million during the same period in 2016. The $0.4 million decrease was due to a decrease of $0.9 million in revenue recognized under the Company's collaboration agreement with Servier, partially offset by an increase of $0.5 million in grant revenue.

- Research and development expenses increased to $4.1 million during the first quarter of 2017, from $3.5 million during the same period in 2016. The $0.6 million increase was due primarily to a $0.4 million increase in outsourced manufacturing expenses, a $0.4 million increase in personnel costs, as the Company increased the size of its internal research and development workforce, and a $0.2 million increase in clinical development costs. These increases were partially offset by a $0.3 million decrease in outsourced preclinical costs.

- General and administrative expenses increased to $3.3 million during the first quarter of 2017, from $1.0 million during the same period in 2016. The $2.3 million increase was due primarily to a $1.6 million increase in legal, corporate insurance, accounting, audit, and other professional expenses incurred in connection with the merger and as a result of expanding the Company's operations in preparation for, and since becoming, a public company in February 2017. Personnel costs, including share-based compensation, also increased by $0.4 million as the Company increased the size of its workforce.

Conference Call

The miRagen Therapeutics management team will host a conference call and webcast today at 4:30 p.m. ET to discuss a corporate update and financial results for the first quarter 2017. The conference call can be accessed by dialing (888) 430-8709 (U.S./Canada) or (719) 457-2714 (international) and providing the passcode 3263108. A live audio webcast will be available in the Investors section of the miRagen Therapeutics website at www.miragenrx.com.

About miRagen Therapeutics, Inc.

miRagen Therapeutics, Inc. is a clinical-stage biopharmaceutical company discovering and developing proprietary RNA-targeted therapies with a specific focus on microRNAs and their role in diseases where there is a high unmet medical need. miRagen's two lead product candidates, MRG-106 and MRG-201, are currently in Phase 1 clinical trials. miRagen's clinical product candidate for the treatment of certain cancers, MRG-106, is an inhibitor of microRNA-155, which is found at abnormally high levels in several blood cancers. miRagen's clinical product candidate for the treatment of pathological fibrosis, MRG-201, is a replacement for miR-29, which is found at abnormally low levels in a number of pathological fibrotic conditions, including cutaneous, cardiac, renal, hepatic, and pulmonary fibrosis, as well as systemic sclerosis. In addition to miRagen's clinical programs, it is developing a pipeline of pre-clinical product candidates. The goal of miRagen's translational medicine strategy is to progress rapidly to first in human studies once it has established the pharmacokinetics, pharmacodynamics and safety of the product candidate in pre-clinical studies. For more information, please visit www.miragenrx.com.

For information on clinical trials please visit www.clinicaltrials.gov.

Note Regarding Forward-Looking Statements

This press release may contain forward-looking statements that involve substantial risks and uncertainties for purposes of the safe harbor provided by the Private Securities Litigation Reform Act of 1995. All statements contained in this press release other than statements of historical fact, including statements regarding miRagen's strategy, future operations, future financial position, future revenue, projected expenses, prospects, plans and objectives of management are forward-looking statements. The words "believe," "may," "will," "estimate," "continue," "anticipate," "intend," "plan," "expect," "predict," "potential," "opportunity," "goals," or "should," and similar expressions are intended to identify forward-looking statements. Such statements are based on management's current expectations and involve risks and uncertainties. Actual results and performance could differ materially from those projected in the forward-looking statements as a result of many factors, including, without limitation: that miRagen has incurred losses since its inception, and anticipates that it will continue to incur significant losses for the foreseeable future; future financing activities may cause miRagen to restrict its operations or require it to relinquish rights; miRagen may fail to demonstrate safety and efficacy of its product candidates; miRagen's product candidates are unproven and may never lead to marketable products; miRagen's product candidates are based on a relatively novel technology, which makes it difficult to predict the time and cost of development and of subsequently obtaining regulatory approval, if at all; and miRagen's product candidates may cause undesirable side effects or have other properties that could delay or prevent the regulatory approval.

miRagen has based these forward-looking statements largely on its current expectations and projections about future events and trends. These forward-looking statements are subject to a number of risks, uncertainties and assumptions, including those described under the heading "Risk Factors" in miRagen's Annual Report on Form 10-K and subsequent periodic reports filed with the Securities and Exchange Commission. Moreover,

miRagen operates in a very competitive and rapidly changing environment. New risks emerge from time to time. It is not possible for its management to predict all risks, nor can it assess the impact of all factors on its business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements it may make. In light of these risks, uncertainties and assumptions, the future events and trends discussed in this press release may not occur and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements. miRagen undertakes no obligation to revise or publicly release the results of any revision to such forward-looking statements, except as required by law. Given these risks and uncertainties, readers are cautioned not to place undue reliance on such forward-looking statements. All forward-looking statements are qualified in their entirety by this cautionary statement.

Miragen Therapeutics, Inc.
Condensed Consolidated Statements of Operations
(in thousands, except share and per share data)
(unaudited)

	Three Months Ended March 31,	
	2017	**2016**
Revenue:		
Revenue under strategic alliance and collaboration	$ 10	$ 917
Grant revenue	452	—
Total revenue	462	917
Operating expenses:		
Research and development	4,120	3,466
General and administrative	3,281	992
Total operating expenses	7,401	4,458
Loss from operations	(6,939)	(3,541)
Other income (expense):		
Interest and other income	30	7
Interest and other related expense	(71)	(89)
Net loss	(6,980)	(3,623)
Accretion of redeemable convertible preferred stock to redemption value	(5)	(12)
Net loss available to common stockholders	$ (6,985)	$ (3,635)
Net loss per share, basic and diluted	$ (0.60)	$ (5.58)
Weighted-average shares used to compute basic and diluted net loss per share	11,555,286	651,041

Miragen Therapeutics, Inc.
Selected Financial Information
Condensed Consolidated Balance Sheets
(amounts in thousands)
(unaudited)

	March 31, 2017	**December 31, 2016**
Cash and cash equivalents	$ 54,273	$ 22,104
Total assets	57,794	24,760
Notes payable, inclusive of current portion	4,321	4,789
Total liabilities	9,800	9,705
Redeemable convertible preferred stock	—	76,976
Total stockholders' equity (deficit)	47,994	(61,921)

Investor/Media Contact:
Adam Levy
Chief Business Officer

(720) 407-4595
alevy@miragenrx.com

Source: miRagen Therapeutics, Inc.