Madrigal Pharmaceuticals Reports 2018 Second Quarter Financial Results and Reviews Key Clinical Achievements

August 7, 2018

Madrigal's MGL-3196 NASH abstract selected for oral presentation in the presidential plenary clinical session of The Liver Meeting® 2018 during the American Association for the Study of Liver Diseases 2018 Annual Meeting

CONSHOHOCKEN, Pa., Aug. 07, 2018 (GLOBE NEWSWIRE) -- Madrigal Pharmaceuticals, Inc. (NASDAQ:MDGL) today announced its second quarter 2018 financial results and described recent clinical and corporate accomplishments including:

- Positive Phase 2 Clinical Results - MGL-3196 demonstrated highly statistically significant results for the key 36-week endpoints in its Phase 2 clinical trial in non-alcoholic steatohepatitis (NASH), including statistically significant reductions of liver fat and resolution of NASH
- Madrigal's abstract *"In a Placebo-Controlled 36-Week Phase 2 Trial, Treatment with MGL-3196 Compared to Placebo Results in Significant Reductions in Hepatic Fat (MRI-PDFF), Liver Enzymes, Fibrosis Biomarkers, Atherogenic Lipids, and Improvement in NASH on Serial Liver Biopsy"* has been selected for oral presentation at The Liver Meeting® 2018 in San Francisco. The presentation will take place on Monday, November 12, 2018, at 8:15 AM during the Presidential Plenary – Clinical Science
- Increased Capital Position – Madrigal completed an underwritten registered public offering in which the gross proceeds to Madrigal from the offering, before deducting the underwriting discounts and commissions and other estimated offering expenses, were approximately $329 million
- Progress in out-licensed legacy oncology programs – Madrigal's licensee for its Hsp90 inhibitor program, Aldeyra Therapeutics, Inc., recently announced that, ADX-1612, its lead Hsp90 compound, is being advanced in multiple indications: mesothelioma, ovarian cancer and lymphoproliferative immune disease

"We believe the 36-week data from our recently completed Phase 2 clinical study of MGL-3196 in patients with NASH suggest a high likelihood of success in a similarly designed Phase 3 study, for which we are actively preparing, pending regulatory agreement," stated Paul Friedman, M.D., Chief Executive Officer of Madrigal. "With our financial raise completed, which provided more than $300 million of additional capital, we are in a strong position to expedite the MGL-3196 development program in NASH and dyslipidemias."

Becky Taub, M.D., CMO and Executive VP, Research & Development of Madrigal added, "We believe the totality of data from our clinical and preclinical studies to date, including the consistency of the various parameters related to clinical benefits and safety, demonstrate the potential of MGL-3196 to resolve NASH and improve multiple atherogenic lipids. We are pleased our abstract was selected by AASLD as an oral presentation in the presidential plenary clinical session and look forward to presenting these encouraging clinical outcomes in November at The Liver Meeting® 2018."

Financial Results for the Three Months and Six Months Ended June 30, 2018

As of June 30, 2018, Madrigal had cash, cash equivalents and marketable securities of $490.3 million, compared to $191.5 million at December 31, 2017. The increase in cash and marketable securities resulted primarily from the net proceeds of $311.8 million from Madrigal's public offering of common stock in June 2018, partially offset by cash used in operations of $14.0 million.

Operating expenses were $7.8 million and $14.9 million, respectively, for the three month and six month periods ended June 30, 2018, compared to $8.4 million and $14.5 million in the comparable prior year periods.

Research and development expenses for the three month and six month periods ended June 30, 2018 were $5.1 million and $10.3 million, respectively, as compared to $6.8 million and $11.2 million in the comparable prior year periods. The decreases are primarily attributable to completion of treatment in our Phase 2 clinical studies in 2018.

General and administrative expenses for the three month and six month periods ended June 30, 2018 were $2.7 million and $4.6 million, respectively, as compared to $1.6 million and $3.3 million in the comparable prior year periods. The increases are due primarily to higher non-cash stock compensation expense from stock option awards.

Interest income for the three month and six month periods ended June 30, 2018 was $1.2 million and $1.9 million, respectively, as compared to $92 thousand and $168 thousand in the comparable prior year periods. The change in interest income was due primarily to a higher average principal balance in our investment account in 2018.

Out-Licensed Legacy Oncology Programs

Madrigal's licensee for its Hsp90 inhibitor program, Aldeyra Therapeutics, Inc., provided a pipeline update during its June 2018 Research Day. ADX-1612 is a novel Hsp90 inhibitor in development for the treatment of post-transplant lymphoproliferative disorder and cancer. Hsp90 is a protein that facilitates cell replication, which is excessive and uncontrolled in certain inflammatory

diseases and cancer. ADX-1612 is currently being studied in investigator-sponsored trials for mesothelioma, with clinical results expected in the second half of 2018, and ovarian cancer, with Phase 2 clinical trial initiation expected in the second half of 2018. Aldeyra is further developing ADX-1612 for the treatment of lymphoproliferative immune disease, with Phase 2 clinical testing expected to start in 2019.

Clinical Program Summaries for MGL-3196

NASH

Non-alcoholic Steatohepatitis (NASH) is a common liver disease in the United States and worldwide, unrelated to alcohol use, that is characterized by a build-up of fat in the liver, inflammation, damage (ballooning) of hepatocytes and increasing fibrosis. Although people with NASH may feel well and often do not know they have the disease, NASH can lead to permanent damage, including cirrhosis and impaired liver function in a high percentage of patients.

In October 2016, the first patient was treated in the ongoing Phase 2 trial of MGL-3196 for the treatment of NASH. The randomized, double-blind, placebo-controlled, multi-center Phase 2 study enrolled 125 patients 18 years of age and older with liver biopsy-confirmed NASH and included approximately 25 clinical sites in the United States. Patients were randomized to receive either MGL-3196 or placebo in a 2:1 ratio.

The primary endpoint of the study was the reduction of liver fat at 12 weeks compared with baseline (relative change), assessed by MRI-PDFF. Key secondary endpoints at 36 weeks included: reduction in liver fat compared with baseline (relative change), also assessed by MRI-PDFF; a two-point reduction in NAS (NALFD activity score) on biopsy; resolution of NASH on biopsy; and, safety and tolerability based on adverse events and changes in laboratory values.

The primary endpoint of the study at 12 weeks was achieved. Liver fat was reduced by 36.3% in all MGL-3196 treated patients (78) and 42.0% in a pre-specified group of high exposure MGL-3196 treated patients (44/78), as compared with 9.6% median reduction in liver fat in 38 placebo treated patients. These results were statistically significant ($p<0.0001$) for both MGL-3196 treatment groups. Further, 75% of the high-exposure MGL-3196 treated patients showed liver fat reductions of ≥30%.

At 36 weeks, MGL-3196 achieved multiple key secondary endpoints including a sustained highly significant ($p<0.001$) reduction in liver fat compared to placebo as measured by MRI-PDFF; mean relative fat reduction for MGL-3196 was 37% versus 8.9% for placebo. MGL-3196 was associated with a greater percentage of subjects with a 2-point improvement in NAS (56% of 73 patients vs 32% of 34 placebo subjects, $p=0.02$). NASH resolution (NR) was seen in 27% of MGL-3196 compared with 6% of placebo subjects, $p=0.02$. MGL-3196 patients with ≥ 30% fat reduction on Week 12 MRI-PDFF demonstrated a higher percentage of 2-point improvement in NAS (70%, $p=0.001$) and NR (39%, $p=0.001$) compared with placebo, demonstrating a strong relationship between early reduction in liver fat as demonstrated by week 12 MRI-PDFF and NASH improvement on liver biopsy at Week 36. In patients with NASH Resolution, 35% of the MGL-3196 treated patients and no placebo patients had more advanced NASH (baseline NAS ≥5).

At Week 36, MGL-3196 treated patients showed sustained reduction of fibrosis biomarkers. In MGL-3196 patients with NASH resolution, fibrosis also resolved in 50% of patients and was decreased statistically significantly reduced relative to all placebo patients.

There were statistically significant reductions in liver enzymes in MGL-3196 treated patients compared to placebo treated patients; reductions of greater magnitude were achieved with longer duration of MGL-3196 treatment. Statistically significantly more MGL-3196 treated patients than placebo treated patients had normalization of ALT (alanine transaminase).

Similar to week 12, at week 36 there were sustained, statistically significant reductions in low-density lipoprotein cholesterol (LDL-C), triglycerides, ApoB and lipoprotein(a).

MGL-3196 was well tolerated in this trial with mostly mild and a few moderate AEs which were balanced between drug treated and placebo patients. An increase in incidence of mild transient diarrhea in MGL-3196-treated, often a single episode, at the start of treatment. Diarrhea incidence was not increased later in the study.

Based on liver enzyme inclusion criteria, some patients are receiving extended treatment beyond 36 weeks for up to 36 additional weeks. All patients in this extension study will receive MGL-3196 and only non-invasive assessments will be made, including serial MRI-PDFF, safety labs, and circulating biomarkers.

Additional information about the study [NCT02912260] can be obtained at www.ClinicalTrials.gov.

HeFH

Heterozygous familial hypercholesterolemia (HeFH), and a much rarer form called homozygous familial hypercholesterolemia (HoFH), are severe genetic dyslipidemias typically caused by inactivating mutations in the LDL receptor. Both forms of FH lead to early onset cardiovascular disease. HeFH, the most common dominantly inherited disease, is present in up to 1 in 200 people; the disease is found in higher frequencies in certain more genetically homogenous populations. Treatments exist for both HeFH and HoFH but many patients (as many as 40 percent of HeFH patients) are not able to reach their cholesterol (LDL-C) reduction goals on these therapies, reflecting the lifetime burden of cholesterol buildup in their bodies. Based on evidence of impressive LDL cholesterol lowering in Phase 1, and data suggesting that MGL-3196 has a mechanism of action that is different from and

complementary to statins, Madrigal initiated a Phase 2 proof-of-concept trial in HeFH in February 2017 and enrolled 116 patients.

In this Phase 2 HeFH trial, patients who were not at their LDL-C goal were randomized in a 2:1 ratio to receive either MGL-3196 or placebo, in addition to their current cholesterol lowering regimen, which included approximately 75% taking high intensity statins (20/40 mg rosuvastatin or 80 mg atorvastatin), and about 2/3 of patients also taking ezetimibe. MGL-3196 treated patients (placebo corrected) achieved highly significant ($p< 0.0001$) LDL-C lowering of 18.8%, and 21% LDL-C lowering in those on an optimal dose of MGL-3196. LDL-C lowering was 28.5% in MGL-3196 treated compared to placebo in a prespecified group of patients who did not tolerate high intensity statin doses. Highly significant reductions ($p<0.0001$) relative to placebo were also observed with ApoB, triglycerides (TG) (25-31%), apolipoprotein CIII (Apo CIII) and Lp(a) (25-40%) in all MGL-3196 treated patients and prespecified subgroups, irrespective of statin treatment.

MGL-3196 was well-tolerated with primarily mild and some moderate AEs, the numbers of which were balanced between placebo and drug-treatment groups.

About MGL-3196
Among its many functions in the human body, thyroid hormone, through activation of its beta receptor, plays a central role in controlling lipid metabolism, impacting a range of health parameters from levels of serum cholesterol and triglycerides to the pathological buildup of fat in the liver. Attempts to exploit this pathway for therapeutic purposes in cardio-metabolic and liver diseases have been hampered by the lack of selectivity of older compounds for the thyroid hormone receptor (THR)-β, chemically-related toxicities and undesirable distribution in the body.

Madrigal recognized that greater selectivity for thyroid hormone receptor (THR)-β and liver targeting might overcome these challenges and deliver the full therapeutic potential of THR-β agonism. Madrigal believes that MGL-3196 is the first orally administered, small-molecule, liver- directed, truly β-selective THR agonist. MGL- 3196 has now demonstrated in two Phase 2 double-blind, placebo-controlled trials in NASH and HeFH the potential for a broad array of therapeutically beneficial effects, improving components of both metabolic syndrome, such as insulin resistance and dyslipidemia, and fatty liver disease, including lipotoxicity and inflammation. Based on evidence of these pleiotropic actions, coupled with an excellent safety profile, Madrigal plans to initiate a Phase 3 clinical program in NASH and dyslipidemias.

About Madrigal Pharmaceuticals
Madrigal Pharmaceuticals, Inc. (Nasdaq: MDGL) is a clinical-stage biopharmaceutical company pursuing novel therapeutics that target a specific thyroid hormone receptor pathway in the liver, which is a key regulatory mechanism common to a spectrum of cardio-metabolic and fatty liver diseases with high unmet medical need. Madrigal's lead candidate, MGL-3196, is a first-in-class, orally administered, small-molecule, liver-directed, thyroid hormone receptor (THR) β-selective agonist that is currently in Phase 2 development for NASH and HeFH. For more information, visit www.madrigalpharma.com.

Forward-Looking Statements
This communication contains "forward-looking statements" made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. Such statements contain words such as "expect," "could," "may," "will," "believe," "estimate," "continue," "future," or the negative thereof or comparable terminology and the use of future dates. Forward-looking statements reflect management's current knowledge, assumptions, judgment and expectations regarding future performance or events. Although management believes that the expectations reflected in such statements are reasonable, they give no assurance that such expectations will prove to be correct and you should be aware that actual results could differ materially from those contained in the forward-looking statements. Forward-looking statements are subject to a number of risks and uncertainties including, but not limited to, the company's clinical development of MGL-3196, the timing and outcomes of clinical studies of MGL-3196, and the uncertainties inherent in clinical testing. Undue reliance should not be placed on forward-looking statements, which speak only as of the date they are made. Madrigal undertakes no obligation to update any forward-looking statements to reflect new information, events or circumstances after the date they are made, or to reflect the occurrence of unanticipated events. Please refer to Madrigal's filings with the U.S. Securities and Exchange Commission for more detailed information regarding these risks and uncertainties and other factors that may cause actual results to differ materially from those expressed or implied.

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Madrigal Pharmaceuticals, Inc.
Condensed Consolidated Statements of Operations
(in thousands, except share and per share amounts)
(unaudited)

	Three Months Ended	Six Months Ended

	June 30,		June 30,	
	2018	2017	2018	2017
Revenues:				
Total revenues	$ -	$ -	$ -	$ -
Operating expenses:				
Research and development	5,109	6,816	10,307	11,196
General and administrative	2,717	1,623	4,588	3,318
Total operating expenses	7,826	8,439	14,895	14,514
Loss from operations	(7,826)	(8,439)	(14,895)	(14,514)
Interest income (expense), net	1,166	92	1,871	168
Other income	200	-	200	-
Net loss	$ (6,460)	$ (8,347)	$ (12,824)	$ (14,346)
Basic and diluted net loss per common share	$ (0.45)	$ (0.69)	$ (0.90)	$ (1.20)
Basic and diluted weighted average number of common shares outstanding	14,383,720	12,039,005	14,256,501	11,997,602

Madrigal Pharmaceuticals, Inc.
Condensed Consolidated Balance Sheets
(in thousands)
(unaudited)

	June 30, 2018	December 31, 2017
Assets		
Cash, cash equivalents and marketable securities	$ 490,305	$ 191,527
Other current assets	968	485
Other non-current assets	255	301
Total assets	$ 491,528	$ 192,313
Liabilities and Equity		
Current liabilities	$ 5,436	$ 10,054
Long-term liabilities	-	-
Stockholders' equity	486,092	182,259
Total liabilities and stockholders' equity	$ 491,528	$ 192,313

Source: Madrigal Pharmaceuticals, Inc.