



Medicago reports positive Phase I results for its avian flu pandemic vaccine

- Company's results amongst the best for influenza vaccine manufacturing technologies -

Quebec City, Quebec, December 21, 2009 — Medicago Inc. (TSX-V: MDG) a biotechnology company focused on developing highly effective and affordable vaccines based on proprietary manufacturing technologies and Virus-Like Particles (VLPs), today reported positive interim results from a Phase I human clinical trial with its H5N1 Avian Influenza vaccine candidate ("H5N1 vaccine"). The vaccine was found to be safe, well tolerated and also induced a solid immune response.

"We are very pleased with the results from this study. This trial was the first ever clinical evaluation of a plant-based Influenza VLP vaccine and shows that Medicago's vaccine is safe in humans," said Andy Sheldon, President and CEO of Medicago. "We believe our novel vaccine candidate, coupled with our rapid response and low cost manufacturing system offers a preferred option to increase the speed of a public health response in the event of a pandemic outbreak. Looking ahead, the successful completion of this trial should enable us to formalize various partner agreements. It may also allow us to access new sources of non-dilutive funding available through U.S. grant programs and by organizations interested in funding the development of better technologies for pandemic vaccine production."

The Phase I study was designed to investigate the safety of the Company's H5N1 alum-adjuvanted pandemic vaccine candidate and to provide an initial indication of the immune response. A total of 48 healthy volunteers between the ages 18 to 60 received two doses of either Medicago's vaccine at doses of 5, 10 or 20 micrograms (mcg) or a placebo. No serious adverse events were reported during the trial and the vaccine was found to be well tolerated at all three dose levels. Local site reactions were mild and the incidence of systemic side effects was comparable between the H5N1 vaccine groups and the placebo. As planned in the initial design, adverse event monitoring will continue for six months after administration of the second vaccine dose. The trial was conducted at the Vaccine Evaluation Center of McGill University in Montreal, Canada, under the supervision of Dr. Brian Ward.

Preliminary results showed that 81% of immunized subjects developed an immune response against the H5N1 virus after the second immunization. A four-fold increase in HI titers from baseline in 58% of subjects was observed in the 20 mcg group. HI titers greater than 1:40 were developed in 50% of the subjects in the 20 mcg group. The H5N1 vaccine also induced the production of antibodies cross-reacting with two other strains of H5N1 Avian Influenza suggesting Medicago's vaccine potential for cross-protection.

"Results at these lower dosage levels have not been reported for an H5N1 vaccine manufactured with a novel vaccine manufacturing technology," said Nathalie Landry, VP Product Development of Medicago. "H5N1 vaccines are poorly immunogenic in humans and are known to require repeated administrations with an adjuvant to elicit an immune response at low doses."

Full results of this trial will be submitted for publication in a scientific journal and will be available in the coming months. Based on these results, Medicago will proceed with a Phase II clinical trial, expected to commence during the first half of 2010.

About Medicago's pandemic flu vaccine candidate

Medicago's H5N1 vaccine candidate was formulated to protect against the Indonesian influenza virus. It is manufactured in *Nicotiana benthamiana*, a relative of the tobacco plant, using the Company's proprietary VLP technology. VLPs may have several advantages over traditional flu vaccines. They are made to look like a virus, allowing them to be recognized readily by the body's immune system, however, they lack the core genetic material making them non-infectious and unable to replicate. FDA-approved H5N1 influenza vaccines in the United States require two 90-microgram doses, administered at least four weeks apart to achieve appropriate level of antibodies in 44% of vaccinated individuals. Because Medicago's technology requires the genetic sequence of a viral strain and not the live influenza virus, vaccines can be manufactured within four weeks of obtaining the genetic sequence of a pandemic strain. This is in contrast with current manufacturing technologies which rely on strain adaptation and can only deliver a vaccine six to nine months after a pandemic is declared.

About Medicago

Medicago is committed to provide highly effective and affordable vaccines based on proprietary Virus-Like Particle (VLP) and manufacturing technologies. Medicago is developing VLP vaccines to protect against H5N1 pandemic influenza, using a transient expression system which produces recombinant vaccine antigens in non-transgenic plants. This technology has potential to offer advantages of speed and cost over competitive technologies. It could deliver a vaccine for testing in about a month after the identification and reception of genetic sequences from a pandemic strain. This production time frame has the potential to allow vaccination of the population before the first wave of a pandemic strikes and to supply large volumes of vaccine antigens to the world market. Additional information about Medicago is available at www.medicago.com.

Forward Looking Statements

This news release includes certain forward-looking statements that are based upon current expectations, which involve risks and uncertainties associated with Medicago's business and the environment in which the Company operates. Any statements contained herein that are not statements of historical facts may be deemed to be forward-looking, including those identified by the expressions "anticipate", "believe", "plan", "estimate", "expect", "intend", and similar expressions to the extent they relate to Medicago or its management. The forward-looking statements are not historical facts, but reflect Medicago's current expectations regarding future results or events. These forward-looking statements are subject to a number of risks and uncertainties that could cause actual results or events to differ materially from current expectations, including the matters discussed under "Risks Factors and Uncertainties" in Medicago's Annual Information Form filed on March 25, 2009 with the regulatory authorities. Medicago assumes no obligation to update the forward-looking statements, or to update the reasons why actual results could differ from those reflected in the forward-looking statements.

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