



Visterra Presents Preclinical Results that Shows 100% Prevention and Treatment of Influenza with VIS410, a Novel Engineered Human Antibody

— Oral Presentation at ICAAC 2012 on Lead Candidate from Company's Novel Drug Design Platform —

Cambridge, MA – September 10, 2012 – Visterra, Inc., developer of novel therapeutics to treat major diseases, today announced the presentation of positive data from a preclinical study evaluating the efficacy of the company's lead product candidate, VIS410, a broadly protective, fully human monoclonal antibody being developed for influenza A infections. Data from preclinical studies were presented today at the 52nd Interscience Conference on Antimicrobial Agents and Chemotherapy (ICAAC) in San Francisco. These data were also selected by ICAAC to be included in the public communication highlights for the meeting.

Developed using Visterra's innovative platform, VIS410 targets a site on influenza hemagglutinin (HA) that is present across all influenza A subtypes and is resistant to mutation development. VIS410 demonstrated broad neutralization against all influenza A strains tested *in vitro*, and provided potent and specific protection in mouse models against a lethal dose of influenza A virus, both prophylactically and therapeutically. In prophylactic studies, 100% of healthy non-infected mice who received a single dose of VIS410 survived subsequent infection with either H1N1 or H3N2 influenza A virus. In post-infection therapeutic studies, 100% of mice treated with a single dose of VIS410 survived a lethal viral challenge of either H1N1 or H3N2 when antibody was administered up to 72 hours after infection.

"This data with VIS410 shows several ways that this drug candidate has promise for fighting influenza, including possible pandemic strains," said Donna Ambrosino, M.D., Chief Medical Officer of Visterra. "With VIS410, we have designed an antibody that targets the viral hemagglutinin protein (HA) to enable a healthy person or patient to prevent or treat an established infection. Secondly, we have designed VIS410 as an antibody that neutralizes both groups of viral strains for influenza A, Group 1 and Group 2 viruses, opening the potential for a single monoclonal antibody to provide protection from all influenza A strains."

The data on VIS410 were described in an oral presentation today titled "Design of a Broadly Neutralizing Antibody Targeting Influenza A." Utilizing a proprietary platform to identify novel targets and design drugs against these targets, Visterra has identified a unique conformational epitope on the stem region of the influenza hemagglutinin (HA) protein, mapped by peptide scanning, that is not only conserved across all influenza subtypes, but is also resistant to virus

mutation. Using this protein engineering approach, the company designed >50 human antibodies that bind to and neutralize viruses from both Group 1 and Group 2, including an optimized candidate referred to as VIS410. VIS410 targets the identified conserved region with picomolar affinity and demonstrates good physiochemical attributes, including solubility, stability and specificity. In vitro, VIS410 demonstrates dose-dependent viral inhibition with an EC50 in the range of 0.3 – 7 ug/ml against all Group 1 and Group 2 virus strains tested. Mechanistic studies indicate that VIS410 inhibits HA fusion with the cell membrane, thereby intervening in an early step in the influenza infection cycle. At doses of 2.5 and 10 mg/kg in mouse models, VIS410 provides 100% protection from lethal challenge of H1N1 and H3N2, respectively. Furthermore, when the monoclonal antibody is administered up to 72 hours after infection, it is completely effective in treating the infection with 100% survival for both H1N1 and H3N2 virus subtypes.

“We are highly encouraged by these VIS410 results, which suggest that an antibody approach such as Visterra’s may be a turning point in the development of a new universal approach for both seasonal and pandemic influenza,” said Steven Brugger, CEO of Visterra. “This study confirms proof of concept for our proprietary platform to identify unique targets that guide the engineering of novel drugs that are designed to be highly effective in the prevention or treatment of infectious disease.”

About Influenza

Influenza virus infection is one of the most common infectious diseases, typically causing mild to severe illness, which can sometimes lead to death. Influenza epidemics occur yearly during autumn and winter, resulting in about three to five million cases of severe illness, and about 250,000 to 500,000 deaths worldwide. Although the usual strains of influenza that circulate in the annual influenza cycle constitute a substantial public health concern, far more lethal influenza strains have emerged periodically leading to pandemics that kill millions of people. Of the different types of influenza virus, influenza A viruses can replicate and mutate very rapidly, typically involving more serious infections including recent pandemics: H1N1 caused the most deadly global pandemic Spanish flu in 1918, as well as the 2009 swine flu outbreak, H2N2 caused Asian flu in the late 1950s, and H3N2 caused the Hong Kong flu in the late 1960s.

At the general population level, the most effective way to prevent influenza or severe outcomes from the disease is vaccination. However, although safe and effective vaccines have been available and used for more than 60 years, influenza viruses are constantly changing, and the annual vaccine is developed based on an estimation of the three most prominent strains each season. A monoclonal antibody, like VIS410, that is designed to neutralize all influenza A strains, offers potential for both prevention and treatment of seasonal influenza disease. Furthermore, during a pandemic with a new influenza strain, timely production and implementation of an effective vaccine that targets the pandemic strain is not feasible. However, a universally effective monoclonal antibody could be immediately available and would be utilized for prevention in containment strategies as well as treatment for those at highest risk. VIS410 is being developed for clinical studies and expected to enter the clinical

stage over the next two years. Finally, the unique epitope that VIS410 targets also holds promise for the development of a universal vaccine. A universal vaccine or therapeutic that targets a common element in all strains of influenza would have significant worldwide impact on addressing both seasonal and pandemic influenza.

About Visterra

Visterra discovers and develops novel drugs for the prevention and treatment of major diseases. The company's proprietary platform generates unique structural information that identifies novel drug target sites and guides the design of drugs to effectively combat disease. The company's lead product candidate, VIS410, is a broad spectrum monoclonal antibody for the prevention and treatment of both seasonal and pandemic influenza. The company is building a proprietary pipeline in infectious disease, and continuing to expand its disease area focus through strategic partnerships in infectious and other diseases. Visterra was founded by Dr. Ram Sasisekharan of MIT and is backed by Polaris Venture Partners, Flagship Ventures, and Lux Capital. For more information please visit www.visterrainc.com.

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