Corporate Background

Alpha Cancer Technologies Inc., (ACT) is a private clinical stage biotechnology company with Immunomodulation, Targeted Oncology and Radio Pharmaceutical platforms under development. The company's drug products use ACT's patented recombinant human alpha fetoprotein (AFP or ACT-101).

In nature AFP is an immune regulatory protein involved in protecting the fetus from attack by the mother's immune system and also functions as a carrier protein transporting nutrients from the mother to the embryo via AFP receptors (AFPR), which are found on all fetal cells. The production of AFP and AFPRs recede at birth as they are no longer necessary, and albumin takes over the function of transporting nutrients to cells.

The expression of AFPRs returns to almost all cancer cells (solid and liquid) as cancer is a reversal to an embryonic state and like embryonic cells the cancer cells are undifferentiated, so the receptors are re-expressed.

AFPRs are also uniquely found on Myeloid Derived Suppressor Cells (MDSCs) which are recruited by cancer cells to the tumor microenvironment to block tumor recognition by the immune system. As AFPRs are absent on normal adult cells this provides a unique targeted treatment of cancer and MDSCs with excellent safety. We look forward to demonstrating this **one-two** punch in clinical trials showcasing this safe, targeted immuno-oncology approach for most cancers.

Game Changer in Oncology

Please** Click Here **to watch an animation of our game-changing Immuno-oncology Asset ACT-903

Oncology is currently one of the most active areas of research with almost every major pharmaceutical company developing or in-licensing new products to treat the significant unmet need. However, almost all the approaches being explored aim at trying to either target receptors that are preferentially found on cancer cells or at unblocking a specific immune checkpoint in the very complex universe of immune system interactions. They carry risk of serious side-effects – black-box warnings - as well as having limited efficacy/durability for most patients.

ACT's targeted immuno-oncology platform overcomes the limitations of the current approaches and offers an opportunity to provide durable, **safe and effective therapy** to most cancer patients.

Targeted Immuno-Oncology Treatments:

Protein Drug Conjugate (PDC) – **ACT-903** (AFP+linker+pmaytansine) targets the AFPR which is uniquely present in over 80% of solid and liquid cancers, as well as MDSCs, providing greater efficacy with significantly reduced or no toxicity.

Radio Ligand Therapy - Cancer imaging and therapeutic development targeting AFPR with ^{89}Zr-ACT-101 (diagnostic) and ^{177}Lu - ACT-101 (therapeutic).

As we have the only patent protected AFP in the world, ACT's platform is a **first-in-class, next-generation targeted delivery platform**.

Low/no toxicity of this targeted approach offers the ability to treat the patient more frequently until remission is achieved. You no longer need to wait for the patient to recover from toxic treatments. Instead, the treatment strategy is to maintain continuous saturation of the AFPRs by keeping the therapy consistently present. Earlier candidate assets included non-covalently bound chemotherapy using taxol (ACT-901) and thapsigargin (ACT-902) which demonstrated superior efficacy and safety compared to chemotherapy alone. The company's current lead immuno-oncology asset, ACT-903 is AFP chemically linked to a proprietary form of chemotherapy called maytansine, using a proprietary linker.

MDSCs in the solid tumor microenvironment block the patient's immune system from recognizing and attacking the cancer cells directly. Our preclinical studies, as well as data published by others, have demonstrated that AFP with its payload directly targets MDSCs at the same time as tumors. By taking down the MDSC shield this unleashes the patient's immune system to attack the tumors as well.

Exceptional data was generated in an ovarian xenograft model by Southern Research Institute. Treatment with ACT-903 Induced 100% (complete) elimination of tumors in an A2780 ovarian cancer xenograft. No tumor regrowth was seen on day 62 at the study end while all control mice were dead by day 34 (50% at day 29). These superior results only show the direct effect on tumors and does not demonstrate the additional potential of ACT-903 also taking down the MDSC shield allowing the immune system to simultaneously attack the tumor, as this xenograft model uses immune-deficient mice. The additional effect is expected to be demonstrated in clinical studies. No signs of toxicity were observed in any of the animals treated (no ocular, no bone-marrow, no liver toxicity) with animals gaining weight throughout the study.

First in-human studies with ACT-903 will focus on platinum-resistant ovarian and/or testicular germ cell cancers to start. These are both rare disease indications, providing ACT-903 a valuable orphan drug designation and could lead to early commercial approval. This would be followed by expanded use and clinical studies in other solid and liquid cancers (Breast, Bowel, Lung, Prostate, Lymphoma, Leukemia etc.).

Compelling Rationale and Safety Profile

Immunomodulation Platform – It is well-known that many autoimmune diseases in women go into remission during pregnancy, and there is a strong correlation between the level of AFP in mother's blood and the decrease in the symptoms of her disease.

ACT-101 (AFP) has numerous Immunomodulatory interactions with the immune system. These interactions are highly beneficial in many IgG-mediated diseases including Myasthenia Gravis (MG), IBD (Crohn's and Colitis), MS (Multiple Sclerosis) and many other autoimmune

diseases. ACT-101 has the potential to be a novel, first-in class, best-in class, therapy. As an immunomodulatory treatment, ACT-101 is given subcutaneously once per week, which provides for much greater patient convenience, and has already demonstrated a much better safety profile than current treatments which carry black-box warnings.

ACT-101 can be commercially manufactured and is supported by a comprehensive Drug Master File (DMF) with the FDA. It has an outstanding safety profile, having been tested in over 300 patients in clinical settings. The treatment demonstrated excellent safety, with no serious adverse events reported even at repeated high doses, and it did not generate any neutralizing antibodies.

Inflammatory Bowel Disease (IBD) – A clinical development plan has been designed by world leader in IBD clinical studies – Alimentiv. Previously, in a randomized placebo controlled clinical study in patients with inflammatory bowel disease (IBD – Crohn's/Colitis), AFP extracted from human fetal tissue ("wild type") was highly effective in reducing inflammation and producing remissions in patients who were unresponsive to standard therapies. The study summary is below:

- Randomized placebo-controlled study in patients with IBD (78 patients - 56 with colitis, 22 with Crohn's);
- Disease duration of 5-15 years with radiological evidence of disease; and
- Patients were treated with AFP daily (10 Crohn's and 28 colitis), 40 with placebo, for 30 days

After 30 days 100% of AFP-treated patients had definite improvement in their clinical symptoms, laboratory parameters returned to normal (Hemoglobin, albumin, IGA, IGM, decrease in CD71+ cells, etc.). 47% of treated patients gained weight of up to 12 kg. 30% of Crohn's and 32% of colitis patients had complete restoration of normal bowel movements and no symptoms of disease. Endoscopy confirmed improvement in the intestinal mucosa with reduction of the number of ulcerative lesions. 30% of Crohn's patients were able to reduce steroid dose to half and 20% went off steroids completely. 32% of colitis patients were able to reduce steroid dose by half or more and 7% went off steroids completely. No significant changes were observed in placebo patients during the study period.

Pre-clinical studies using the TNBS model of IBD were carried out by Intestinal Biotech Development, a Clinical Research Organization (CRO) at the Lille School of Medicine, France, to corroborate these findings using ACT-101 and data were presented at the World Congress of Gastroenterology. The studies showed that ACT-101 was better than Anti-TNFα (Humira®/Remicade®) in decreasing inflammation in this model. These results showed a 53% reduction in inflammatory scores for ACT-101 versus a 45% reduction for anti-TNFα. Both Humira and Remicade carry a black box warning label while the safety of ACT-101 is excellent – a significant benefit to patients.

ACT is ready to proceed with Phase II clinical trials in Ulcerative Colitis and can extend trials to Multiple Sclerosis (MS) and 40+ other autoantibody-driven diseases demonstrating its portfolio-in-a-product potential.

Myasthenia Gravis (MG) – In a study conducted at George Washington University using the experimental model of chronic MG (EAMG model), treatment with ACT-101 given for 14 days significantly reduced the mean clinical scores at the end of treatment compared with the control, indicating a decrease in MG disease severity (p=0.0125). There was also a significant reduction in immunoglobulin G2 (IgG2) level, a fraction of IgGs containing pathogenic MG antibodies while overall IgG levels were little changed. Analysis of the neuro-muscular junction (NMJ) showed preservation of the AChR in the rats treated with ACT-101, consistent with a decrease in antibody-mediated damage of the AChR with a significantly decreased membrane attack complex (MAC) deposition compared to the control group. There was no evidence that ACT-101 had a general immunosuppressive effect but rather demonstrated an immunomodulatory effect.

ACT is ready to proceed with phase II trials with ACT-101 in MG, a devastating neuromuscular disease. An adaptive clinical design has been developed and ACT-101 already has Orphan Drug Designation from the FDA in this indication.

PIPELINE

THERAPY	INDICATION	PARTNERS/KOLS	DISCOVERY	PRE-CLINICAL	PHASE I	PHASE II
ACT-903	**TARGETED ONCOLOGY PDC** Solid/Liquid Tumors	Absci, Abzena, University Health Network, Princess Margaret Cancer, Sunnybrook, Ohio State	Targeted Oncology PDC			
89Zr-ACT-101 **177Lu-ACT-101**	**Radio Ligand Dx** Solid/Liquid Tumors **Radio Ligand Tx** Solid/Liquid Tumors	Center for Probe Development and Commercialization, AtomVie, Canprobe	Targeted Oncology RLT			
ACT-101	**IBD (Crohn's/Colitis)**	Lille Medical School, Alimentiv	Immunomodulation Portfolio in a Product			
ACT-101	**Myasthenia Gravis (MG)** (Orphan Drug Designation)	George Washington University, Hadassah Brain Labs				
ACT-101	**Multiple Sclerosis** (MS), 40+ autoimmune diseases	Hadassah Brain Labs				

Bristol-Myers Squibb holds a 14% equity stake in ACT with no pre-emptive nor commercial rights. A total of US$25 million in equity has been raised to date. The company's platform technologies have a significantly mitigated risk profile in every area of development and an expedited clinical development path.