Elpiscience Announces Studies Presented at SITC 2022 Annual Meeting

SHANGHAI, China and SUZHOU, China and GERMANTOWN, Md., Nov. 18, 2022 – Elpiscience Biopharmaceuticals, Inc. ("Elpiscience"), a clinical-stage biopharmaceutical company focused on developing next-generation immunotherapies to benefit cancer patients worldwide, presented positive studies for its innovative immunotherapeutic molecules at the SITC 2022 Annual Meeting, including anti-SIRPα monoclonal antibody ES004, PD-L1/SIRPα bispecific antibody ES019, anti-LILRB2 monoclonal antibody ES009, anti-SIGLEC15 antibody ES012, and anti-LAG3 monoclonal antibody ES005,.

Study highlights:

1. **Title: Treatment of anti-SIRPα in combination with anti-TAA exerts superior anti-tumor activity**

Abstract No.: 793

SIRPα is an inhibitory receptor expressed mainly on myeloid cells and dendritic cells. Ligation of CD47 to SIRPα delivers a "don't eat me" signal to suppress macrophage phagocytosis. Tumor cells frequently overexpress CD47 to evade macrophage-mediated destruction. Anti-SIRPα mAb ES004 potently potentiates antibody dependent cellular phagocytosis (ADCP) activity of antibodies against tumor associated antigens (TAAs) *in vitro* and *in vivo*.

Highlights:

- ES004 recognizes pan-allele human SIRPα with high affinity
- ES004 binds to a unique epitope on the CD47 binding domain of SIRPα
- ES004 potently blocks CD47-SIRPα interaction and CD47 induced SIRPα signaling
- ES004 effectively potentiates pan-allelic macrophage phagocytosis of tumor cells
- ES004 has no negative impact on T cell activation
- ES004 enhances anti-tumor activity in combination with anti-Claudin18.2 in MC38/hCLDN18.2 syngenetic tumor model
- ES004 has demonstrated favorable PK, full target occupancy and excellent safety profile in cynomolgus monkeys.

2. **Title: Dual targeting of innate and adaptive immune checkpoints with a PD-L1/SIRPα bispecific macrophage engager to promote anti-tumor activity**

Abstract No.: 1211

The anti-PDL1/SIRPα bispecific antibody ES019, designed for tumor cell and immune cell dual targeting, is capable of reactivating macrophages and T cells to kill cancer cells with the potential to overcome the limitations of traditional anti-PD1 therapies and has demonstrated significantly enhanced tumor therapeutic efficacy and specificity versus combo or monotherapies.

Highlights:

- ES019 phagocytosis activity is corrected with PD-L1 level on tumor cells
- ES019 leads to better phagocytosis capability of tumor cells by M2-like than M1-like macrophage
- ES019 activates T cells without induction of phagocytosis of T cells
- ES019 shows favorable PK in mouse model
- ES019 demonstrates single agent anti-tumor efficacy in animal model

3. Title: ES009, a LILRB2-specific blocking antibody, reprograms myeloid cells into pro-inflammation phenotype and potentiates T cell activation

Abstract No.: 1062

LILRB2 is predominantly expressed in myeloid lineage cells. Human LILRB2 broadly binds to multiple ligands and contributes to immune suppression in the tumor microenvironment (TME). Anti-LILRB2 mAb ES009 has demonstrated superior effects in converting immunosuppressive myeloid cells into pro-inflammation phenotypes in *in vitro* and *ex vivo* models.

Highlights:

- ES009 specifically binds human LILRB2 with high affinity
- ES009 binds to a unique epitope on D1 domain of LILRB2
- ES009 potently blocks LILRB2 binding to multiple ligands
- ES009 promotes monocytes and monocytes derived DCs into a pro-inflammatory status
- ES009 effectively reprograms human monocyte derived M2 macrophages into pro-inflammation M1 phenotypes
- ES009 effectively relives T cells from M2 macrophages mediated suppression
- ES009 converts primary macrophages in malignant ascites in ovarian cancer patients into a pro-inflammatory status

4. Title: SIGLEC15 induces monocyte apoptosis and an SIGLEC15 antibody ES012 reverses myeloid cells driven immunosuppression

Abstract No.: 1401

SIGLEC15 is a glycan-recognition proteins belonging to the SIGLEC family and is highly expressed on TAM and many tumor cells. It's reported that SIGLEC15 inhibits T cell activity via its binding to an unknown receptor on T cells. Elpiscience has identified a novel function of SIGLEC15 that SIGLEC15 can induce monocyte apoptosis and its inhibitory effect on T cell function is indirect. Based on this newly discovered SIGLEC15 biology, we have developed a potent, functional anti-SIGLEC15 mAb ES012 that has great potential to reverse immune suppression in TME to promote anti-tumor immunity.

Highlights:

- SIGLEC15 induces monocyte apoptosis, which is dependent on sialic acid binding and mediated via caspase-3
- SIGLEC15 inhibits T cell function via myeloid cells but not by directly binding to T cells
- ES012 is a high affinity anti-SIGLEC15 monoclonal antibody.
- ES012 can rescue monocyte apoptosis and inhibit T cells by SIGLEC15.
- ES012 showed superior anti-tumor efficacy and better PK profile than benchmark antibody in preclinical model

5. **Title: ES005, a high affinity anti-LAG3 monoclonal antibody, inhibits the interactions between LAG3 and multiple ligands and enhances anti-tumor activity of T cells in preclinical models**

Abstract No.: 426

LAG3 plays an important role in regulating immune homeostasis with multiple biological activities related to T cell functions. Anti-LAG3 mAb ES005 has demonstrated significant tumor growth inhibition in *in vivo* mouse tumor models, and showed excellent PK and safety profile in NHPs, indicating great potential to be used as next-generation immune checkpoint inhibitor in cancer treatment.

Highlights:

- ES005 is a high affinity and cynomolgus reactive anti-LAG3 mAb
- ES005 binds to a unique epitope on LAG3 D1 domain
- ES005 potently blocks LAG3 binding to multiple ligands including FGL-1
- ES005 effectively upregulates NFAT reporter gene transcription via blocking LAG3/MHC-II interaction
- ES005 effectively reverses LAG3 driven inhibition of T cell activation
- ES005 monotherapy potently inhibits tumor growth in EMT6 syngeneic tumor model
- ES005 was well tolerated in cynomolgus monkeys with favorable PK Profile

To learn more about the studies, please visit Elpiscience official website
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About Elpiscience:

Elpiscience is a clinical-stage biopharmaceutical company focused on developing next-generation immunotherapy to benefit cancer patients worldwide. The Company has a robust pipeline of globally innovative cancer immunotherapies covering wide range of oncology targets and multiple proprietary technologies to enable discovery including its Bispecific Macrophage Engager (BiME®) antibody platform for solid tumors, human antibody Fab library ElpiSource™ and H-L interchain disulfide bond engineering BsAb platform Acebody™.

Founded and managed by a team of biotechnology industry leaders and scientists, Elpiscience is supported by a world-class Scientific Advisory Board and high-quality investors including, Lilly Asia Ventures, GL Ventures, Hyfinity Investments, Greater Bay Area Homeland Development Fund, CDH, DYEE Capital and Cormorant Asset Management.