Poseida Therapeutics Presents Novel BCMA-Specific CAR-T Therapy at CAR-TCR Summit

SAN DIEGO, Sept. 06, 2017 (GLOBE NEWSWIRE) -- Poseida Therapeutics Inc. ("Poseida"), a San Diego-based company translating best-in-class gene editing technologies into lifesaving cell therapies, today presented preclinical data on P-BCMA-101, the company's BCMA-specific CAR-T drug candidate for the treatment of multiple myeloma, at the CAR-TCR Summit on T Cell Immunotherapies in Boston.

The presentation, given by Devon J. Shedlock, Ph.D., senior director of immuno-oncology at Poseida, expanded upon recent preclinical studies of P-BCMA-101 demonstrating potent and persistent anti-tumor activity, elimination of tumors following relapse without re-administration of drug and prolonged survival compared to other BCMA CAR-T agents in the same preclinical model. Poseida's CAR-T modifications are engineered using its proprietary piggyBac™ non-viral gene delivery system and Centyrin™ binding domain, which enables a streamlined and scalable manufacturing process that does not employ viruses, cytokines or magnetic beads and consistently produces high concentrations of modified T cells necessary to treat patients. This process yields an exceptionally high percentage (>70%) of the highly desirable stem cell memory T cell subtype (Tscm) even when starting with patient materials where Tscm is very rare. In contrast, competitor products typically report 0-20% Tscm cells. Recent studies show that Tscm cells may result in a CAR-T product that is more efficacious in patients.[1]

Poseida has now demonstrated that P-BCMA-101 can achieve 100% survival in an ultra-stringent p53 knockout mouse xenograft model developed at MD Anderson Cancer Center. These mice are implanted with a highly aggressive human myeloma cell line that has been genetically modified to knockout p53, a tumor suppressor protein involved in many types of cancer. This system accurately models the 30-50% of relapsed/refractory multiple myeloma patients whose tumor develops perturbations in the p53 pathway.[2] Multiple myeloma tumors with p53 mutations are not fully responsive to any existing therapeutic on the market and these patients have an extremely poor prognosis.

Key findings include:

- **Potent anti-tumor activity:** P-BCMA-101 treatment typically reduced tumor burden to the limit of detection within 6 to 9 days. Conversely, all untreated controls succumbed to disease.
- **Persistent and durable response:** P-BCMA-101 expands and persists in treated mice, eliminated tumor following relapse and prolonged survival with all treated mice surviving to the end of the 90-day study.
- **No T-cell exhaustion observed:** P-BCMA-101 did not exhibit effects of CAR-mediated tonic signaling, a common cause of T-cell exhaustion that leads to poor durability. Tonic signaling is caused by oligomerization of unstable binding domains commonly seen with traditional single-chain variable fragment (scFv) CARs.

Poster presentations are available on the publications page of Poseida's website at www.poseida.com/publications.

About P-BCMA-101
Poseida's lead product candidate is a B-cell maturation antigen (BCMA)-specific CAR-T drug candidate (P-BCMA-101) for the treatment of patients with relapsed or refractory multiple myeloma. P-BCMA-101 employs a BCMA-specific Centyrin™ binding domain and is engineered using a non-viral gene delivery system called piggyBac™ DNA Modification System which leverages the technology's capability to deliver 30 times more cargo than traditional virus-based CAR T-cell modification systems. P-BCMA-101 has demonstrated potent anti-tumor activity, persistent and durable response, significant T-cell memory, a high concentration of P-BCMA-101 modified T-cells and no T-cell exhaustion. A unique feature of P-BCMA-101 is its strong stem cell memory phenotype, which has shown in preclinical studies to lead to unprecedented durability of response without re-administration of treatment. Poseida expects to initiate a Phase 1 clinical study of P-BCMA-101 in 2017.

About Poseida Therapeutics, Inc.
Poseida Therapeutics is translating best-in-class gene editing technologies into lifesaving cell therapies. The company is developing CAR T-cell immunotherapies for multiple myeloma and other cancer types, as well as gene therapies for orphan diseases. Poseida has assembled a suite of industry-leading gene editing technologies, including the piggyBac™ DNA Modification System, XTN™ TALEN and NextGEN™ CRISPR site-specifi nucleases, and Footprint-Free™ Gene Editing (FFGE). For more information, visitwww.poseida.com.

References

1. Melenhorst J. et al. "Correlates of Response to CD19-directed CART Cell Therapy in Chronic Lymphocytic Leukemia." 20 th ASGCT Annual Meeting, 12 May 2017.
2. Drach, J, et al. "Presence of a p53 Gene Deletion in Patients with Multiple Myeloma Predicts for Short Survival after Conventional-Dose Chemotherapy." *Blood*, U.S. National Library of Medicine, 1 Aug 1998, www.ncbi.nlm.nih.gov/pubmed/9680348.

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