



NEWS RELEASE

Omeros' Proprietary Orphan GPCR Program Delivers New Target and Approach in Cancer Immunotherapy

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-- Small-Molecule Inhibitors Enhance Immune System and May Offer Advantages over Existing Cancer Therapies --

SEATTLE--(BUSINESS WIRE)--Dec. 5, 2016-- Omeros Corporation (NASDAQ: OMER) today announced that its small-molecule inhibitors against GPR174, an orphan G protein-coupled receptor (GPCR) narrowly expressed in immune cells and linked to cancers, substantially and statistically significantly boost levels of cytokines and reduce the population of a subset of T cells known as regulatory T cells (Tregs), both activities known to be important in cancer immunotherapy. Based on these findings, the compounds being advanced by Omeros hold potential advantages over both chimeric antigen receptor (CAR) T-cell therapy and checkpoint inhibitors, each highly touted immunotherapies in development for the treatment of multiple cancers. Part of its orphan GPCR program, Omeros believes that the company alone has identified compounds that inhibit GPR174, and Omeros is establishing a broad patent position directed to any GPR174 inhibitor for the treatment of cancer.

In assays with human peripheral blood mononuclear cells (PBMCs) evaluating T-cell proliferation and survival following T-cell stimulation, Omeros discovered that small-molecule GPR174 inhibitors increase, with statistical significance, the levels of cytokines interleukin 2 (IL-2) and interferon gamma (IFN- γ) multiple-fold and nearly doubled interleukin 10 (IL-10). Moreover, GPR174 inhibition statistically significantly reduced by approximately 40 percent the population of Tregs, a subset of T-cells elevated in a large number of cancers. Data from GPR174

inhibition in mouse PBMCs are consistent with the human PBMC findings. Importantly, the compound effects were not observed in PBMCs derived from mice genetically lacking GPR174, indicating that the robust Omeros compound effects are the result of “on-target” interaction with the orphan receptor.

These results demonstrate that GPR174 inhibition potentiates the activity of effector T cells, which produce cytokines and are known to be integral to combatting cancer. Also, reducing the level of Tregs is a key objective in cancer immunotherapy, and high levels of Tregs in solid tumors frequently correlates with poor patient outcomes. In addition, signaling and mechanistic studies support that GPR174 suppresses anti-tumor activity, and inhibitors of GPR174 are expected to counteract that detrimental suppression.

“The data from Omeros’ GPR174 program are exciting, as they may lead to a new approach to increase immune function through simultaneous modulation of multiple immune cell subsets,” stated Marc Gavin, Ph.D., Research Associate Member, Benaroya Research Institute. “GPR174 inhibition represents a wholly new mechanism in cancer immunotherapy, one that may offer the combined effects of cytokine stimulation and Treg reduction across a wide variety of cancers. This unique mechanism together with Omeros’ development of small-molecule inhibitors targeting GPR174 could provide meaningful benefits over other cancer immunotherapies and a significant advance for patients.”

Based on the collective data, small-molecule inhibitors of GPR174 could provide a significant advance in cancer immunotherapy with meaningful potential advantages over current cancer immunotherapies in development, including CAR-T cell therapy and checkpoint inhibitors. Small molecules, unlike antibodies, can be formulated for oral, intravenous, intralesional and topical delivery, addressing some of the administration and procedural limitations of other immunotherapies. Small-molecule compounds, because of their shorter half-life than antibodies, should not have the same safety concerns (e.g., acute, life-threatening immune reactions due to extended duration of drug activity) associated with CAR-T cell and checkpoint therapies. GPR174 inhibitors act on both CD4 (helper) and CD8 (cytotoxic) T-cells and should not rely on the presence of specific tumor cell-surface receptors to be effective as do checkpoint inhibitors. GPR174 inhibitors represent a class of agents that could treat a broad range of cancers – the primary mechanistic limitation of a GPR174 inhibitor is expected to be a cancer cell that is recognized by the body’s immune system as fully “self,” i.e., a cancer cell without mutation, which is quite rare.

“Omeros’ proprietary orphan GPCR program continues to generate new drug targets, and GPR174 is one of our current areas of focus,” stated Gregory A. Demopoulos, M.D., chairman and chief executive officer of Omeros Corporation. “The company’s development of GPR174 inhibitors and related target-based intellectual property position expands our therapeutic assets to oncology and, specifically, to the rapidly progressing and high-interest field of cancer immunotherapy.”

About Omeros' GPCR Program

Omeros uses its proprietary high-throughput CRA to identify small-molecule agonists and antagonists for orphan GPCRs, or GPCRs without known functionally active compounds (i.e., ligands), unlocking them to drug development. Omeros believes that it is the first to possess the capability to unlock orphan GPCRs in high-throughput, and that currently there is no other comparable technology. Omeros has screened a large number of orphan GPCRs against its small-molecule chemical libraries using its proprietary, high-throughput CRA technology. The CRA detects receptor antagonists, agonists and inverse agonists. Omeros has identified and confirmed sets of compounds that interact selectively with 54 of the 81 Class A orphan receptors linked to metabolic, cardiovascular and immunologic disorders, oncology, and disorders of the central nervous system. Omeros has also demonstrated that the CRA is effective in identifying ligands for Class B GPCRs.

GPCRs, which mediate key physiological processes in the body, are one of the most valuable families of drug targets. According to Insight Pharma Reports, GPCR-targeting drugs represent 30 to 40 percent of marketed pharmaceuticals. Examples include Claritin® (allergy), Zantac® (ulcers and reflux), OxyContin® (pain), Lopressor® (high blood pressure), Imitrex® (migraine headache), Reglan® (nausea) and Abilify® (schizophrenia, bipolar disease and depression) as well as all other antihistamines, opioids, alpha and beta blockers, and compounds acting through serotonin and dopamine receptors.

The industry focuses its GPCR drug discovery efforts mostly on non-sensory GPCRs. Of the 363 total non-sensory GPCRs, approximately 240 have known ligands with nearly half of those targeted either by marketed drugs (46 GPCRs) or by drugs in development (about 82 GPCRs). There are approximately 120 orphan GPCRs, which have no known ligands. Without a known ligand, drug development for a given receptor is extremely difficult.

About Omeros Corporation

Omeros is a biopharmaceutical company committed to discovering, developing and commercializing both small-molecule and protein therapeutics for large-market as well as orphan indications targeting inflammation, coagulopathies and disorders of the central nervous system. Part of its proprietary PharmacoSurgery® platform, the company's first drug product, OMIDRIA® (phenylephrine and ketorolac injection) 1% / 0.3%, was broadly launched in the U.S. in April 2015. OMIDRIA is the first and only FDA-approved drug (1) for use during cataract surgery or intraocular lens (IOL) replacement to maintain pupil size by preventing intraoperative miosis (pupil constriction) and to reduce postoperative ocular pain and (2) that contains an NSAID for intraocular use. In the European Union, the European Commission has approved OMIDRIA for use in cataract surgery and lens replacement procedures to maintain mydriasis (pupil dilation), prevent miosis (pupil constriction), and to reduce postoperative eye pain. Omeros has clinical-stage development programs focused on: complement-associated

thrombotic microangiopathies; complement-mediated glomerulonephropathies; Huntington's disease and cognitive impairment; and addictive and compulsive disorders. In addition, Omeros has a proprietary G protein-coupled receptor (GPCR) platform, which is making available an unprecedented number of new GPCR drug targets and corresponding compounds to the pharmaceutical industry for drug development, and a platform used to generate antibodies.

Forward-Looking Statements

This press release contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934, which are subject to the "safe harbor" created by those sections for such statements. All statements other than statements of historical fact are forward-looking statements, which are often indicated by terms such as "anticipate," "believe," "could," "estimate," "expect," "goal," "intend," "look forward to," "may," "plan," "potential," "predict," "project," "should," "will," "would" and similar expressions and variations thereof. Forward-looking statements are based on management's beliefs and assumptions and on information available to management only as of the date of this press release. Omeros' actual results could differ materially from those anticipated in these forward-looking statements for many reasons, including, without limitation, risks associated with product commercialization and commercial operations, unproven preclinical and clinical development activities, regulatory oversight, intellectual property claims, competitive developments, litigation, and the risks, uncertainties and other factors described under the heading "Risk Factors" in the company's Quarterly Report on Form 10-Q filed with the Securities and Exchange Commission on November 9, 2016. Given these risks, uncertainties and other factors, you should not place undue reliance on these forward-looking statements, and the company assumes no obligation to update these forward-looking statements, even if new information becomes available in the future.

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