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# CytoDyn Files for Breakthrough Therapy Designation with the FDA for the Use of Leronlimab for the Treatment of Metastatic Triple-Negative Breast Cancer

VANCOUVER, Washington, Jan. 13, 2020 (GLOBE NEWSWIRE) -- **CytoDyn Inc. (OTC.QB: CYDY)**, ("CytoDyn" or the "Company"), a late-stage biotechnology company developing leronlimab (PRO 140), a CCR5 antagonist with the potential for multiple therapeutic indications, announced today that the Company has filed for Breakthrough Therapy designation (BTD) with the U.S. Food and Drug Administration (FDA) for the use of leronlimab as an adjuvant therapy for the treatment of metastatic triple-negative breast cancer (mTNBC).

The BTD filing is based on data from the first patient in the Company's mTNBC Phase 1b/2 trial and an additional single-patient trial under an emergency investigational new drug (IND) protocol evaluating leronlimab for the treatment of HER2+ metastatic, stage 4, breast cancer (MBC).

Data from the first patient in the Phase 1b/2 trial showed the patient had no detectable circulating tumor cells (CTCs) or putative metastatic tumor cells in the peripheral blood and additional large reductions in CCR5 expression on cancer-associated cells at 11 weeks of treatment with leronlimab. This patient's data also demonstrated tumor shrinkage of >20% after just a few weeks of treatment. The data from the patient under the emergency IND protocol with HER2+ metastatic, stage 4, MBC showed no sign of new metastatic spots in the liver, lung and brain during the treatment with leronlimab.

"This strong data confirms the power of leronlimab as a CCR5 inhibitor for patients living with mTNBC, and is clearly replicating early animal study results that demonstrated 98% elimination of metastases," said Bruce Patterson, M.D., chief executive officer and founder of IncellDx, a diagnostic partner of CytoDyn, and an advisor to CytoDyn. "Our collective team of key opinion leaders believes that all patients with similar cancers in regards to CCR5 expression may also benefit from the use of leronlimab, including melanoma, brain, throat, lung, stomach, breast, ovarian, uterine, pancreatic, bladder, and thyroid cancer patients. We also believe the mechanism of action for leronlimab may have potential indications in autoimmune diseases such as multiple sclerosis, polymyolitis, Crohn's disease, inflammatory bowel syndrome and psoriasis."

Nader Pourhassan, Ph.D., president and chief executive officer of CytoDyn, added: "In the early stages of these clinical trials, we are seeing remarkable improvements in patients living with metastatic breast cancer, a deadly disease that requires imminent new treatment options. We now have several different types of cancer patients reaching out to us to be

treated with leronlimab under both the expanded access program, and the Right to Try Act. Currently, we have 4 patients enrolled (2 in the Phase 1b/2 mTNBC trial and 2 under the emergency IND protocol (expanded access program). Our thought leaders believe that leronlimab may have the potential to treat over 20 different cancer indications and at least 10 autoimmune diseases, including graft versus host disease (GvHD) and NASH. Based on the number of indications we intend to pursue, we believe we have one of the broadest platform technologies in biotech and are extremely excited to accelerate development of future indications. CytoDyn has been cleared by the FDA to proceed with its Phase 2 trials for both GvHD and NASH. Today's announcement ushers in a new phase in our corporate history, as we anticipate dramatically increasing the patient population we can help. We look forward to working with the FDA and continuing to provide additional data that further supports leronlimab as a potential treatment option for patients."

**About Breakthrough Therapy Designation (BTD)**
Breakthrough Therapy designation is a process designed to expedite the development and review of drugs that are intended to treat a serious condition and preliminary clinical evidence indicates that the drug may demonstrate substantial improvement over available therapy on a clinically significant endpoint(s). In addition, the breakthrough therapy should have a compelling scientific rationale and promising mechanism of action (MOA), such as targeting a molecular driver of disease.

If the BTD is granted, it will fall under one of three subcategories that (a) address a serious condition with poor outcomes for which there is no Standard of Care (SoC), (b) provide substantial efficacy improvement of a well characterized SoC for a serious condition with poor outcomes, or (c) provide substantial therapeutic index advantage over a well characterized SoC for a serious condition with poor outcomes. If a BTD is granted the possible outcomes are (a) conditional or full approval, (b) expedited development, (c) rolling submission, or (d) review shortened.

To determine whether the improvement over available therapy is substantial is a matter of judgment and depends on both the magnitude of the treatment effect, which could include duration of the effect, and the importance of the observed clinical outcome. In general, the preliminary clinical evidence should show a clear advantage over available therapy.
A breakthrough therapy is a drug:

- intended alone or in combination with one or more other drugs to treat a serious or life threatening disease or condition and

- preliminary clinical evidence indicates that the drug may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development.

In 2019 the FDA's Center for Drug Evaluation and Research (CDER) approved 29 of 48 novel drugs that used at least one expedited approval method.[6] Thirteen of these drugs approved originated from a Breakthrough Therapy designation which represents 27% of the drugs approved during the year.[6]

**About Triple-Negative Breast Cancer**
Triple-negative breast cancer (TNBC) is a type of breast cancer characterized by the

absence of the three most common types of receptors in the cancer tumor known to fuel most breast cancer growth–estrogen receptors (ER), progesterone receptors (PR) and the hormone epidermal growth factor receptor 2 (HER-2) gene.[1] TNBC cancer occurs in about 10 to 20 percent of diagnosed breast cancers and can be more aggressive and more likely to spread and recur.[2,3] Since the triple-negative tumor cells lack these receptors, common treatments for breast cancer such as hormone therapy and drugs that target estrogen, progesterone, and HER-2 are ineffective.[4] Currently, there are no targeted therapies approved to treat triple-negative breast cancer.[5]

**About Leronlimab (PRO 140)**
The U.S. Food and Drug Administration (FDA) has granted a Fast Track designation to CytoDyn for two potential indications of leronlimab for deadly diseases. The first as a combination therapy with HAART for HIV-infected patients and the second is for metastatic triple-negative breast cancer (mTNBC). Leronlimab is an investigational humanized IgG4 mAb that blocks CCR5, a cellular receptor that is important in HIV infection, tumor metastases, and other diseases including NASH. Leronlimab has successfully completed nine clinical trials in over 800 people, including meeting its primary endpoints in a pivotal Phase 3 trial (leronlimab in combination with standard anti-retroviral therapies in HIV-infected treatment-experienced patients).

In the setting of HIV/AIDS, leronlimab is a viral-entry inhibitor; it masks CCR5, thus protecting healthy T cells from viral infection by blocking the predominant HIV (R5) subtype from entering those cells. Leronlimab has been the subject of nine clinical trials, each of which demonstrated that leronlimab can significantly reduce or control HIV viral load in humans. The leronlimab antibody appears to be a powerful antiviral agent leading to potentially fewer side effects and less frequent dosing requirements compared with daily drug therapies currently in use.

In the setting of cancer, research has shown that CCR5 plays an important role in tumor invasion and metastasis. Increased CCR5 expression is an indicator of disease status in several cancers. Published studies have shown that blocking CCR5 can reduce tumor metastases in laboratory and animal models of aggressive breast and prostate cancer. Leronlimab reduced human breast cancer metastasis by more than 98% in a murine xenograft model. CytoDyn is therefore conducting a Phase 2 human clinical trial in metastatic triple-negative breast cancer and was granted Fast Track designation in May 2019. Additional research is being conducted with leronlimab in the setting of cancer and NASH with plans to conduct additional clinical studies when appropriate.

The CCR5 receptor appears to play a central role in modulating immune cell trafficking to sites of inflammation and may be important in the development of acute graft-versus-host disease (GvHD) and other inflammatory conditions. Clinical studies by others further support the concept that blocking CCR5 using a chemical inhibitor can reduce the clinical impact of acute GvHD without significantly affecting the engraftment of transplanted bone marrow stem cells. CytoDyn is currently conducting a Phase 2 clinical study with leronlimab to further support the concept that the CCR5 receptor on engrafted cells is critical for the development of acute GvHD and that blocking this receptor from recognizing certain immune signaling molecules is a viable approach to mitigating acute GvHD. The FDA has granted “orphan drug” designation to leronlimab for the prevention of graft-versus-host disease (GvHD).

**About CytoDyn**
CytoDyn is a biotechnology company developing innovative treatments for multiple therapeutic indications based on leronlimab, a novel humanized monoclonal antibody targeting the CCR5 receptor. CCR5 appears to play a key role in the ability of HIV to enter and infect healthy T-cells. The CCR5 receptor also appears to be implicated in tumor metastasis and in immune-mediated illnesses, such as graft-vs.-host disease (GvHD) and NASH. CytoDyn has successfully completed a Phase 3 pivotal trial with leronlimab in combination with standard anti-retroviral therapies in HIV-infected treatment-experienced patients. CytoDyn plans to seek FDA approval for leronlimab in combination therapy and plans to complete the filing of a Biologics License Application (BLA) in the first quarter of 2020 for that indication. CytoDyn is also conducting a Phase 3 investigative trial with leronlimab (PRO 140) as a once-weekly monotherapy for HIV-infected patients and, plans to initiate a registration-directed study of leronlimab monotherapy indication, which if successful, could support a label extension. Clinical results to date from multiple trials have shown that leronlimab (PRO 140) can significantly reduce viral burden in people infected with HIV with no reported drug-related serious adverse events (SAEs). Moreover, results from a Phase 2b/3 clinical trial demonstrated that leronlimab monotherapy can prevent viral escape in HIV-infected patients, with some patients on leronlimab monotherapy remaining virally suppressed for more than five years. CytoDyn is also conducting a Phase 2 trial to evaluate leronlimab for the prevention of GvHD and has received clearance to initiate a clinical trial with leronlimab in metastatic triple-negative breast cancer. More information is at www.cytodyn.com.

**Forward-Looking Statements**
This press release contains certain forward-looking statements that involve risks, uncertainties and assumptions that are difficult to predict. Words and expressions reflecting optimism, satisfaction or disappointment with current prospects, as well as words such as “believes,” “hopes,” “intends,” “estimates,” “expects,” “projects,” “plans,” “anticipates” and variations thereof, or the use of future tense, identify forward-looking statements, but their absence does not mean that a statement is not forward-looking. The Company’s forward-looking statements are not guarantees of performance, and actual results could vary materially from those contained in or expressed by such statements due to risks and uncertainties including: (i) the sufficiency of the Company’s cash position, (ii) the Company’s ability to raise additional capital to fund its operations, (iii) the Company’s ability to meet its debt obligations, if any, (iv) the Company’s ability to enter into partnership or licensing arrangements with third parties, (v) the Company’s ability to identify patients to enroll in its clinical trials in a timely fashion, (vi) the Company’s ability to achieve approval of a marketable product, (vii) the design, implementation and conduct of the Company’s clinical trials, (viii) the results of the Company’s clinical trials, including the possibility of unfavorable clinical trial results, (ix) the market for, and marketability of, any product that is approved, (x) the existence or development of vaccines, drugs, or other treatments that are viewed by medical professionals or patients as superior to the Company’s products, (xi) regulatory initiatives, compliance with governmental regulations and the regulatory approval process, (xii) general economic and business conditions, (xiii) changes in foreign, political, and social conditions, and (xiv) various other matters, many of which are beyond the Company’s control. The Company urges investors to consider specifically the various risk factors identified in its most recent Form 10-K, and any risk factors or cautionary statements included in any subsequent Form 10-Q or Form 8-K, filed with the Securities and Exchange Commission. Except as required by law, the Company does not undertake any responsibility

to update any forward-looking statements to take into account events or circumstances that occur after the date of this press release.

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1. Triple Negative Breast Cancer. (n.d.). Retrieved from https://www.nationalbreastcancer.org/triple-negative-breast-cancer.
2. Triple Negative Breast Cancer. (n.d.). Retrieved from https://www.nationalbreastcancer.org/triple-negative-breast-cancer.
3. Triple Negative Breast Cancer. (n.d.). Retrieved from https://www.nationalbreastcancer.org/triple-negative-breast-cancer.
4. Triple Negative Breast Cancer. (n.d.). Retrieved from https://www.nationalbreastcancer.org/triple-negative-breast-cancer.
5. Bernstein, L. (2019, February 25). Triple-Negative Breast Cancer: Symptoms, Causes, Treatment, Recurrence. Retrieved from https://www.webmd.com/breast-cancer/triple-negative-breast-cancer#1.
6. Breakthrough Therapy. Retrieved from https://www.fda.gov/media/133911/download

Source: CytoDyn Inc.