News Release

Puma Biotechnology Receives U.S. FDA Approval of Supplemental New Drug Application for Neratinib to Treat HER2-Positive Metastatic Breast Cancer

LOS ANGELES, Calif., Feb. 26, 2020 – Puma Biotechnology, Inc. (NASDAQ: PBYI), a biopharmaceutical company, announced that the U.S. Food and Drug Administration (FDA) approved a supplemental New Drug Application (sNDA) for neratinib in combination with capecitabine for the treatment of adult patients with advanced or metastatic HER2-positive breast cancer who have received two or more prior anti-HER2-based regimens in the metastatic setting. The sNDA approval was based on results of the Phase III NALA trial, a randomized controlled trial of neratinib plus capecitabine in patients with HER2-positive metastatic breast cancer who have received two or more prior anti-HER2-based regimens.

"Although there have been many new treatment options for patients with HER2-positive breast cancer, patients still need additional treatment options once they progress" said Alan H. Auerbach, Chief Executive Officer and President of Puma. "Based on the results of our NALA data, we believe NERLYNX® could be a promising therapeutic opportunity for these patients."

Adam M. Brufsky, MD, Ph.D., of Magee-Womens Hospital and the Hillman Cancer Center at the University of Pittsburgh Medical Center, added, "Together with the NALA investigators around the world, I am pleased to see the FDA approval of NERLYNX for the treatment of advanced HER2-positive metastatic breast cancer. This approval is based on data from the NALA trial, which we presented at ASCO last year, demonstrating that neratinib in combination with capecitabine offers a significant improvement over currently available therapies in this heavily pretreated patient population and can be added to NERLYNX's established role in the treatment of early breast cancer."

In the United States, NERLYNX is approved for the extended adjuvant treatment of adult patients with early stage HER2-positive breast cancer, following adjuvant trastuzumab-based therapy. In Europe, NERLYNX is approved for the extended adjuvant treatment of adult patients with early stage hormone receptor-positive HER2-overexpressed/amplified breast cancer and who are less than one year from completion of prior adjuvant trastuzumab-based therapy. NERLYNX has also received approval for use in the extended adjuvant setting in Canada, Australia, Hong Kong, Singapore and Argentina.

In collaboration with its global licensing partners, Puma expects to seek approval of this second indication in all countries where NERLYNX is currently approved.

About NALA

Efficacy of neratinib in combination with capecitabine was investigated in NALA (NCT01808573), a randomized, multicenter, open-label, Phase III clinical trial in 621 patients with metastatic HER2-positive breast cancer who received two or more prior anti-HER2-based regimens in the metastatic setting. Patients were randomized (1:1) to receive neratinib 240 mg orally once daily on days 1-21 in combination with capecitabine 750 mg/m2 given orally twice daily on days 1-14 for each 21-day cycle (n=307) or lapatinib 1250 mg orally once daily on days 1-21 in combination with capecitabine 1000 mg/m2 given orally twice daily on days 1-14 for each 21-day cycle (n=314). Patients were treated until disease progression or unacceptable toxicity. The trial was conducted globally at sites in North America, Europe, Israel, Asia-Pacific and South America.

The main efficacy outcome measures were progression-free survival (PFS) as assessed by a blinded independent central review per RECIST v1.1 and overall survival (OS). Key secondary outcome measures were objective response rate (ORR) and duration of response (DOR). Treatment with neratinib in combination with capecitabine resulted in a statistically significant improvement in PFS (Hazard Ratio 0.76; 95% CI: 0.63, 0.93; p=0.0059) compared to treatment with lapatinib plus capecitabine. The PFS rate at 12 months was 29% (95% CI: 23, 35) for patients who received neratinib plus capecitabine vs 15% (95% CI: 10, 20) for patients who received lapatinib plus capecitabine; the PFS rate at 24 months was 12% (95% CI: 7, 18) vs 3% (95% CI: 1, 8), respectively.

Median OS was 21 months (95% CI: 17.7, 23.8) for patients who received neratinib in combination with capecitabine compared to 18.7 months (95% CI: 15.5, 21.2) for patients who received lapatinib in combination plus capecitabine (HR 0.88; 95% CI: 0.72, 1.07; p=0.2086). The ORR was 32.8% (95% CI: 27.1, 38.9) vs 26.7% (95% CI: 21.5, 32.4), respectively. Median duration of response was 8.5 months (95% CI: 5.6, 11.2) vs 5.6 months (95% CI: 4.2, 6.4), respectively.

The most common adverse reactions of any grade (>5%) in the neratinib plus capecitabine arm were diarrhea, nausea, vomiting, decreased appetite, constipation, fatigue/asthenia, weight decreased, dizziness, back pain, arthralgia, urinary tract infection, upper respiratory tract infection, abdominal distention, renal impairment, and muscle spasms. The most frequently reported Grade 3 or 4 adverse reactions were diarrhea, nausea, vomiting, fatigue and decreased appetite.

The recommended neratinib dose for advanced or metastatic breast cancer is 240 mg (6 tablets) given orally once daily with food on days 1-21 of a 21-day cycle plus capecitabine (750 mg/m2 given orally twice daily) on days 1-14 of a 21-day cycle until disease progression or unacceptable toxicities.

About HER2-Positive Breast Cancer

Approximately 20% to 25% of breast cancer tumors over-express the HER2 protein. HER2-positive breast cancer is often more aggressive than other types of breast cancer, increasing the risk of disease progression and death. Although research has shown that trastuzumab can reduce the risk of early stage HER2-positive breast cancer returning after surgery, up to 25% of patients treated with trastuzumab experience recurrence.

IMPORTANT SAFETY INFORMATION

NERLYNX® (neratinib) tablets, for oral use

INDICATIONS AND USAGE: NERLYNX is a kinase inhibitor indicated:

- As a single agent, for the extended adjuvant treatment of adult patients with early-stage HER2-positive breast cancer, to follow adjuvant trastuzumab-based therapy.

- In combination with capecitabine, for the treatment of adult patients with advanced or metastatic HER2-positive breast cancer, who have received two or more prior anti-HER2 based regimens in the metastatic setting.

CONTRAINDICATIONS: None

WARNINGS AND PRECAUTIONS:

- **Diarrhea:** Aggressively manage diarrhea. If diarrhea occurs despite recommended prophylaxis, treat with additional antidiarrheals, fluids, and electrolytes as clinically indicated. Withhold NERLYNX

in patients experiencing severe and/or persistent diarrhea. Permanently discontinue NERLYNX in patients experiencing Grade 4 diarrhea or Grade ≥ 2 diarrhea that occurs after maximal dose reduction.

- **Hepatotoxicity:** Monitor liver function tests monthly for the first 3 months of treatment, then every 3 months while on treatment and as clinically indicated. Withhold NERLYNX in patients experiencing Grade 3 liver abnormalities and permanently discontinue NERLYNX in patients experiencing Grade 4 liver abnormalities.

- **Embryo-Fetal Toxicity:** NERLYNX can cause fetal harm. Advise patients of potential risk to a fetus and to use effective contraception.

ADVERSE REACTIONS:

The most common adverse reactions (reported in ≥ 5% of patients) were as follows:

- NERLYNX as a single agent: Diarrhea, nausea, abdominal pain, fatigue, vomiting, rash, stomatitis, decreased appetite, muscle spasms, dyspepsia, AST or ALT increased, nail disorder, dry skin, abdominal distention, epistaxis, weight decreased, , and urinary tract infection.
- NERLYNX in combination with capecitabine: Diarrhea, nausea, vomiting, decreased appetite, constipation, fatigue/asthenia, weight decreased, dizziness, back pain, arthralgia, urinary tract infection, upper respiratory tract infection, abdominal distention, renal impairment, and muscle spasms.

To report SUSPECTED ADVERSE REACTIONS, contact Puma Biotechnology, Inc. at 1-844-NERLYNX (1-844-637-5969) and www.NERLYNX.com or FDA at 1-800-FDA-1088 or *www.fda.gov/medwatch*.

DRUG INTERACTIONS:

- Gastric acid reducing agents: Avoid concomitant use with proton pump inhibitors. When patients require gastric acid reducing agents, use an H_2-receptor antagonist or antacid. Separate NERLYNX by at least 3 hours with antacids. Separate NERLYNX by at least 2 hours before or 10 hours after H_2-receptor antagonists.
- Strong CYP3A4 inhibitors: Avoid concomitant use.
- Moderate CYP3A4 and P-glycoprotein (P-gp) dual inhibitors: Avoid concomitant use.
- Strong or moderate CYP3A4 inducers: Avoid concomitant use.
- P-glycoprotein (P-gp) substrates: Monitor for adverse reactions of narrow therapeutic agents that are P-gp substrates when used concomitantly with NERLYNX.

USE IN SPECIFIC POPULATIONS:

• **Lactation:** Advise women not to breastfeed.

Please see Full Prescribing Information for additional safety information.

To help ensure patients have access to NERLYNX, Puma has implemented the Puma Patient Lynx support program to assist patients and healthcare providers with reimbursement support and referrals to resources that can help with financial assistance. More information on the Puma Patient Lynx program can be found at www.NERLYNX.com or 1-855-816-5421.

About Puma Biotechnology

Puma Biotechnology, Inc. is a biopharmaceutical company with a focus on the development and commercialization of innovative products to enhance cancer care. Puma in-licenses the global development and commercialization rights to PB272 (neratinib, oral), PB272 (neratinib, intravenous) and PB357. Neratinib, oral was approved by the U.S. Food and Drug Administration in 2017 for the extended adjuvant treatment of adult patients with early stage HER2-overexpressed/amplified breast cancer, following adjuvant trastuzumab-based therapy and is marketed in the United States as NERLYNX® (neratinib) tablets. NERLYNX was granted marketing authorization by the European Commission in 2018 for the extended adjuvant treatment of adult patients with early stage hormone receptor-positive HER2-overexpressed/amplified breast cancer and who are less than one year from completion of prior adjuvant trastuzumab-based therapy. NERLYNX is a registered trademark of Puma Biotechnology, Inc.

Forward-Looking Statements

This news release includes forward-looking statements. All forward-looking statements involve risks and uncertainties that could cause actual results to differ materially from the anticipated results and expectations expressed in these forward-looking statements. These statements are based on current expectations, forecasts and assumptions, and actual outcomes and results could differ materially from these statements due to a number of factors, which include, but are not limited to, the risk factors disclosed in the periodic and current reports filed by Puma with the Securities and Exchange Commission from time to time, including, once filed, Puma's Annual Report on Form 10-K for the year ended December 31, 2019. Readers are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date hereof. Puma assumes no obligation to update these forward-looking statements, except as required by law.

Contacts

Alan H. Auerbach or Mariann Ohanesian, Puma Biotechnology, Inc., +1 424 248 6500
info@pumabiotechnology.com
ir@pumabiotechnology.com

David Schull or Maggie Beller, Russo Partners, +1 212 845 4200
david.schull@russopartnersllc.com
maggie.beller@russopartnersllc.com

#####