News Release

Puma Biotechnology Presents Data from the Phase III ExteNET Trial in Early Stage HER2-Positive Breast Cancer Patients at the Virtual 2021 ASCO Annual Meeting

Results show improved outcomes in overall survival in patients with HER2-positive early stage breast cancer who received ≥ 11 months of treatment with neratinib

LOS ANGELES, Calif., June 4, 2021 – Puma Biotechnology, Inc. (NASDAQ: PBYI), a biopharmaceutical company, presented results from the Phase III ExteNET trial assessing the impact of neratinib treatment duration on overall survival (OS) in patients with early stage HER2-positive breast cancer at the virtual 2021 ASCO Annual Meeting. The presentation, entitled "Association between treatment duration and overall survival in early-stage HER2+ breast cancer patients receiving extended adjuvant therapy with neratinib in the ExteNET trial," is included in the **Breast Cancer—Local/Regional/Adjuvant** Poster Session (#540).

ExteNET was a multicenter, randomized, double-blind, Phase III trial of 2,840 HER2-positive early stage breast cancer patients who received neratinib after neoadjuvant and/or adjuvant therapy with chemotherapy and trastuzumab-based treatment. Patients were randomly assigned to one year of treatment with either oral neratinib 240 mg/day or placebo.

The poster presented by Professor Beverly Moy summarizes descriptive analyses evaluating the impact of duration of neratinib on clinical outcomes including invasive disease-free survival (iDFS) and distant disease-free survival (DDFS) at 5 years, and overall survival (OS). The analyses were performed in the intention-to-treat (ITT) population and subgroups of clinical interest including the HR+/≤1 year population (patients with hormone receptor-positive (HR+) disease who initiated neratinib within 1 year after prior trastuzumab) and within that subgroup, in the no pathologic complete response (pCR) group (patients from the HR+/≤1-year population with residual disease post-neoadjuvant therapy). Efficacy outcomes in patients who completed neratinib therapy were compared with placebo (all randomized patients). Completion of therapy was defined as patients who were on treatment for ≥ 11 months. Patients who ended neratinib therapy because of disease recurrence before 11 months were also considered with those who 'completed therapy' to reduce guarantee-time bias.

Among patients who completed ≥ 11 months of neratinib therapy, OS (median follow-up of 8.0 years) was improved versus placebo in each of the 3 groups. In the intention-to-treat (ITT) population, 872 of 1420 patients (61.4%) in the neratinib arm completed ≥ 11 months of treatment; OS rates were 92.2% vs 90.2% in the neratinib vs placebo arms, respectively, corresponding to a 2.0% improvement (HR 0.78; 95% confidence interval (CI) 0.58-1.04). In the HR+/≤1 year patient population, 402 of 670 patients (60%) in the neratinib arm completed ≥ 11 months of treatment; OS rates were 95.2% vs 89.4% in the neratinib vs placebo arms, respectively, corresponding to a 5.8% improvement (HR 0.49; 95% CI 0.29–0.78). In the HR+/ <1 year, no pCR group, 92 of 131 patients (70.2%) in the neratinib group completed ≥ 11 months of treatment; OS rates were 95.4% vs 82.2% in the neratinib vs placebo arm, respectively, corresponding to a 13.2% improvement (HR 0.29; 95% CI 0.10–0.68).

Neratinib also numerically improved 5-year iDFS and DDFS outcomes versus placebo in all groups: 3.3% and 2.0%, respectively, in the ITT group of patients who completed therapy; 7.4% and 5.9%, respectively, in the HR+/≤1 year subgroup who completed therapy; and 11.9% and 10.9%, respectively,

in the HR+/≤1 year no pCR subgroup who completed therapy.

Importantly, completion ≥ 11 months of therapy was associated with more pronounced improvements in all endpoints evaluated. In the ITT population, the HR for OS was reduced from 0.95 to 0.78 upon completion of therapy. In the HR+/≤1-year population, the HR for OS was reduced from 0.79 to 0.49 upon completion of therapy. In the HR+/≤1-year no pCR group, the HR for OS was reduced from 0.47 to 0.29 upon completion of therapy. Consistent improvements upon completion of therapy were also seen for iDFS and DDFS.

"These descriptive findings suggest that overall survival in patients with early stage HER2-positive breast cancer patients is improved upon completion of neratinib extended adjuvant therapy. This improvement trend was observed across all groups and reflected in the iDFS measurements as well, thereby showing that a complete course of neratinib in patients with early stage HER2-positive breast cancer who are at a high risk of relapse can be beneficial," said Beverly Moy, MD, MPH, Clinical Director of the Breast Oncology Program at Massachusetts General Hospital.

Alan H. Auerbach, Chief Executive Officer and President of Puma, added, "These data show that adherence to neratinib in the extended adjuvant setting lowers the risk of recurrence and improves overall survival. These findings are consistent with previously presented data and add to the growing body of evidence supporting the use of neratinib in HER2-positive early stage breast cancer."

About HER2-Positive Breast Cancer

Up to 20% of patients with breast cancer tumors over-express the HER2 protein (HER2-positive disease) and in the ExteNET study, 57% of patients were found to have tumors that were hormone-receptor positive. 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 recurring, up to 25% of patients treated with trastuzumab experience recurrence within 10 years, the majority of which are metastatic recurrences.

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. In February 2020, NERLYNX was also approved by the FDA 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. 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.

Further information about Puma Biotechnology may be found at www.pumabiotechnology.com.

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) 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.

Forward-Looking Statements

This press release contains forward-looking statements, that involve risks and uncertainties that could cause Puma's 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, any adverse impact on Puma's business or the global economy and financial markets, generally, from the global COVID-19 pandemic, and the risk factors disclosed in the periodic and current reports filed by Puma with the Securities and Exchange Commission from time to time, including Puma's Annual Report on Form 10-K for the year ended December 31, 2020. 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.

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