Nerlynx™ (neratinib) – New drug approval

- On July 17, 2017, the FDA announced the approval of Puma Biotechnology's Nerlynx (neratinib) for the extended adjuvant treatment of adult patients with early stage human epidermal growth factor receptor 2 (HER2)-overexpressed/amplified breast cancer, to follow adjuvant Herceptin® (trastuzumab) based therapy.

- According to the National Cancer Institute, there will be an estimated 252,710 new cases of breast cancer in 2017. Breast cancer accounts for 15% of all new cases of 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.

- Nerlynx is a tyrosine kinase inhibitor that irreversibly binds to epidermal growth factor receptor (EGFR), HER2, and HER4, ultimately causing antitumor activity in EGFR and/or HER2 expressing carcinoma cell lines.

- The safety and efficacy of Nerlynx was demonstrated in a placebo-controlled study of 2,840 women with early-stage HER2-positive breast cancer and within two years of completing adjuvant Herceptin treatment. The major efficacy outcome measure was invasive disease free survival (iDFS) defined as the time between the date of randomization to the first occurrence of local or distant recurrence or death from any cause, with 2 years and 28 days of follow-up.

    - iDFS was 94.2% in patients treated with Nerlynx vs. 91.9% in those receiving placebo (hazard ratio = 0.66; 95% CI: 0.49, 0.90, p = 0.008).
    - Median duration of treatment was 11.6 months in the Nerlynx arm vs. 11.8 months in the placebo arm.
- Warnings and precautions of Nerlynx include diarrhea, hepatotoxicity, and embryo-fetal toxicity.

- The most common adverse reactions (> 5%) with Nerlynx use were diarrhea, nausea, abdominal pain, fatigue, vomiting, rash, stomatitis, decreased appetite, muscle spasms, dyspepsia, aspartate aminotransferase or alanine aminotransferase increase, nail disorder, dry skin, abdominal distention, weight decreased and urinary tract infection.

- The recommended dose of Nerlynx is 240 mg (six tablets) taken orally once daily with food for one year.

    - Antidiarrheal prophylaxis with loperamide is recommended during the first 2 cycles (56 days) of treatment and should be initiated with the first dose of Nerlynx. Refer to the Nerlynx drug label for loperamide prophylaxis dosing recommendations.
    - Additional antidiarrheal agents may be required to manage diarrhea in patients with loperamide refractory diarrhea. Nerlynx dose interruptions and dose reductions may also be required to manage diarrhea.

- Puma Biotechnology plans to launch Nerlynx as 40 mg tablets in September 2017.