NEWS RELEASE

Merck Announces US Launch of ONTRUZANT® (trastuzumab-dttb), a Biosimilar of Herceptin® (trastuzumab)

4/15/2020

KENILWORTH, N.J.--(BUSINESS WIRE)-- Merck (NYSE: MRK), known as MSD outside the United States and Canada, today announced the U.S. launch of ONTRUZANT (trastuzumab-dttb), as a biosimilar of the reference biologic medicine Herceptin. ONTRUZANT is available in both 150 mg single-dose vials and 420 mg multiple-dose vials.

ONTRUZANT will be introduced in the U.S. at a list price (wholesaler acquisition cost) of approximately $1,325 for the 150 mg single-dose vial and $3,709 for the 420 mg multiple-dose vial (prices are rounded), representing a 15% discount to the current list price of Herceptin. Wholesaler acquisition costs do not include discounts to payers, providers, distributors and other purchasing organizations.

ONTRUZANT is indicated for adjuvant treatment of HER2 overexpressing node positive or node negative (ER/PR negative or with one high risk feature) breast cancer as part of a treatment regimen consisting of doxorubicin, cyclophosphamide, and either paclitaxel or docetaxel; as part of a treatment regimen with docetaxel and carboplatin; as a single agent following multi-modality anthracycline based therapy. Select patients for therapy based on an FDA-approved companion diagnostic for a trastuzumab product. Serious and sometimes fatal side effects have been reported with trastuzumab products. Subclinical and clinical cardiac failure have been reported. The incidence and severity were highest in patients receiving trastuzumab with anthracycline-containing regimens. Discontinue ONTRUZANT treatment for cardiomyopathy. Administration of ONTRUZANT can result in serious and fatal infusion reactions and pulmonary toxicity. Discontinue ONTRUZANT for anaphylaxis, angioedema, interstitial pneumonitis or acute respiratory distress syndrome. Exposure to ONTRUZANT during pregnancy can result in oligohydramnios, in some cases complicated by pulmonary hypoplasia and neonatal death. Exacerbation of

chemotherapy-induced neutropenia can also occur. Detection of HER2 protein overexpression is necessary for selection of patients appropriate for ONTRUZANT therapy.

ONTRUZANT is being launched in the U.S. by Merck as part of a development and commercialization agreement with Samsung Bioepis. Under terms of the agreement, Samsung Bioepis is responsible for preclinical and clinical development, process development and manufacturing, clinical trials and regulatory registration. Merck will be responsible for all commercialization activities for products approved in its partnered territories, including the U.S.

ONTRUZANT was approved by the FDA in January 2019 based on the review of Samsung Bioepis' comprehensive data package, which included extensive structural and functional analytical data, nonclinical and clinical pharmacokinetic data, and a comparative clinical study demonstrating that ONTRUZANT is highly similar to its reference product, Herceptin, in terms of the safety, purity and potency of the product.

On Feb. 5, 2020, Merck announced that it intends to spin-off products from its Women's Health, trusted Legacy Brands and Biosimilars businesses, including ONTRUZANT, into a new, independent, publicly-traded company. Merck will continue to fully support the commercialization of ONTRUZANT until the spinoff, which is intended to take place in the first half of 2021, at which time ONTRUZANT will become a product of the new company.

ONTRUZANT Indications and Usage

Adjuvant Breast Cancer

ONTRUZANT is indicated for adjuvant treatment of HER2-overexpressing node-positive or node negative (ER/PR-negative or with one high-risk feature) breast cancer:

- As part of a treatment regimen containing doxorubicin, cyclophosphamide, and either paclitaxel or docetaxel
- As part of a treatment regimen with docetaxel and carboplatin
- As a single agent following multimodality anthracycline-based therapy

Select patients for therapy based on an FDA-approved companion diagnostic for a trastuzumab product.

Metastatic Breast Cancer

ONTRUZANT is indicated:

- In combination with paclitaxel for the first-line treatment of HER2-overexpressing metastatic breast cancer
- As a single agent for treatment of HER2-overexpressing breast cancer in patients who have received one or more chemotherapy regimens for metastatic disease

Select patients for therapy based on an FDA-approved companion diagnostic for a trastuzumab product.

Metastatic Gastric Cancer

ONTRUZANT is indicated, in combination with cisplatin and capecitabine or 5-fluorouracil, for the treatment of patients with HER2 overexpressing metastatic gastric or gastroesophageal junction adenocarcinoma who have not received prior treatment for metastatic disease.

Select patients for therapy based on an FDA-approved companion diagnostic for a trastuzumab product.

Selected Safety Information

Cardiomyopathy

- Administration of trastuzumab products can result in subclinical and clinical cardiac failure. The incidence and severity was highest in patients receiving a trastuzumab product with anthracycline-containing chemotherapy regimens. In a pivotal adjuvant breast cancer trial, one patient who developed congestive heart failure (CHF) died of cardiomyopathy.
- Evaluate left ventricular function in all patients prior to and during treatment with ONTRUZANT. Discontinue ONTRUZANT treatment in patients receiving adjuvant therapy and withhold ONTRUZANT in patients with metastatic disease for clinically significant decrease in left ventricular function.

Infusion Reactions; Pulmonary Toxicity

- Administration of trastuzumab products can result in serious and fatal infusion reactions and pulmonary toxicity. Symptoms usually occur during or within 24 hours of administration. Interrupt ONTRUZANT infusion for dyspnea or clinically significant hypotension. Monitor patients until symptoms completely resolve. Discontinue ONTRUZANT for anaphylaxis, angioedema, interstitial pneumonitis, or acute respiratory distress syndrome.

Embryo-Fetal Toxicity

- Exposure to trastuzumab products during pregnancy can result in oligohydramnios and oligohydramnios sequence manifesting as pulmonary hypoplasia, skeletal abnormalities, and neonatal death. Advise patients of these risks and the need for effective contraception.

Warnings and Precautions

Cardiomyopathy

Trastuzumab products can cause left ventricular cardiac dysfunction, arrhythmias, hypertension, disabling cardiac failure, cardiomyopathy, and cardiac death. Trastuzumab products can also cause asymptomatic decline in left ventricular ejection fraction (LVEF).

There is a 4 to 6-fold increase in the incidence of symptomatic myocardial dysfunction among patients receiving trastuzumab products as a single agent or in combination therapy compared with those not receiving trastuzumab products. The highest absolute incidence occurs when a trastuzumab product is administered with an anthracycline.

Withhold ONTRUZANT for ≥ 16% absolute decrease in LVEF from pre-treatment values or an LVEF value below institutional limits of normal and ≥ 10% absolute decrease in LVEF from pretreatment values. The safety of continuation or resumption of ONTRUZANT in patients with trastuzumab product-induced left ventricular cardiac dysfunction has not been studied.

Patients who receive anthracycline after stopping ONTRUZANT may also be at increased risk of cardiac dysfunction.

Cardiac Monitoring:Conduct thorough cardiac assessment, including history, physical examination, and determination of LVEF by echocardiogram or MUGA scan. The following schedule is recommended:

- Baseline LVEF measurement immediately prior to initiation of ONTRUZANT
- LVEF measurements every 3 months during and upon completion of ONTRUZANT
- Repeat LVEF measurement at 4-week intervals if ONTRUZANT is withheld for significant left ventricular cardiac dysfunction.
- LVEF measurements every 6 months for at least 2 years following completion of ONTRUZANT as a component of adjuvant therapy.

Infusion Reactions

Infusion reactions consist of a symptom complex characterized by fever and chills, and on occasion included nausea, vomiting, pain (in some cases at tumor sites), headache, dizziness, dyspnea, hypotension, rash, and asthenia.

In post-marketing reports, serious and fatal infusion reactions have been reported. Severe reactions, which include bronchospasm, anaphylaxis, angioedema, hypoxia, and severe hypotension were usually reported during or immediately following the initial infusion. However, the onset and clinical course were variable, including progressive worsening, initial improvement followed by clinical deterioration or delayed post-infusion events with rapid clinical deterioration. For fatal events, death occurred within hours to days following a serious infusion

reaction.

Interrupt ONTRUZANT infusion in all patients experiencing dyspnea, clinically significant hypotension, and intervention of medical therapy administered (which may include epinephrine, corticosteroids, diphenhydramine, bronchodilators, and oxygen). Patients should be evaluated and carefully monitored until complete resolution of signs and symptoms. Permanent discontinuation should be strongly considered in all patients with severe infusion reactions.

There are no data regarding the most appropriate method of identification of patients who may safely be retreated with trastuzumab products after experiencing a severe infusion reaction. Prior to resumption of trastuzumab infusion, the majority of patients who experienced a severe infusion reaction were pre-medicated with antihistamines and/or corticosteroids. While some patients tolerated trastuzumab infusions, others had recurrent severe infusion reactions despite pre-medications.

Embryo-fetal Toxicity

Trastuzumab products can cause fetal harm when administered to a pregnant woman. In post-marketing reports, use of trastuzumab during pregnancy resulted in cases of oligohydramnios and oligohydramnios sequence manifesting as pulmonary hypoplasia, skeletal abnormalities, and neonatal death.

Verify the pregnancy status of females of reproductive potential prior to the initiation of ONTRUZANT. Advise pregnant women and females of reproductive potential that exposure to ONTRUZANT during pregnancy or within 7 months prior to conception can result in fetal harm. Advise females of reproductive potential to use effective contraception during treatment and for 7 months following the last dose of ONTRUZANT.

Pulmonary Toxicity

Trastuzumab product use can result in serious and fatal pulmonary toxicity. Pulmonary toxicity includes dyspnea, interstitial pneumonitis, pulmonary infiltrates, pleural effusions, non-cardiogenic pulmonary edema, pulmonary insufficiency and hypoxia, acute respiratory distress syndrome, and pulmonary fibrosis. Such events can occur as sequelae of infusion. Patients with symptomatic intrinsic lung disease or with extensive tumor involvement of the lungs, resulting in dyspnea at rest, appear to have more severe toxicity.

Exacerbation of Chemotherapy-induced Neutropenia

In randomized, controlled clinical trials, the per-patient incidences of NCI-CTC Grade 3 to 4 neutropenia and of febrile neutropenia were higher in patients receiving trastuzumab in combination with myelosuppressive

chemotherapy as compared to those who received chemotherapy alone. The incidence of septic death was similar among patients who received trastuzumab and those who did not.

Drug Interactions

Patients who receive anthracycline after stopping trastuzumab products may be at increased risk of cardiac dysfunction because of trastuzumab's long washout period based on population PK Analysis. If possible, physicians should avoid anthracycline-based therapy for up to 7 months after stopping trastuzumab products. If anthracyclines are used, the patient's cardiac function should be monitored carefully.

Adverse Reactions

The most common adverse reactions in patients receiving trastuzumab products in the adjuvant and metastatic breast cancer setting are fever, chills, nausea, vomiting, infusion reactions, diarrhea, infections, increased cough, headache, fatigue, dyspnea, rash, neutropenia, anemia, and myalgia. Adverse reactions requiring interruption or discontinuation of trastuzumab product treatment include CHF, significant decline in left ventricular cardiac function, severe infusion reactions, and pulmonary toxicity.

In the metastatic gastric cancer setting, the most common adverse reactions (≥ 10%) that were increased (≥ 5% difference) in the patients receiving trastuzumab as compared to patients receiving chemotherapy alone were neutropenia, diarrhea, fatigue, anemia, stomatitis, weight loss, upper respiratory tract infections, fever, thrombocytopenia, mucosal inflammation, nasopharyngitis, and dysgeusia. The most common adverse reactions which resulted in discontinuation of trastuzumab treatment in the absence of disease progression were infection, diarrhea, and febrile neutropenia.

Use in Specific Populations

Lactation

There is no information regarding the presence of trastuzumab products in human milk, the effects on the breastfed infant, or the effects on milk production. Published data suggest human IgG is present in human milk but does not enter the neonatal and infant circulation in substantial amounts. Consider the developmental and health benefits of breastfeeding along with the mother's clinical need for ONTRUZANT treatment and any potential adverse effects on the breastfed child from ONTRUZANT or from the underlying maternal condition. This consideration should also take into account the trastuzumab product wash out period of 7 months.

Pediatric Use

The safety and effectiveness of trastuzumab products in pediatric patients have not been established.

Geriatric Use

Trastuzumab has been studied in patients who were 65 years of age or over in the adjuvant and metastatic breast cancer treatment settings. The risk of cardiac dysfunction was increased in geriatric patients as compared to younger patients in both those receiving treatment for metastatic disease, or adjuvant therapy.

Please see **Prescribing Information** for ONTRUZANT (trastuzumab-dttb) including Boxed Warning about cardiomyopathy, infusion reactions (pulmonary toxicity), and embryo-fetal toxicity at **https://www.merck.com/product/usa/pi_circulars/o/ontruzant/ontruzant_pi.pdf**.

About Merck

For more than 125 years, Merck, known as MSD outside of the United States and Canada, has been inventing for life, bringing forward medicines and vaccines for many of the world's most challenging diseases in pursuit of our mission to save and improve lives. We demonstrate our commitment to patients and population health by increasing access to health care through far-reaching policies, programs and partnerships. Today, Merck continues to be at the forefront of research to prevent and treat diseases that threaten people and animals – including cancer, infectious diseases such as HIV and Ebola, and emerging animal diseases – as we aspire to be the premier research-intensive biopharmaceutical company in the world. For more information, visit **www.merck.com** and connect with us on **Twitter**, **Facebook**, **Instagram**, **YouTube** and **LinkedIn**.

Forward-Looking Statement of Merck & Co., Inc., Kenilworth, N.J., USA

This news release of Merck & Co., Inc., Kenilworth, N.J., USA (the "company") includes "forward-looking statements" within the meaning of the safe harbor provisions of the U.S. Private Securities Litigation Reform Act of 1995. These statements are based upon the current beliefs and expectations of the company's management and are subject to significant risks and uncertainties. There can be no guarantees with respect to pipeline products that the products will receive the necessary regulatory approvals or that they will prove to be commercially successful. If underlying assumptions prove inaccurate or risks or uncertainties materialize, actual results may differ materially from those set forth in the forward-looking statements.

Risks and uncertainties include but are not limited to, general industry conditions and competition; general economic factors, including interest rate and currency exchange rate fluctuations; the impact of the recent global outbreak of novel coronavirus disease (COVID-19); the impact of pharmaceutical industry regulation and health care legislation in the United States and internationally; global trends toward health care cost containment;

technological advances, new products and patents attained by competitors; challenges inherent in new product development, including obtaining regulatory approval; the company's ability to accurately predict future market conditions; manufacturing difficulties or delays; financial instability of international economies and sovereign risk; dependence on the effectiveness of the company's patents and other protections for innovative products; and the exposure to litigation, including patent litigation, and/or regulatory actions.

The company undertakes no obligation to publicly update any forward-looking statement, whether as a result of new information, future events or otherwise. Additional factors that could cause results to differ materially from those described in the forward-looking statements can be found in the company's 2019 Annual Report on Form 10-K and the company's other filings with the Securities and Exchange Commission (SEC) available at the SEC's Internet site (**www.sec.gov**).

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Source: Merck