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Legal Notices

The information in this slide deck is current as of December 17, 2020, unless otherwise noted, and is qualified in its entirety by reference to MacroGenics' Annual, Quarterly and Current Reports filed with the SEC. MacroGenics undertakes no obligation to update any of the information herein.

Cautionary Note on Forward-Looking Statements

Any statements in these materials about future expectations, plans and prospects for MacroGenics ("Company"), including statements about the Company's strategy, future operations, clinical development of the Company's therapeutic candidates, commercial prospects of or product revenues from MARGENZA, milestone or opt-in payments from the Company's collaborators, the Company's anticipated milestones and future expectations and plans and prospects for the Company and other statements containing the words "subject to", "believe", "anticipate", "plan", "expect", "intend", "estimate", "project", may", "will", "should", "would", "could", "can", the negatives thereof, variations thereon and similar expressions, or by discussions of strategy constitute forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. Actual results may differ materially from those indicated by such forward-looking statements as a result of various important factors, including: risks that MARGENZA revenue, expenses and costs may not be as expected, risks relating to MARGENZA market acceptance, competition, reimbursement and regulatory actions, the uncertainties inherent in the initiation and enrollment of future clinical trials, expectations of expanding ongoing clinical trials, availability and timing of data from ongoing clinical trials, expectations for the timing and steps required in the regulatory review process, expectations for regulatory approvals, the impact of competitive products, our ability to enter into agreements with strategic partners and other matters that could affect the availability or commercial potential of the Company's product candidates, business or economic disruptions due to catastrophes or other events, including natural disasters or public health crises such as the novel coronavirus (referred to as COVID-19), and other risks described in the Company's filings with the Securities and Exchange Commission. In addition, the forward-looking statements included in these materials represent the Company's views only as of the date hereof. The Company anticipates that subsequent events and developments will cause the Company's views to change. However, while the Company may elect to update these forward-looking statements at some point in the future, the Company specifically disclaims any obligation to do so, except as may be required by law. These forward-looking statements should not be relied upon as representing the Company's views as of any date subsequent to the date hereof.

Trademarks

DART, TRIDENT, MacroGenics, the MacroGenics logo and MARGENZA are trademarks or registered trademarks of MacroGenics, Inc.

Investigational Agents

The safety and efficacy of investigational agents and/or investigational uses of approved products have not been established.

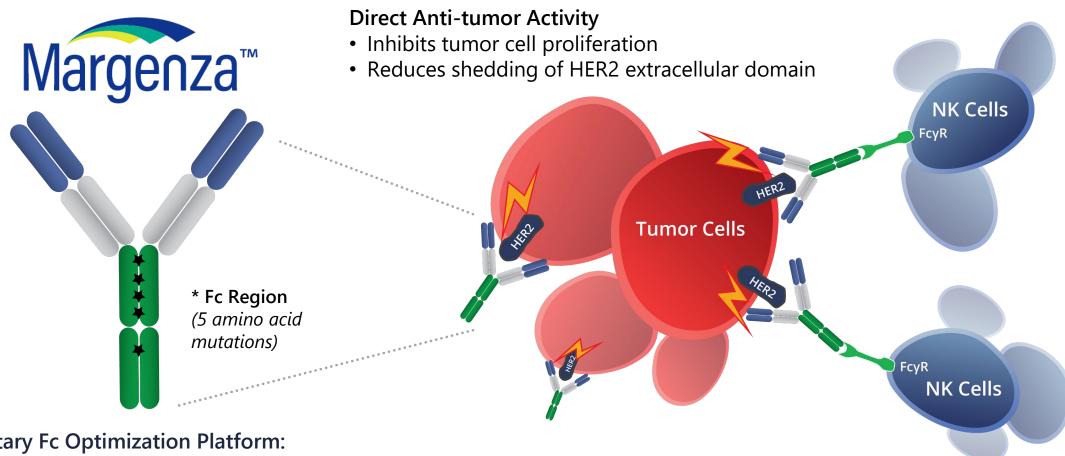
2020 MACROGENICS



MARGENZA is a HER2/neu receptor antagonist indicated, in combination with chemotherapy, for the treatment of adult patients with metastatic HER2-positive breast cancer who have received two or more prior anti-HER2 regimens, at least one of which was for metastatic disease.

See Important Safety Information, Including Boxed Warning on Slide 14

Designed to Increase Anti-tumor Immune Responses Through Fc-Engineering



Proprietary Fc Optimization Platform:

- Increased binding to CD16A (activating)
- Decreased binding to CD32B (inhibitory)

Antibody-Dependent Cellular Cytotoxicity (ADCC)

- Immune cell-mediated anti-tumor activity
- Greater in vitro ADCC and NK cell activation

MARGENZA Approval Based on Results of SOPHIA

Improved PFS vs. Herceptin®, both with chemotherapy, in pretreated HER2+ metastatic breast cancer

Efficacy

- 24% Reduction in risk of disease progression or death (HR=0.76, p=0.033)
- mPFS favoring MARGENZA
 - MARGENZA = 5.8 months (95% CI: 5.5, 7.0)
 - Herceptin = 4.9 months (95% CI: 4.2, 5.6)
- Overall Response Rate
 - -MARGENZA = 22% (95% CI: 17, 27)
 - Herceptin = 16% (95% CI: 12, 20)

See Important Safety Information, Including Boxed Warning on Slide 14

Final Overall Survival analysis expected in 2H 2021

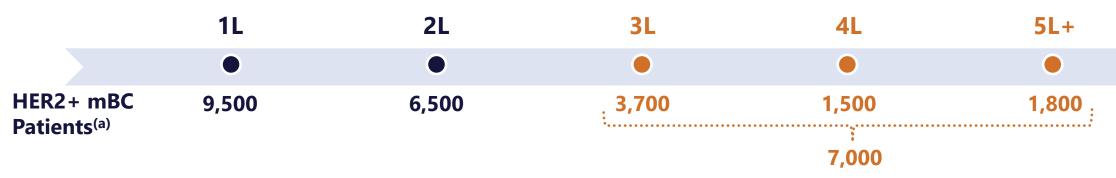
Safety

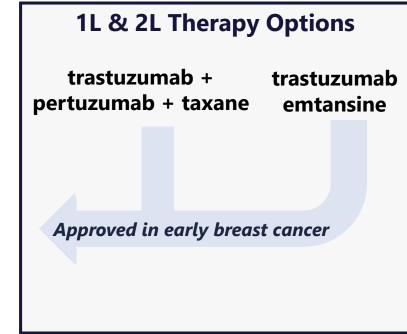
- Boxed Warning for left ventricular dysfunction and embryo-fetal toxicity
- Infusion reactions in 13% of patients treated with MARGENZA
 - Almost all Grade 1 or Grade 2; 1.5% Grade 3
 - Resolved within 24 hours with routine supportive care
- Most common adverse drug reactions (≥20%) with MARGENZA in combination with chemotherapy:
 - Fatigue/asthenia (57%), nausea (33%), diarrhea (25%), and vomiting (21%)

December 17, 2020 Macroo

Rapidly Evolving HER2+ Metastatic Breast Cancer Treatment Landscape

Oncologists will consider specific patient attributes for sequencing of therapies





3L+Therapy Options

Recently Approved Therapies:

- MARGENZA
- tucatinib
- trastuzumab deruxtecan
- neratinib

Older Options:

- trastuzumab combinations
- lapatinib combinations

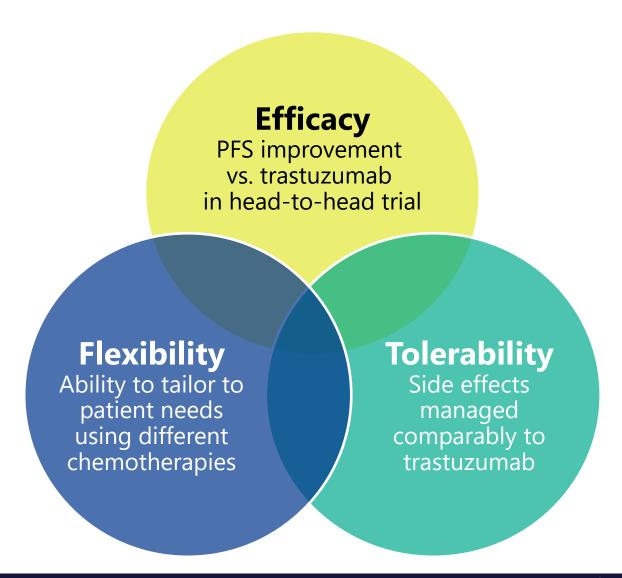
(a) MacroGenics' estimate for U.S. market based on publicly available data.

MARGENZA with Chemotherapy in Treatment of Pretreated HER2+ mBC

Majority of patients will experience disease progression

Some patients may not be able to tolerate certain therapies

MARGENZA may offer...



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Leveraging EVERSANA's Expertise to Support Commercialization



- Full integrated launch & commercialization engine
- End-to-end commercial strategy, services and optimized data & analytics



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Fully Aligned & Engaged with EVERSANA to Support Anticipated March Launch

Innovative risk-sharing structure provides balance of flexibility and control



- Books sales and controls decision-making
- Leads execution of all development and manufacturing activities
- Maintains flexibility to pursue future licensing collaborations



- Provides access to its broad spectrum of commercialization services
- Receives revenue share payments (predefined % of net sales, capped at 125% of cumulative service fees)

- Post-approval commercialization costs are shared equally
- Co-exclusive rights to commercialize MARGENZA in U.S.
- 5-Year term following FDA approval, subject to predefined termination provisions

Partnership Enables MacroGenics to Execute Strategic Launch Imperatives



Establish MARGENZA's role in treatment paradigm



Ensure appropriate and affordable access for patients



Account for changing dynamics resulting from COVID-19



Preserve anticipated cash runway into 2023

MARGENZA's Commercialization Anticipated in March 2021



Product Approved December 16, 2020

- ✓ Launch "Now Approved" website
- ✓ Establish distribution network
- ✓ Recruit field teams
- ✓ Prepare for commercialization



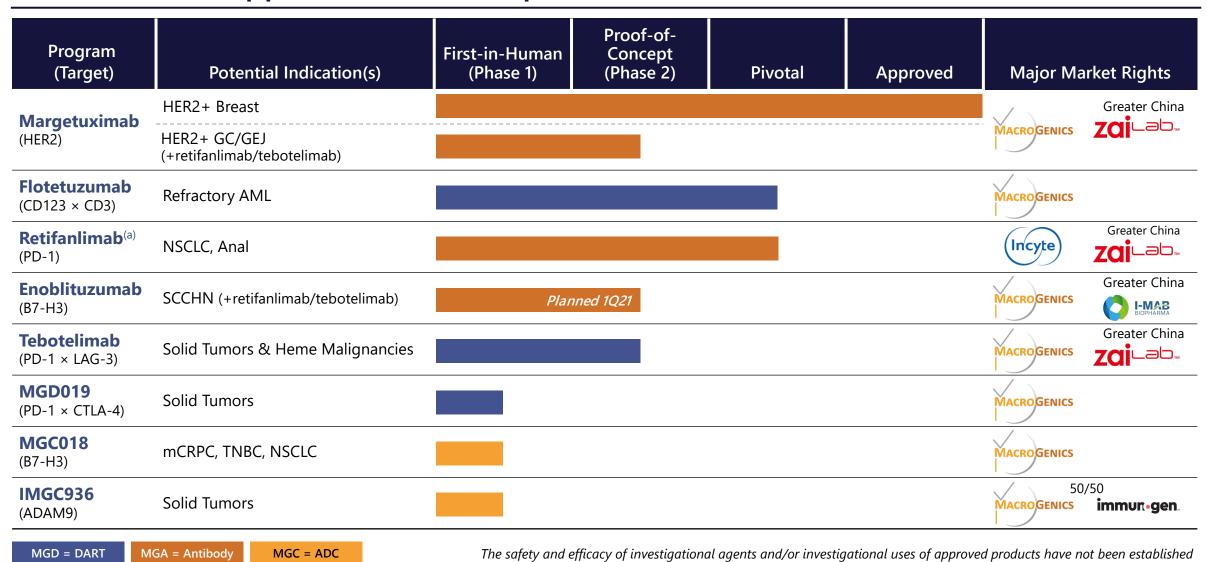
Commercial Launch March 2021

- ✓ Ready to distribute product
- ✓ Commercial and medical field teams in place
- ✓ Patient access services available
- ✓ Branded campaign with heavy digital and virtual engagement

Evaluating MARGENZA Across HER2+ Diseases

2024+ 2021-2023 2020 **Potential Future Studies Ongoing Studies** • Earlier line metastatic ✓ Initial Approval 1L Gastric cancer breast cancer in Neo-adjuvant breast cancer IST Pretreated HER2+ metastatic F-carriers • Tebotelimab combo in HER2+ breast cancer (w/chemo) Additional combo solid tumors opportunities

Resourced to Support Innovative Pipeline into 2023



⁽a) MacroGenics retains rights to develop its pipeline assets in combination w/retifanlimab and to manufacture a portion of global clinical and commercial supply needs of retifanlimab.

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Important Safety Information

WARNING: LEFT VENTRICULAR DYSFUNCTION AND EMBRYO-FETAL TOXICITY

- **Left Ventricular Dysfunction:** MARGENZA may lead to reductions in left ventricular ejection fraction (LVEF). Evaluate cardiac function prior to and during treatment. Discontinue MARGENZA treatment for a confirmed clinically significant decrease in left ventricular function.
- Embryo-Fetal Toxicity: Exposure to MARGENZA during pregnancy can cause embryo-fetal harm. Advise patients of the risk and need for effective contraception.

WARNINGS & PRECAUTIONS:

Left Ventricular Dysfunction

- Left ventricular cardiac dysfunction can occur with MARGENZA.
- MARGENZA has not been studied in patients with a pretreatment LVEF value of <50%, a prior history of myocardial infarction or unstable angina within 6 months, or congestive heart failure NYHA class II-IV.
- Withhold MARGENZA for ≥16% absolute decrease in LVEF from pretreatment values or LVEF below institutional limits of normal (or 50% if no limits available) and ≥10% absolute decrease in LVEF from pretreatment values.
- Permanently discontinue MARGENZA if LVEF decline persists greater than 8 weeks, or dosing is interrupted more than 3 times due to LVEF decline.
- Evaluate cardiac function within 4 weeks prior to and every 3 months during and upon completion of treatment. Conduct thorough cardiac assessment, including history, physical examination, and determination of LVEF by echocardiogram or MUGA scan.
- Monitor cardiac function every 4 weeks if MARGENZA is withheld for significant left ventricular cardiac dysfunction.

Embryo-Fetal Toxicity

- Based on findings in animals and mechanism of action, MARGENZA can cause fetal harm when administered to a pregnant woman. Post-marketing studies of other HER-2 directed antibodies during pregnancy resulted in cases of oligohydramnios and oligohydramnios sequence manifesting as pulmonary hypoplasia, skeletal abnormalities, and neonatal death.
- Verify pregnancy status of women of reproductive potential prior to initiation of MARGENZA.
- Advise pregnant women and women of reproductive potential that exposure to MARGENZA during pregnancy or within 4 months prior to conception can result in fetal harm.
- Advise women of reproductive potential to use effective contraception during treatment and for 4 months following the last dose of MARGENZA.

Infusion-Related Reactions (IRRs)

- MARGENZA can cause IRRs. Symptoms may include fever, chills, arthralgia, cough, dizziness, fatigue, nausea, vomiting, headache, diaphoresis, tachycardia, hypotension, pruritus, rash, urticaria, and dyspnea.
- Monitor patients during and after MARGENZA infusion. Have medications and emergency equipment to treat IRRs available for immediate use.
- In patients experiencing mild or moderate IRRs, decrease rate of infusion and consider premedications, including antihistamines, corticosteroids, and antipyretics. Monitor patients until symptoms completely resolve.
- Interrupt MARGENZA infusion in patients experiencing dyspnea or clinically significant hypotension and intervene with supportive medical therapy as needed. Permanently discontinue MARGENZA in all patients with severe or life-threatening IRRs.

MOST COMMON ADVERSE REACTIONS:

The most common adverse drug reactions (≥10%) with MARGENZA in combination with chemotherapy are fatigue/asthenia, nausea, diarrhea, vomiting, constipation, headache, pyrexia, alopecia, abdominal pain, peripheral neuropathy, arthralgia/myalgia, cough, decreased appetite, dyspnea, infusion-related reactions, palmar-plantar erythrodysesthesia, and extremity pain.

You may report side effects to the FDA at (800) FDA-1088 or www.fda.gov/medwatch_or to MacroGenics at (844)-MED-MGNX (844-633-6469).

For full Prescribing Information, including Boxed Warning, go to www.margenza.com

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