PROTEASOME INHIBITION REMAINS A CORNERSTONE OF MULTIPLE MYELOMA TREATMENT¹⁻⁵

TAKEDA ONCOLOGY HAS ADVANCED THE MULTIPLE MYELOMA TREATMENT LANDSCAPE WITH 2 INNOVATIVE PROTEASOME INHIBITORS

MULTIPLE MYELOMA TREATMENT STRATEGIES ARE EVOLVING

- Proteasome inhibition has been a standard of care for the treatment of multiple myeloma for more than 15 years¹
- Proteasome inhibitor (PI)-based triplet regimens have demonstrated superior efficacy vs doublet regimens^{3,5}
- Continuous treatment with a PI-based regimen is associated with clinical benefits, including for patients with high-risk cytogenetics^{3,6,7}
- However, many patients who have had 1 prior therapy receive injectable PIs for only 4-7 months^{8,9}

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Oral ixazomib, lenalidomide, and dexamethasone for multiple myeloma

Moreau P, Masszi T, Grzasko N, et al; for TOURMALINE-MM1 Study Group. *N Engl J Med*. 2016;374(17):1621-1634.



Feasibility of long-term proteasome inhibition in multiple myeloma by *in*-class transition from bortezomib to ixazomib

Manda S, Yimer HA, Noga SJ, et al. *Clin Lymphoma Myeloma Leuk*. Preprint posted online July 6, 2020. doi:10.1016/j.clml.2020.06.024

VELCADE[®] (bortezomib) is indicated for the treatment of adult patients with multiple myeloma. NINLARO[®] (ixazomib) is indicated in combination with lenalidomide and dexamethasone for the treatment of patients with multiple myeloma who have received at least one prior therapy.

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NINLARO and VELCADE are distributed and marketed by Takeda.

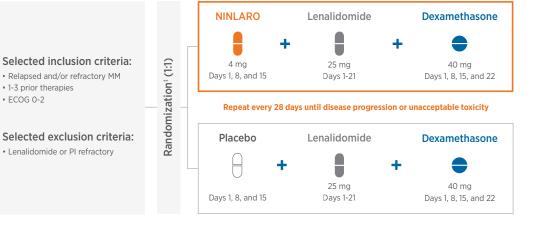
Please see Important Safety Information for VELCADE and NINLARO throughout and accompanying VELCADE (bortezomib) full <u>Prescribing Information</u> and NINLARO (ixazomib) full <u>Prescribing Information</u>.

MM1

TOURMALINE-MM1 evaluated long-term* treatment with the all-oral NINLARO[®] (ixazomib) regimen^{3,10,11}

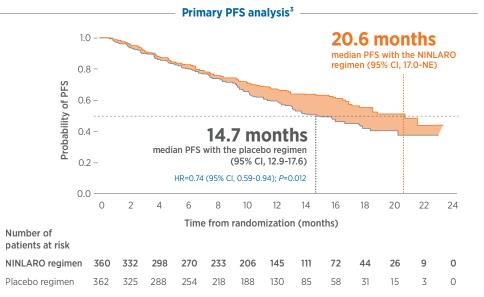
A global, phase 3, randomized, double-blind, placebo-controlled study of patients with relapsed and/or refractory multiple myeloma (N=722)³

- The primary endpoint of PFS, according to 2011 IMWG criteria, was assessed every 4 weeks until disease progression by a blinded IRC and was based on central lab results
- Key secondary endpoints included OS and OS in del(17p)³
- Other secondary endpoints included ORR, PFS in patients with high-risk cytogenetics,⁺ and safety³



69% OF PATIENTS WERE PREVIOUSLY TREATED WITH VELCADE® (bortezomib)

The NINLARO regimen is the only all-oral PI-based triplet approved for treatment to disease progression or unacceptable toxicity^{10,11}



Extended median PFS by ~6 months vs the placebo regimen³

 The NINLARO regimen extended median PFS by ~6 months vs the placebo regimen. Median PFS: 20.6 vs 14.7 months for the NINLARO and placebo regimens, respectively; HR=0.74 (95% CI, 0.59-0.94); P=0.012³

*Defined as treatment to disease progression or unacceptable toxicity.

[†]Defined as patients with del(17p), t(4;14), and/or t(14;16).

Stratification: 1 vs 2 or 3 prior therapies; PI exposed vs PI naive; and ISS stage I or II vs III.

ECOG=Eastern Cooperative Oncology Group; IMWG=International Myeloma Working Group; IRC=independent review committee; ISS=International Staging System; MM=multiple myeloma; NE=not evaluable; ORR=overall response rate; OS=overall survival; PFS=progression-free survival.

IMPORTANT SAFETY INFORMATION FOR NINLARO

WARNINGS AND PRECAUTIONS

- **Thrombocytopenia** has been reported with NINLARO. During treatment, monitor platelet counts at least monthly, and consider more frequent monitoring during the first three cycles. Manage thrombocytopenia with dose modifications and platelet transfusions as per standard medical guidelines. Adjust dosing as needed. Platelet nadirs typically occurred between Days 14-21 of each 28-day cycle and recovered to baseline by the start of the next cycle.
- Gastrointestinal Toxicities, including diarrhea, constipation, nausea and vomiting, were reported with NINLARO and may occasionally require the use of antidiarrheal and antiemetic medications, and supportive care. Diarrhea resulted in the discontinuation of one or more of the three drugs in 1% of patients in the NINLARO regimen and < 1% of patients in the placebo regimen. Adjust dosing for severe symptoms.

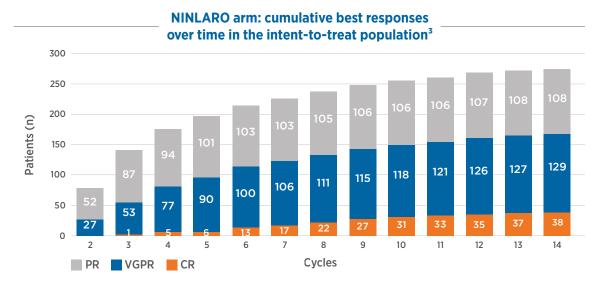
Please see additional Important Safety Information throughout and accompanying NINLARO (ixazomib) full <u>Prescribing Information</u>.

MM1

Responses with the all-oral NINLARO[®] (ixazomib) regimen deepened with continued treatment^{3,10,11}

Depth of response

- Depth of response for the NINLARO vs placebo regimens,* respectively: ORR†: 78% vs 72%; CR: 12% vs 7%; VGPR+CR: 48% vs 39%; PR: 30% vs 33%.
- Median time to initial response on the NINLARO regimen was 1.1 months vs 1.9 months on the placebo regimen



• Responses improved over time in both arms of the study³

 Study limitation: The study was not powered to detect differences in response rates between arms

The all-oral NINLARO regimen demonstrated a safety profile amenable to treatment to disease progression^{10,11}

Discontinuation rates were comparable between the NINLARO and placebo regimens

Discontinuation rates of the entire regimen due to ARs



of the NINLARO and placebo regimens, respectively¹²

Dose tolerability **80%** of patients continued at the starting dose of NINLARO without dose reduction¹²

The most common ARs (\geq 20%) in the NINLARO regimen and greater than the placebo regimen, respectively, were diarrhea (42%, 36%), constipation (34%, 25%), thrombocytopenia (78%, 54%; pooled from adverse events and laboratory data), peripheral neuropathy (28%, 21%), nausea (26%, 21%), peripheral edema (25%, 18%), vomiting (22%, 11%), and back pain (21%, 16%). Serious ARs reported in \geq 2% of patients included thrombocytopenia (2%) and diarrhea (2%).

*The NINLARO regimen included NINLARO+lenalidomide+dexamethasone. The placebo regimen included placebo+lenalidomide+dexamethasone. †ORR=CR+VGPR+PR.

AR=adverse reaction; CR=complete response; PR=partial response; VGPR=very good partial response.

NINLARO WARNINGS AND PRECAUTIONS (cont'd)

- **Peripheral Neuropathy** (predominantly sensory) was reported with NINLARO. The most commonly reported reaction was peripheral sensory neuropathy (19% and 14% in the NINLARO and placebo regimens, respectively). Peripheral motor neuropathy was not commonly reported in either regimen (< 1%). Peripheral neuropathy resulted in discontinuation of one or more of the three drugs in 1% of patients in both regimens. Monitor patients for symptoms of peripheral neuropathy and adjust dosing as needed.
- Peripheral Edema was reported with NINLARO. Monitor for fluid retention. Investigate for underlying causes when appropriate and provide supportive care as necessary. Adjust dosing of dexamethasone per its prescribing information or NINLARO for Grade 3 or 4 symptoms.
- Cutaneous Reactions: Rash, most commonly maculo-papular and macular rash, was reported with NINLARO. Rash resulted in discontinuation of one or more of the three drugs in < 1% of patients in both regimens. Manage rash with supportive care or with dose modification.
- **Thrombotic Microangiopathy:** Cases, sometimes fatal, of thrombotic microangiopathy, including thrombotic thrombocytopenic purpura/hemolytic uremic syndrome (TTP/HUS), have been reported in patients who received NINLARO. Monitor for signs and symptoms of TTP/HUS. If the diagnosis is suspected, stop NINLARO and evaluate. If the diagnosis of TTP/HUS is excluded, consider restarting NINLARO. The safety of reinitiating NINLARO therapy in patients previously experiencing TTP/HUS is not known.

Please see additional Important Safety Information throughout and accompanying NINLARO (ixazomib) full <u>Prescribing Information</u>.

US MM-6

Feasibility of long-term proteasome inhibition in multiple myeloma by *in*-class transition from bortezomib to ixazomib

US MM-6 is an ongoing US community-based, real-world, open-label, single-arm, phase 4 study in patients with newly diagnosed multiple myeloma who are transplant ineligible or for whom transplant would be delayed \geq 24 months and who are receiving first-line VELCADE[®] (bortezomib)-based induction¹³



- This study included real-world patients who are often underrepresented in clinical trials because of eligibility criteria
- 44% of patients were aged ≥75 years, 15% were black or African American, 10% were Hispanic/Latino, 29% had creatinine clearance <60 mL/min, and 99% had any concurrent medical condition
- 85% of patients received VRD, 13% received VCD, and 2% received other (VD; VR) induction regimens at the time of *in*-class transition to the NINLARO regimen
- The primary endpoint is 2-year PFS, from the first administration of the NINLARO regimen
- Study limitation: Study is an open-label trial lacking a comparator arm, which may limit interpretation of the results

Preliminary results based on the first 84 patients enrolled in the study (at a median follow-up of 8 months)¹³

86% PRELIMINARY 12-MONTH PFS RATE (95% CI, 73-93) BOTH FROM THE START OF VELCADE-BASED INDUCTION AND FROM THE START OF TREATMENT WITH THE NINLARO® (ixazomib) REGIMEN[†]

Preliminary safety was consistent with previous NINLARO studies¹³

*20 mg for patients aged >75 years.

⁺PFS data from US MM-6, including in patients with high-risk cytogenetics, were immature. PN=peripheral neuropathy; VCD=bortezomib, cyclophosphamide, dexamethasone; VD=bortezomib, dexamethasone; VR=bortezomib, lenalidomide; VRD=bortezomib, lenalidomide, dexamethasone.

NINLARO WARNINGS AND PRECAUTIONS (cont'd)

- **Hepatotoxicity** has been reported with NINLARO. Drug-induced liver injury, hepatocellular injury, hepatic steatosis, hepatitis cholestatic and hepatotoxicity have each been reported in < 1% of patients treated with NINLARO. Events of liver impairment have been reported (6% in the NINLARO regimen and 5% in the placebo regimen). Monitor hepatic enzymes regularly during treatment and adjust dosing as needed.
- **Embryo-fetal Toxicity:** NINLARO can cause fetal harm. Women should be advised of the potential risk to a fetus, to avoid becoming pregnant, and to use contraception during treatment and for an additional 90 days after the final dose of NINLARO. Women using hormonal contraceptives should also use a barrier method of contraception.

ADVERSE REACTIONS

The most common adverse reactions (\geq 20%) in the NINLARO regimen and greater than the placebo regimen, respectively, were diarrhea (42%, 36%), constipation (34%, 25%), thrombocytopenia (78%, 54%; pooled from adverse events and laboratory data), peripheral neuropathy (28%, 21%), nausea (26%, 21%), peripheral edema (25%, 18%), vomiting (22%, 11%), and back pain (21%, 16%). Serious adverse reactions reported in \geq 2% of patients included thrombocytopenia (2%) and diarrhea (2%).

DRUG INTERACTIONS: Avoid concomitant administration of NINLARO with strong CYP3A inducers.

SPECIAL POPULATIONS

- **Hepatic Impairment:** Reduce the NINLARO starting dose to 3 mg in patients with moderate or severe hepatic impairment.
- **Renal Impairment:** Reduce the NINLARO starting dose to 3 mg in patients with severe renal impairment or end-stage renal disease requiring dialysis. NINLARO is not dialyzable.
- Lactation: Advise nursing women not to breastfeed during treatment with NINLARO and for 90 days after the last dose.

INDICATION AND IMPORTANT SAFETY INFORMATION FOR VELCADE® (bortezomib) FOR INJECTION

INDICATION: VELCADE (bortezomib) is indicated for the treatment of adult patients with multiple myeloma.

DOSAGE AND ADMINISTRATION: VELCADE is for subcutaneous (SC) or intravenous (IV) administration only. Because each route of administration has a different reconstituted concentration, caution should be used when calculating the volume to be administered.

CONTRAINDICATIONS

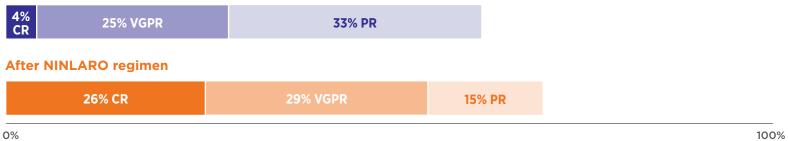
- VELCADE is contraindicated in patients with hypersensitivity (not including local reactions) to bortezomib, boron, or mannitol. Reactions have included anaphylactic reactions.
- VELCADE is contraindicated for intrathecal administration. Fatal events have occurred with intrathecal administration of VELCADE.

Please see Important Safety Information for VELCADE and NINLARO throughout and accompanying VELCADE (bortezomib) full <u>Prescribing Information</u> and NINLARO (ixazomib) full <u>Prescribing Information</u>.

US MM-6

ORRs were 62% after VELCADE[®] (bortezomib)-based induction and 70% after treatment with the NINLARO[®] (ixazomib) regimen* (N=84)¹³⁺

After VELCADE-based induction



Mean duration of continuous PI therapy at data cutoff[‡] was 10.1 months¹³



*The NINLARO regimen included NINLARO+lenalidomide+dexamethasone. †ORR=CR+VGPR+PR. ¹As of November 18, 2019.

VELCADE WARNINGS AND PRECAUTIONS

- **Peripheral neuropathy**, including severe cases, may occur. Patients with preexisting symptoms may experience worsening peripheral neuropathy (including ≥Grade 3). Patients should be monitored for symptoms and managed with dose modification or discontinuation. Starting VELCADE subcutaneously may be considered for patients with preexisting or at high risk of peripheral neuropathy.
- Hypotension: Patients with a history of syncope, patients receiving medications known to be associated with hypotension, and patients who are dehydrated may be at increased risk of hypotension. Management may include adjustment of antihypertensive medications, hydration, and administration of mineralocorticoids and/or sympathomimetics.
- Cardiac toxicity, including acute development or exacerbation of congestive heart failure and new onset of decreased left ventricular ejection fraction, has occurred. Isolated cases of QT-interval prolongation have been reported. Patients with risk factors for, or existing, heart disease should be frequently monitored.
- **Pulmonary toxicity:** Acute respiratory distress syndrome (ARDS) and acute diffuse infiltrative pulmonary disease of unknown etiology have occurred, sometimes fatal. Pulmonary hypertension, in the absence of left heart failure or significant pulmonary disease, has been reported. In the event of new or worsening cardiopulmonary symptoms, consider interrupting VELCADE until a prompt and comprehensive diagnostic evaluation is conducted.
- Posterior Reversible Encephalopathy Syndrome (PRES) has occurred. Consider MRI imaging for onset of visual or neurological symptoms; discontinue VELCADE if suspected. The safety of reinitiating VELCADE therapy in patients previously experiencing PRES is not known.
- Gastrointestinal toxicity, including nausea, diarrhea, constipation, and vomiting, has occurred and may require use of antiemetic and antidiarrheal medications or fluid and electrolyte replacement. Ileus can occur. Interrupt VELCADE for severe symptoms.
- Thrombocytopenia/Neutropenia that follow a cyclical pattern with nadirs occurring following the last dose of each cycle and typically recovering prior to initiation of the subsequent cycle have occurred. Complete blood counts should be monitored frequently during treatment. Measure platelet counts prior to each dose of VELCADE. Adjust dose/schedule for thrombocytopenia. There have been reports of gastrointestinal and intracerebral hemorrhage. Support with transfusions and supportive care, according to published guidelines.
- Tumor Lysis Syndrome has been reported. Closely monitor patients with high tumor burden and take appropriate precautions.
- Hepatic toxicity, including acute liver failure, has been reported. Monitor hepatic enzymes during treatment. Upon occurrence, interrupt therapy with VELCADE to assess reversibility. There is limited re-challenge information in these patients.
- **Thrombotic Microangiopathy:** Cases, sometimes fatal, of thrombotic microangiopathy, including thrombotic thrombocytopenic purpura/hemolytic uremic syndrome (TTP/HUS), have been reported in the postmarketing setting in patients who received VELCADE. Monitor for signs and symptoms of TTP/HUS. If the diagnosis is suspected, stop VELCADE and evaluate. If the diagnosis of TTP/HUS is excluded, consider restarting VELCADE. The safety of reinitiating VELCADE therapy in patients previously experiencing TTP/HUS is not known.
- Embryo-fetal Toxicity: VELCADE can cause fetal harm. Women should be advised of the potential risk to a fetus, to avoid becoming pregnant, and to use effective contraception during treatment and for at least seven months after the final dose of VELCADE. Women using hormonal contraceptives should also use a barrier method of contraception. Advise males with female sexual partners of reproductive potential that they must use contraception during treatment with VELCADE and for four months following treatment.

NINLARO[®] (ixazomib) is indicated in combination with lenalidomide and dexamethasone for the treatment of patients with multiple myeloma who have received at least one prior therapy.

- In multiple myeloma clinical trials, longer term or continuous PI-based therapy resulted in improved outcomes versus shorter fixed-duration therapy⁷
- In routine clinical practice, injectable PI-based therapy often has a shorter median treatment duration than reported in clinical trials^{8,9}
- ✓ TOURMALINE-MM1 evaluated long-term[∗] treatment with the all-oral NINLARO regimen^{3,10,11†}
 - The NINLARO regimen extended median PFS by ~6 months versus the placebo regimen, and the safety profile was amenable to treatment to disease progression
- \checkmark The US MM-6 study was designed to evaluate an *in*-class transition approach to PI-based treatment¹³
 - At 8-month median follow-up, the preliminary 12-month PFS rate was 86%, and the mean duration of continuous PI therapy at data cutoff was 10.1 months. Preliminary safety was consistent with TOURMALINE-MM1

Takeda Oncology is committed to the treatment of multiple myeloma

*Defined as treatment to disease progression or unacceptable toxicity.

⁺The NINLARO regimen included NINLARO+lenalidomide+dexamethasone.

VELCADE[®] (bortezomib) ADVERSE REACTIONS

- Previously untreated multiple myeloma (MM): In the phase 3 study of VELCADE administered intravenously with melphalan and prednisone (MP) vs MP alone, the most commonly reported adverse reactions (ARs) (≥ 30%) were thrombocytopenia (48% vs 42%), neutropenia (47% vs 42%), peripheral neuropathy (46% vs 1%), nausea (39% vs 21%), diarrhea (35% vs 6%), neuralgia (34% vs <1%), anemia (32% vs 46%), and leukopenia (32% vs 28%).
- **Relapsed MM:** In the phase 3 study of VELCADE administered intravenously vs dexamethasone, the most commonly reported ARs (≥ 20%) were nausea (52% vs 9%), diarrhea (52% vs 11%), fatigue (39% vs 25%), peripheral neuropathies (35% vs 4%), thrombocytopenia (33% vs 3%), constipation (30% vs 8%), vomiting (29% vs 3%), anorexia (21% vs 2%), and pyrexia (20% vs 6%). The most commonly reported serious ARs were diarrhea (3%), dehydration, herpes zoster, pyrexia, nausea, vomiting, dyspnea, and thrombocytopenia (2% each) in the VELCADE treatment group and pneumonia (4%), hyperglycemia (3%), pyrexia, and psychotic disorder (2% each) in the dexamethasone treatment group.
- **Relapsed MM subcutaneous vs IV:** In the phase 3 study of VELCADE administered subcutaneously vs intravenously in relapsed MM, safety data were similar between the two treatment groups. The most commonly reported ARs (≥ 30%) in the subcutaneous vs IV treatment groups were peripheral neuropathy (37% vs 50%) and thrombocytopenia (30% vs 34%). The incidence of serious ARs was similar in the subcutaneous treatment group (20%) and the IV treatment group (19%). The most commonly reported serious ARs were pneumonia and pyrexia (each 2%) in the subcutaneous treatment group and pneumonia, diarrhea, and peripheral sensory neuropathy (each 3%) in the IV treatment group.

DRUG INTERACTIONS

- Avoid concomitant use with strong CYP3A4 inducers.
- Closely monitor patients receiving VELCADE in combination with strong CYP3A4 inhibitors and consider dose reduction of VELCADE if it must be administered with strong CYP3A4 inhibitors.

USE IN SPECIFIC POPULATIONS

- Lactation: Advise nursing women not to breastfeed during treatment with VELCADE and for two months after treatment.
- Renal Impairment: No starting dosage adjustment is recommended for patients with renal impairment. In patients requiring dialysis, VELCADE should be administered after the dialysis procedure.
- Hepatic Impairment: No starting dosage adjustment is recommended for patients with mild hepatic impairment. Reduce the starting dose in patients with moderate or severe hepatic impairment.
- Patients with Diabetes: Patients on oral antidiabetic agents receiving VELCADE may require close monitoring of their blood glucose levels and adjustment of the dose of their antidiabetic medication.

REFERENCES: 1. Gandolfi S, Laubach JP, Hideshima T, Chauhan D, Anderson KC, Richardson PG. The proteasome and proteasome inhibitors in multiple myeloma. *Cancer Metastasis Rev.* 2017;36(4):561-584. 2. San Miguel JF, Schlag R, Khuageva NK, et al. Persistent overall survival benefit and no increased risk of second malignancies with bortezomin-melphalan-prednisone versus melphalan-prednisone in patients with previously untreated multiple myeloma. *J Clin Oncol.* 2013;31(4):448-455. 3. Moreau P, Masszi T, Grzasko N, et al; for TOURMALINE-MM1 Study Group. Oral ixazomib, lenalidomide, and dexamethasone for multiple myeloma. *N Engl J Med.* 2006;374(17):1621-1634. 4. San Miguel JF, Schlag R, Khuageva NK, et al; for VISTA Trial Investigators. Bortezomib plus melphalan and prednisone for initial treatment of multiple myeloma. *N Engl J Med.* 2008;359(9):906-917. 5. Referenced with permission from the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines[®]) for Multiple Myeloma V.2.021. © National Comprehensive Cancer Network, Inc. 2020. All rights reserved. Accessed October 9, 2020. To view the most recent and complete version of the guideline, go online to NCCN.org. 6. Richardson PG, Laubach J, Gandolfi S, Facon T, Weisel K, O'Gorman P. Maintenance and continuous therapy for multiple myeloma. *Expert Rev Anticancer Ther.* 2018;18(8):751-764. 7. Richardson PG, Zweegman S, O'Donnell EK, et al. Ixazomib for the treatment of multiple myeloma. *Expert Rev Anticancer Ther.* 2018;18(8):751-764. 7. Richardson PG. Sweegman S, O'Donnell EK, et al. Ixazomib for the treatment of multiple myeloma. *Expert Rev Anticancer Ther.* 2018;18(8):751-764. 7. Richardson PG. Sweegman S, O'Donnell EK, et al. Ixazomib for the treatment of multiple myeloma. *Expert Rev Anticancer Ther.* 2018;18(8):751-764. 7. Richardson PG. Sweegman S, O'Donnell EK, et al. Ixazomib for the treatment of multiple myeloma. *Expert Rev Anticancer Ther.* 2018;18(8):751-764. 7. Richardson PG. Sweegman S, O'Donnell EK, et al. Ixazomib for the tre

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