Mass General Brigham
Health Plan

Tecartus
(brexucabtagene autoleucel)

Policy Number: 054

	Commercial and Qualified Health Plans	MassHealth	Medicare Advantage
Authorization Required	X	X	X
No Prior Authorization			

Tecartus (brexucabtagene autoleucel, brexu-cel) is a chimeric antigen receptor T cell therapy (CAR-T), designed to redirect the patient's immune system to recognize and attack their cancer cells. CAR-T is a type of treatment where white blood cells (T cells) are modified in a laboratory to add a gene that helps the patient's own T cells target their cancer.

FDA-Approved Indication
Tecartus is a CD19-directed genetically modified autologous T cell immunotherapy indicated for the treatment of:

- Adult patients with relapsed or refractory mantle cell lymphoma (MCL).
  This indication is approved under accelerated approval based on overall response rate and durability of response. Continued approval for this indication may be contingent upon verification and description of clinical benefit in a confirmatory trial.
- Adult patients with relapsed or refractory B-cell precursor acute lymphoblastic leukemia (ALL).

Criteria for Initial Approval

1. Patient Criteria for MCL
   Authorization of a single treatment may be granted to members 18 years of age or older for treatment of MCL when **ALL** of the following criteria are met:
   A. The disease is in second or later relapse after a Bruton's tyrosine kinase inhibitor (BTKI) and chemoimmunotherapy.
   B. The B-cells must be CD19-positive in the latest relapse as confirmed by immunohistochemistry or flow cytometry.
   C. The member has not received any prior FDA approved CD19-directed therapy (e.g. Tecartus, Kymriah or Yescarta)[1]
   D. The member has previously received a BTKI and has had an inadequate response, adverse reaction, or contraindication to any of the following BTKIs:
      i. Ibrutinib
      ii. Acalabrutinib
      iii. Zanubrutinib.
   E. The member has previously received Anti-CD20 monoclonal antibody therapy (e.g. rituximab, obinutuzumab) as well as either anthracycline- or benamustine-containing chemotherapy.
   F. The member has adequate organ and bone marrow function as determined by the treating oncologist or hematologist.

[1] Exceptions for non-FDA approved CD19 therapies will be reviewed on an individual case by case basis. A detailed medical review will be required.

2. Patient Criteria for B-cell precursor ALL.
   Authorization of a single treatment may be granted to members 18 years of age or older for treatment of B-cell precursor ALL when **ALL** of the following criteria are met:
   A. ONE of the following:
      i. The member has primary refractory ALL; OR
      ii. The member has experienced a first relapse following a remission lasting less than or equal to 12 months; OR
      iii. The member has relapsed or refractory ALL after second line or higher therapy; OR
      iv. The member has relapsed or refractory ALL at least 100 days after allogenic stem cell transplant.
   B. The B-cell precursor ALL is Philadelphia chromosome positive, and the member has had an inadequate response, adverse reaction, or contraindication to ONE tyrosine kinase inhibitor (TKI).

3. Facility Criteria
   A. The healthcare facility that dispenses and administers Tecartus must be enrolled and comply with the Risk Revaluation and Mitigation Strategy known as Tecartus REMS.
   B. The healthcare facility must have tocilizumab available on site for management of Cytokine Release Syndrome
   C. Tecartus is prescribed by a hematologist or oncologist with demonstrated expertise in CAR-T Therapy

4. Required Documentation
   - Documentation of refractory disease or prior lines of therapy for MCL.

5. Duration of Therapy
   - Single intravenous treatment course
   - Additional courses of therapy are considered experimental/investigational.

MassHealth Variation
Prior authorization requests for Tecartus for Mass General Brigham ACO members should be submitted to the MassHealth Drug Utilization Review Program. Criteria for Tecartus are found in Table 75: T-Cell Immunotherapies.

Medicare Variation
Mass General Brigham Health Plan uses guidance from the Centers for Medicare and Medicaid Services (CMS) for coverage determinations for its Medicare Advantage plan members. National Coverage Determinations (NCDs), Local Coverage Determinations (LCDs), Local Coverage Articles (LCAs) and documentation included in the Medicare manuals are the basis for coverage determinations. When there is no guidance from CMS for the requested service, Mass General Brigham Health Plan's medical policies are used for coverage determinations. **At the time of Mass General Brigham Health Plan's most recent policy review, Medicare has an NCD for Chimeric Antigen Receptor (CAR) T-cell Therapy (110.24).**

When NCDs and LCDs lack sufficient specificity to ensure consistent medical review and coverage decisions, Mass General Brigham Health Plan applies additional coverage criteria to clarify medical necessity of the requested service. Mass General Brigham Health Plan coverage criteria align with the latest clinical evidence and accepted standards of practice, without contradicting existing determinations, and enhance the clarity of medical necessity criteria, documentation requirements, and clinical indications. Because NCD 110.24 lacks sufficient specificity to ensure consistent medical review and coverage determinations, Mass General Brigham Health Plan uses both the NCD and the criteria described in this policy to review requests for Tecartus.

Codes

The following codes are included below for informational purposes only; inclusion of a code does not constitute or imply coverage.

This list of codes applies to commercial and MassHealth plans only.

Authorized CPT/HCPCS Codes	Code Description
38225	Chimeric antigen receptor T-cell (CAR-T) therapy; harvesting of blood-derived T lymphocytes for development of genetically modified autologous CAR-T cells, per day
38226	Chimeric antigen receptor T-cell (CAR-T) therapy; preparation of blood-derived T lymphocytes for transportation (eg, cryopreservation, storage)
38227	Chimeric antigen receptor T-cell (CAR-T) therapy; receipt and preparation of CAR-T cells for administration
38228	Chimeric antigen receptor T-cell (CAR-T) therapy; CAR-T cell administration, autologous
Q2053	Brexucabtagene autoleucel, up to 200 million autologous anti-cd19 car positive viable t cells, including leukapheresis and dose preparation procedures, per therapeutic dose

Summary of Evidence

Brexu-cel, a transformative CAR T-cell therapy originally called KTE-X19, has demonstrated exceptional efficacy in treating relapsed or MCL and B-cell acute lymphoblastic leukemia (B-ALL) through rigorous clinical trials. In ZUMA-2, a pivotal phase 2 study reported by Wang et al. (2020), patients who had relapsed or refractory MCL after BTK inhibitor therapy underwent leukapheresis, conditioning chemotherapy, and a single infusion of brexu-cel. The results were striking, with a 93% objective response rate (ORR) and 67% achieving complete responses (CR). At a median follow-up of 12.3 months, 57% of patients remained in remission, while progression-free survival (PFS) and overall survival (OS) at 12 months reached 61% and 83%, respectively. Subgroup analyses highlighted brexu-cel's efficacy in high-risk populations, including those with a Ki-67 index ≥50% or TP53 mutations, suggesting its potential in traditionally poor-prognosis cases. Interestingly, although bridging therapy was utilized, it did not reduce pre-infusion tumor burden, as most patients exhibited increased tumor load during this phase. Robust T-cell expansion and B-cell aplasia following BREXU-CEL infusion were strongly associated with positive outcomes, underscoring the therapy's biologic mechanism.

The safety profile in MCL was consistent with the intensity of the treatment but remained manageable within the context of its benefits. Grade 3 or higher adverse events, including cytopenias in 94% and infections in 32% of patients, were prominent, alongside severe cytokine release syndrome (CRS) and neurologic events in 15% and 31% of patients, respectively. Importantly, these events were generally well-controlled, and no lasting quality-of-life impairments were observed, affirming brexu-cel's suitability for this patient population.

Building on these successes, the phase 2 ZUMA-3 trial (Shah et al., 2021) investigated brexu-cel in relapsed or refractory B-ALL. This heavily pretreated group, with a median age of 40 years, included 45% with prior blinatumomab exposure, 22% who had received inotuzumab ozogamicin, and 42% who had undergone allogeneic stem cell transplantation. Despite these extensive treatment histories, brexu-cel achieved a 71% CR or CR with incomplete hematologic recovery (CRi) rate, with 97% of responders attaining minimal residual disease negativity. After 3 years of follow-up, phase 2 patients (treated at the pivotal dose) OS was 28.6 months for patients <26 years and 34.1 months for those ≥26 years (Shah et al. 2023). The therapy’s efficacy was greatest in patients who had only 1 prior therapy and in those who had not received blinatumomab.

Safety findings in B-ALL mirrored those in MCL, with most CRS and neurologic events resolving early and no fatalities attributable to these complications. Quality-of-life assessments revealed an initial decline 28 days post-infusion, followed by notable improvements by month 12 across domains such as mobility, self-care, and anxiety. The EQ-5D-5L scores reflected this recovery, with visual analogue scale scores rising from 70.0 at baseline to 87.5 at 12 months, emphasizing the therapy's potential to restore patient functionality.

Analyses of incremental cost effectiveness suggest that brexu-cel may be cost effective for both ALL and MCL (Khatiwada, Kamel, Chaiyakunapruk, Ngorsuraches 2024). Together, these trials solidify brexu-cel's position as a groundbreaking therapy for relapsed or refractory MCL and B-ALL. With robust efficacy, a manageable safety profile, and meaningful quality-of-life improvements, brexu-cel offers a lifeline to patients facing limited treatment options, marking a significant advancement in CAR T-cell therapy and hematologic cancer care. Consistent with NCCN practice guidelines and FDA indications, MGB Health Plan considers brexu-cel to be medically necessary for individuals with relapsed/refractory B-ALL or MCL who meet inclusion criteria derived from the ZUMA trials.

Effective
April 2025: Ad hoc review. MassHealth variation updated to include new prior authorization process.
March 2025: Ad hoc review. FDA approved indication and Medicare variation clarified. Summary of Evidence added. References updated.
February 2025: Annual review. Codes updated.
September 2024: Ad hoc update. Added MassHealth variation.
February 2024: Annual review. Removed requirement for CD19 testing.
February 2023: Annual review. Added Medicare Advantage to table. Under Criteria for Initial Approval, the following changes were made to align with revised MassHealth guidelines: added "inadequate response, adverse reaction, or contraindication", added refractory or relapsed language, added inadequate response to tyrosine kinase inhibitor criteria. Medicare variation language added. References updated.
February 2022: Annual Review. Under section FDA-Approved Indication, added "relapsed or refractory B cell ALL". Under section Criteria for Initial Approval, added #2 "Patient Criteria for B-ALL". In addition, formatting changes made for clarity purposes. References updated.
March 2021: Effective Date.

References
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MassHealth Drug List. Medication Class/Individual Agents. Table 75: Chimeric Antigen Receptor (CAR)-T Immunotherapies. Prior-Authorization Requirements. Tecartus (brexucabtagene autoleucel). Executive Office of Health and Human Services (EOHHS). 2020 December. Accessed at: https://masshealthdruglist.ehs.state.ma.us/MHDL/pubtheradetail.do?id=1347&drugId=7495

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Shah BD, Cassaday RD, Park JH, et al. 3-year outcomes of adults with relapsed or refractory B-cell acute lymphoblastic leukemia treated with brexu-cel in ZUMA-3 by age, prior therapies, and subsequent transplant. Abstract. *Hematological Oncology* 2023;41:520-1.

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