

BCMA: A PROMISING TARGET IN AUTOIMMUNE DISEASES

Unmet Need in Autoimmune Diseases

Autoimmune diseases impact tens of millions globally, with prevalence continuing to rise. These conditions impose a persistent burden on both individuals and healthcare systems, reinforcing the urgent need for the development of effective and accessible therapies.

Current treatment options aim to relieve symptoms or broadly suppress the immune system, typically resulting in only a temporary reduction in inflammation.

To achieve durable disease control, it is critical that therapies are designed to address the underlying causes of autoimmune conditions — not just their symptoms.

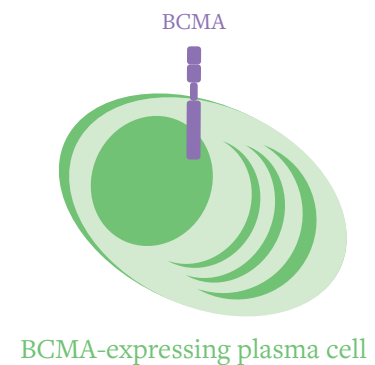
Emerging Therapeutic Strategies for Immune Reset in Autoimmune Diseases

In autoimmune diseases, the ultimate goal of treatment is to reset the immune system. T cell engagers aim to deplete disease-causing B cells, so healthy B cells can repopulate, rebooting the immune system to function normally again. Immune reset achieved with T cell engagers intends to provide long-term disease control without the need for immunosuppression.

Emerging research has recently identified BCMA as a promising new target, with the potential to modulate the immune system.

What is BCMA and Why is Targeting It Important?

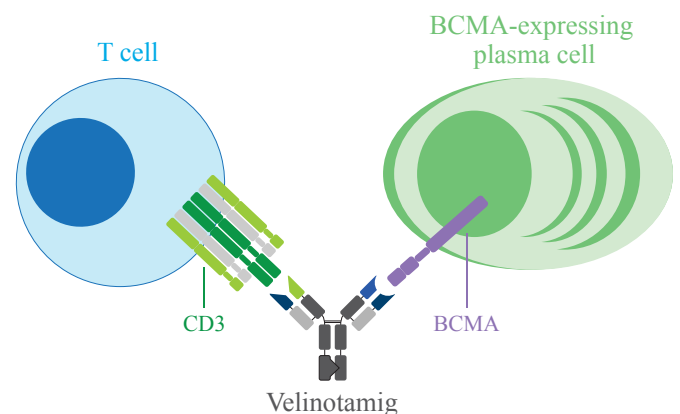
- ▶ B cells are a type of immune cell which can be autoreactive. Autoreactive cells mistakenly target a person's own body, causing chronic inflammation and damage, and disease progression.^{1,2}
- ▶ B cell maturation antigen (BCMA) is a protein found on the surface of plasma cells, a mature type of B cell, and plays a crucial role in the survival of long-lived plasma cells^{3,4,5}
- ▶ To thoroughly eliminate the cells that drive the disease, targeting BCMA is an important and precise approach with the potential to reset the immune system.
- ▶ Growing evidence shows that BCMA-expressing B cells drive disease-causing processes in many autoimmune diseases.
- ▶ Because BCMA is not expressed on early B cells or most other immune cells, BCMA is a selective target for autoimmune disease therapies.^{1,2,3}



Investigational Treatments Targeting BCMA

Cullinan Therapeutics is investigating new ways to help the body eliminate these harmful cells, including an approach to target BCMA with a T cell engager.

- ▶ T cell engagers are bispecific antibodies designed to guide the immune system's T cells to find and eliminate harmful cells, such as autoreactive cells, that carry specific markers on their surface.⁶
- ▶ Bispecific T cell engagers work by linking a T cell and a target cell together, binding to CD3 on T cells and a cell surface antigen on target cells.
- ▶ Once the T cell is linked to the target cell, the T cell then destroys the targeted harmful cell.
- ▶ Cullinan Therapeutics is investigating multiple targets to ultimately impact a broader range of autoimmune diseases and reach more patients.



Learn more about our research of **velinotamig**, our investigational T cell engager targeting BCMA by visiting: <https://cullinantherapeutics.com/pipeline/>

- References**
1. Merville P, Déchanet J, Desmoulière A et al. Bel-2+ tonsillar plasma cells are rescued from apoptosis by bone marrow fibroblasts. *J Exp Med*. 1996;183(1):227-36.
 2. Sakowska J, Arcimowicz L, Jankowiak M et al. Autoimmunity and Cancer—Two Sides of the Same Coin. *Front Immunol*. 2022; 13:793234.
 3. Dong N, Zhang H, Song J, et al. B-cell maturation antigen expression and clinical features of plasmablastic lymphoma. *EJHaem*. 2024 Jan 18;5(1):285-289. doi: 10.1002/jha2.807. PMID: 38406544; PMCID: PMC10887266
 4. Pillarisetti K, Powers G, Luistro L, et al. Teclistamab is an active T cell-redirecting bispecific antibody against B-cell maturation antigen for multiple myeloma. *Blood Adv*. 2020 Sep 22;4(18):4538-4549. doi: 10.1182/bloodadvances.2020002393. PMID: 32956453; PMCID: PMC7509877
 5. Tian D.S., Qin C., Dong M.H., et al. cell lineage reconstitution underlies CAR-T cell therapeutic efficacy in patients with refractory myasthenia gravis. *EMBO Mol Med*. 2024 Apr;16(4):966-987. doi: 10.1038/s44321-024-00043-z. Epub 2024 Feb 26. PMID: 38409527; PMCID: PMC11018773
 6. Tapia-Galisteo A, Álvarez-Vallina L, Sanz L. Bi- and trispecific immune cell engagers for immunotherapy of hematological malignancies. *J Hematol Oncol*. 2023;16:83.