

Track BDC2.5-Specific CD4⁺ T Cells in Type 1 Diabetes Models - Using the I-A⁹⁷ Mimotope Tetramer -



Featured Product

- [I-A⁹⁷ BDC2.5 mimotope Tetramer](#)

This tetramer consists of mouse MHC class II I-A⁹⁷ loaded with the BDC2.5 mimotope peptide AHHPIWARMDA.

Applications

- Tracking and quantification of BDC2.5-specific CD4⁺ T cells
- Flow cytometric analysis of autoreactive T cells
- Studies of type 1 diabetes and immune tolerance

Background: The Search for the BDC2.5 Antigen

The BDC2.5 TCR transgenic mouse is one of the most widely used models for studying pathogenic CD4⁺ T cell responses in type 1 diabetes. In this model, autoreactive T cells infiltrate pancreatic islets and contribute to β -cell destruction. For many years, identification of the antigen recognized by BDC2.5 T cells remained a major challenge. To address this question, combinatorial peptide library screening was used to identify peptides capable of strongly stimulating BDC2.5 T cells. Although these peptides are not the natural antigen, they function as surrogate ligands that elicit similar T cell responses and are therefore referred to as mimotopes¹.

Subsequent studies have identified disease-relevant antigens such as hybrid insulin peptides (HIPs). Nevertheless, BDC2.5 mimotopes remain valuable experimental tools because they enable sensitive and reproducible detection of antigen-specific T cells.

BDC2.5 mimotopes offer several advantages:

- Potent stimulation of BDC2.5 T cells
- Widely used surrogate ligands for autoreactive T cell studies
- Sensitive detection of BDC2.5-reactive T cells

As a result, mimotope-based reagents have become standard tools for investigating autoimmune mechanisms in NOD mice.

Reference

1. Judkowski, V., *et al.*, *J Immunol.* (2001) [PMID: [11145667](#)]

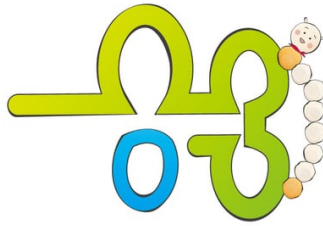
Related Products

- [Mouse MHC Class II I-A⁹⁷ Tetramers](#)

Other I-A⁹⁷ tetramers loaded with unrelated peptides can be used as negative controls while maintaining the same MHC class II background.

Looking for a specific MHC Tetramer?

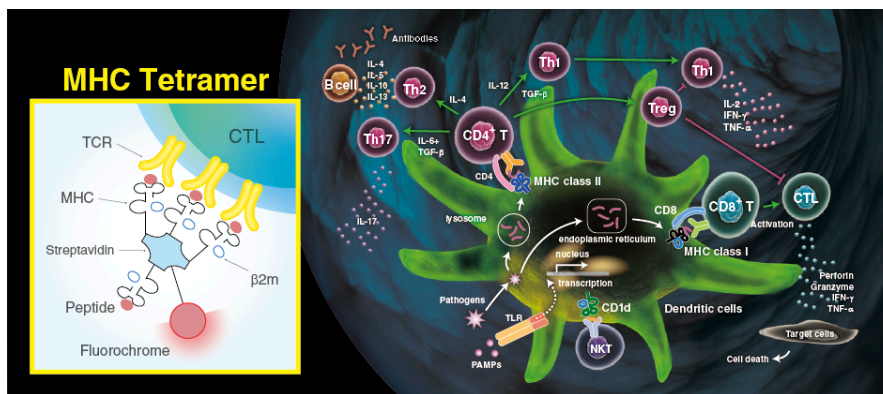
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