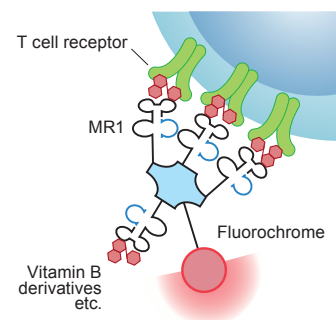


# T-Select Human MR1 Tetramer

- The reagent is prepared by tetramerizing biotinylated human MR1/β2m complexes with the help of phycoobiliprotein-labeled streptavidin.
- The MR1 tetramer does not include the MR1 ligand. You can combine with the MR1 ligand of your interest, and detect MAIT cells by flow cytometry.



## What is MR1?

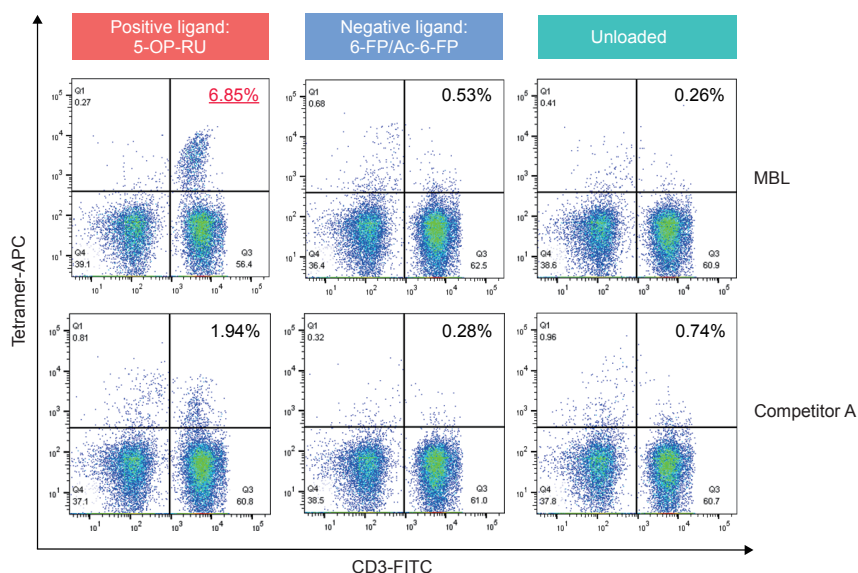
The MHC class I-related protein MR1 is a membrane protein non-covalently bound to β2-microglobulin (β2m), which is known as one of the non-classical MHC class I molecules. It is expressed in almost all cell types of the body. Upon stimulation, for example, during an infection, MR1 molecules associated with microbial vitamin B metabolites migrate to the cell surface to present them to and thereby activate MAIT cells.

## What are MAIT cells?

MAIT cells have been proposed to act as innate T cells that primarily respond to bacterial and fungal antigens. Recently, MAIT cells were found to be associated with autoimmune diseases. In addition, it has been reported that intestinal bacteria play a role in the development and differentiation of MAIT cells, therefore gaining increasing attention by researchers in the field of intestinal immunity.

## Staining comparison of MR1 Tetramer products

Peripheral blood mononuclear cells (PBMCs) from healthy donors were stained with T-Select Human MR1 Tetramer APC loaded with 5-OP-RU or Ac-6-FP, or unloaded. It was compared with staining data using human MR1 tetramer of competitor A loaded with 5-OP-RU or 6-FP, or unloaded.



## Enhancement reagents for MR1 Tetramer staining

# Anti-PE mAb, Anti-APC mAb

Several researchers have evaluated numerous tricks for improving staining intensities using major histocompatibility complex (MHC) multimers. In particular, addition of a protein kinase inhibitor (PKI) and staining with anti-phycoerythrin antibody are widely used<sup>1</sup>.

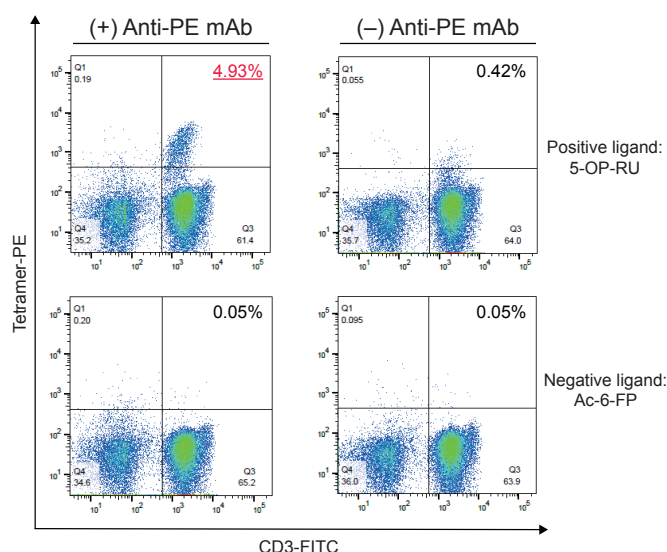
MBL has developed anti-PE and anti-APC antibodies that can be used in MHC tetramer staining. The enhancement effect in the staining method was evaluated using T-Select Human MR1 Tetramer PE, APC (Code No. TS-HMRV2-1,2).

\*The degree of enhancement differs depending on the MHC tetramers used.

### Evaluation of enhancement using Human MR1 Tetramer

PBMCs from healthy donors were stained with T-Select Human MR1 Tetramer PE (Code No. TS-HMRV2-1) loaded with 5-OP-RU or Ac-6-FP. After Tetramer staining, the PBMCs were incubated with or without Anti-PE mAb followed by staining with anti-CD3 antibody. Thereafter, they were analyzed via flow cytometry.

Only 0.42% of CD3+/tetramer+ cells were detected during MR1 tetramer staining without Anti-PE mAb. In contrast, addition of the antibody highly enhanced the staining intensity (4.93%).



\*Numbers in the upper right quadrants represent the percentages of MR1 Tetramer<sup>+</sup> cells relative to the total CD3<sup>+</sup> cells.

## Product list

### Human MR1 Tetramer

Code No.	Product name	Size
TS-HMRV2-1	T-Select Human MR1 Tetramer v2-PE	50 tests
TS-HMRV2-2	T-Select Human MR1 Tetramer v2-APC	50 tests

### Enhancement reagents for MHC tetramer staining

Code No.	Product name	Clone	Isotype	Size
M240-3	Anti-PE mAb	C27-6	Mouse IgG2a κ	50 µg/100 µL
M241-3	Anti-APC mAb	29-10	Mouse IgG2b κ	50 µg/100 µL

Reference 1) Tungatt K et al., J Immunol. 194, 463-474(2015)  
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