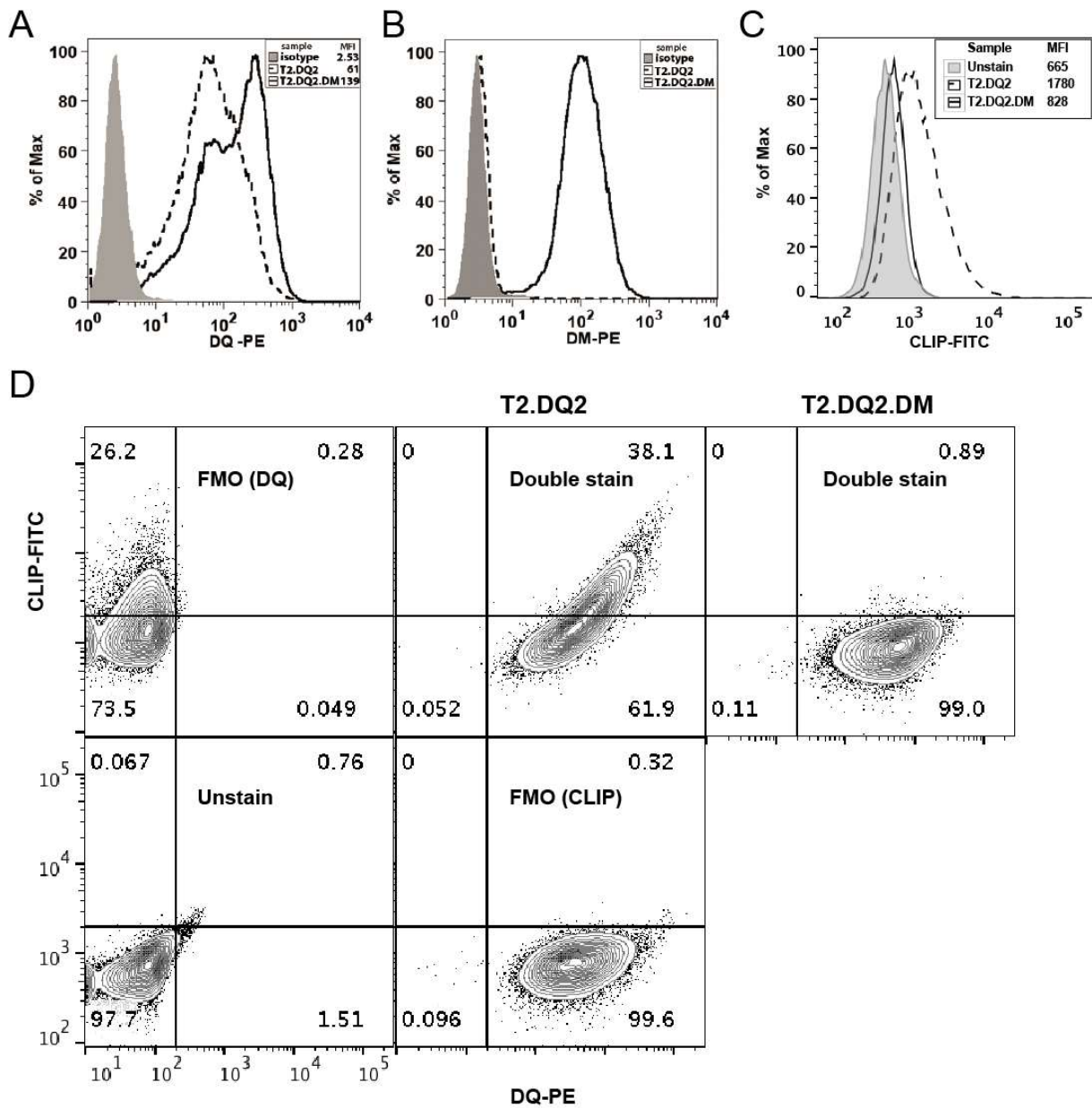


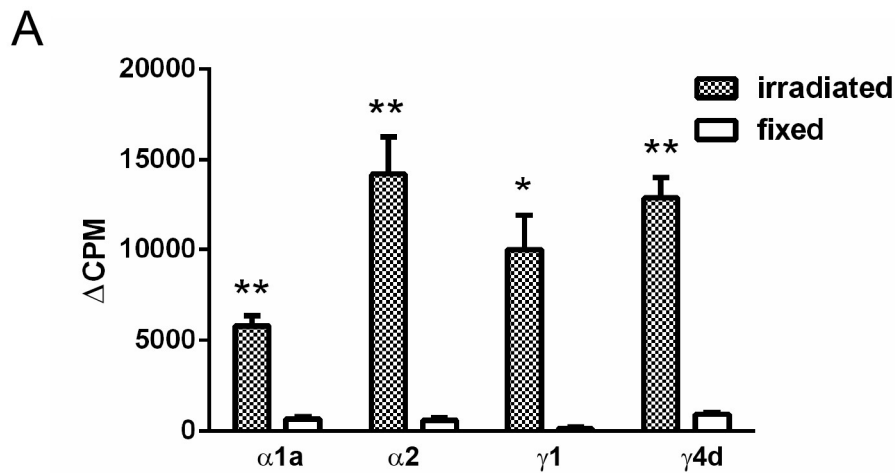
Supplementary Figure 1



Supplementary Figure 1. Effects of DM on DQ2 and surface DQ2/CLIP1 levels in cells. (A-C) Expression of DQ, DM, and CLIP/DQ2 in T2.DQ2 and T2.DQ2.DM cells. T2.DQ2 and T2.DQ2.DM cells were surface-stained with PE-conjugated mouse anti-human DQ (Ia3; DQ-PE)

(A) or permeabilized and stained with PE-conjugated mouse anti-human DM (MaP.DM1; DM-PE) (B) or surface-stained with FITC-conjugated mouse anti-human CLIP (CerCLIP.1; CLIP-FITC) (C) followed by flow cytometry. (D) Co-staining of T2.DQ2 and T2.DQ2.DM cells with DQ-PE and CLIP-FITC. The unstained sample, FMO (DQ-PE) and FMO (CLIP-FITC), respectively, of T2.DQ2 cells were used as controls. mAb CerCLIP.1 recognizes CLIP1 (~aa 81-103), but not CLIP2 (~aa 93-108) (71), in complex with MHCII. DQ2 proteins in T2.DQ2 also are associated with CLIP2 peptides (17, 72). However, DM-mediated peptide replacement is not limited to a particular CLIP peptide, as most CLIP peptides are absent in the pulse-chase assay (Figure 1).

Supplementary Figure 2

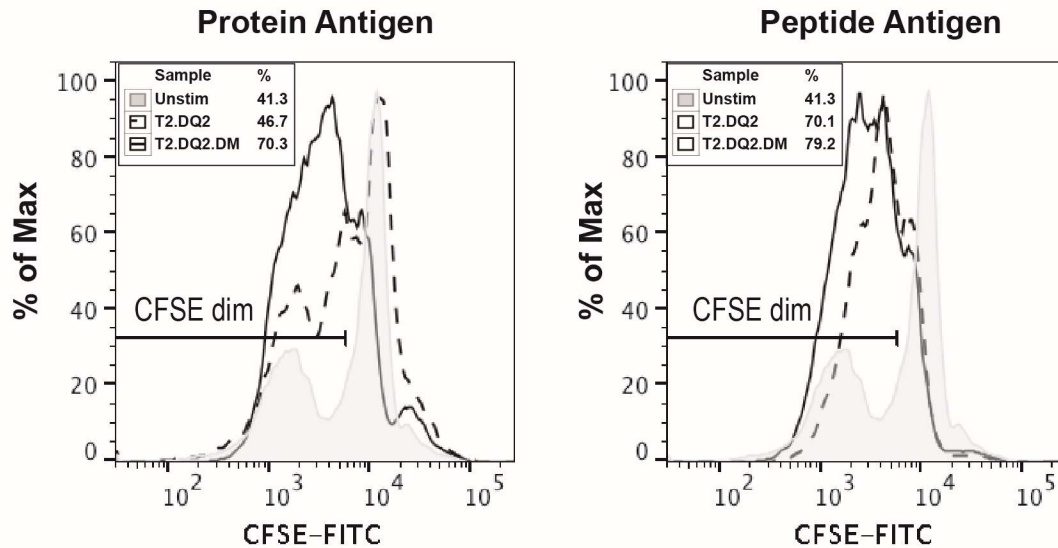


Supplementary Figure 2. Presentation of PT-gluten requires intracellular processing.

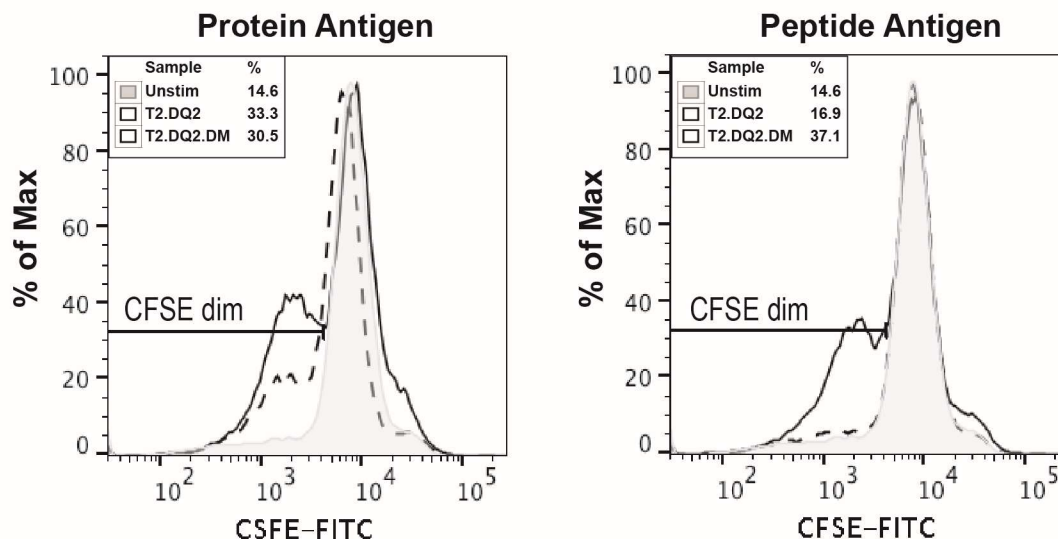
T2.DQ2 cells were either irradiated or fixed before being added to α 1a, α 2, γ 1, or γ 4d specific-T cell clones (TCC819.392, TCC820.250, TCC820.270, or TCC820.59, respectively) with or without transglutaminase-treated PT-gluten. [3 H]-thymidine incorporation and measurement was performed as described in Figure 2.

Supplementary Figure 3

A H1N1



B HPV16



Supplementary Figure 3. Representative flow cytometric data for CFSE staining. (A) H1N1- and (B) HPV- specific T cell clones were labelled with CFSE and stimulated by (A) recombinant HA proteins or HA₉₇₋₁₁₃ peptide derived from H1N1 and (B) recombinant E7

protein or E7₂₂₋₅₆ peptide derived from HPV16, respectively. Shown are overlays of histograms representing unstimulated, antigen/T2.DQ2-stimulated or antigen/T2.DQ2.DM-stimulated samples with % of CFSE dim cells indicated.

Supplementary Table 1

List of gliadin peptides used and the corresponding T cell clones

Epitope	Nomenclature	Peptide used for each epitope (epitope bold)	Corresponding T cell clone
α 1a	DQ2.5-glia- α 1a	α -glia (α 1/ α 2): LQLQ PFQPELPYPQPELPY P1269: QLQ PFQPELPY	TCC819.392
α 2	DQ2.5-glia- α 2	α -glia (α 1/ α 2): LQLQ PFQPELPYPQPELPY PS1200: PQPELPYPQPQS	TCC820.250
γ 1	DQ2.5-glia- γ 1	P1213: pyroEPEQ PQQSFPEQERP	TCC820.270
γ 4d	DQ2.5-glia- γ 4d	P1936: PFQPEQPFCEQPQR	TCC820.59

This table is adapted from (35).