(A) Establish lab SOP for MHC peptide multimer staining:

A1 Count at least 100,000 CD8 T cells per staining.

A2 Establish adequate measures to quantify non-specific binding of MULTIMER to CD8-positive cells (e.g. irrelevant MULTIMER or autofluorescence).

A3 Establish adequate measures to reduce the amount of non-specific binding of MULTIMERS in the CD8-positive population to allow accurate quantification (e.g. DUMP channel or DEAD cell dyes).

(B) Establish SOP for software analyses of stained samples, including:

- B1 Gating strategy.
- B2 Rules to set the gates.

(C) Establish a human auditing process of all final results:

- C1 Are all dot plots correctly compensated?
- C2 Have the gates been set correctly?
- C3 Are the reported frequencies of multimer-positive cells plausible?

(D) Lab environment

D1 Only let experienced personnel (per lab SOP) conduct assay.

(E) Implement a structured framework to report data from MULTIMER experiments that makes sure that essential pieces of information are not missed (e.g. MIATA or other MI projects).

E1 Showing at least one representative data set that provides information on the gating style applied and the amount of MULTIMER binding to CD8-negative cells.