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## The proteasome regulator PA28?? is a crucial determinant in graft acceptance

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The proteasome generates peptides which can be presented on MHC-I. Those peptides can either origin from pathogenic proteins after infections or from self-proteins, which is crucial for T cell selection. The proteasome regulator PA28?? was shown to change the cleavage pattern of the proteasome. In particular, several immunogenic peptides have been reported to be PA28?? dependent. In contrast to those studies, we could not observe a major impact of PA28?? expression on the generation of several tested immunogenic peptides. There was no difference in the presentation of different lymphocytic choriomeningitis virus (LCMV) or vaccinia virus derived peptides in in vitro experiments comparing wildtype and PA28?? knockout cells, which was consistent with a normal CD8 response and viral clearance in infected PA28?? knockout mice. However, we observed that the adoptive transfer of wildtype cells into PA28?? knockout mice, but not vice versa, led to the rejection of the transferred cells. Depletion experiments showed that the observed rejection is mediated by CD8+ cytotoxic T cells. These data indicate that PA28?? is involved in the development of the CD8+ T cell repertoire in the thymus. Taken together, our data suggest that PA28?? is a crucial factor determining graft survival.