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### **ACCEPTED MANUSCRIPT**

Effective suppression of donor specific antibody production by Cathepsin S inhibitors in a mouse transplantation model

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#### **Abstract**

Donor-specific antibodies (DSA) are a major risk factor for antibody-mediated rejection (ABMR) in solid organ transplantation, and ABMR remains a medical challenge. Therefore, effective anti-ABMR therapies are needed to improve overall graft survival. Cathepsin S (Cat S) is an essential protease for antigen peptide loading onto lysosomal/endosomal major histocompatibility complex (MHC) class II molecules to promote antigen presentation. Cat S deficiency produces immuno-deficient phenotypes including a suppressed humoral immune response, and Cat S

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