Supplementary Figure legends

Suppl Figure 1. **MOG-specific B lymphocytes induce proliferation and activation of MOG-specific T lymphocytes by MOG protein.**

MOG-specific Th B lymphocytes were added in different ratios (0/10 to 25/10) to 2D2 (TCR transgenic for MOG peptide 35-55) splenocytes in the presence of 2 μg/ml MOG protein or to OT2 (TCR transgenic for OVA peptide 323-339) splenocytes in the presence of 2 μg/ml OVA protein. On day 3, 2D2 and OT2 T lymphocytes (gated on CD4+ cells) were assessed for proliferation by CFSE labeling (A) and for activation by CD69 (B) and CD40L (C) labeling. The MOG-specific B lymphocytes induced antigen-specific proliferation and activation of the 2D2 T lymphocytes which was not observed for OVA-specific T lymphocytes.

Suppl Figure 2. **Activation of MOG-specific B lymphocytes upon stimulation with activated T lymphocytes.**

Th B lymphocytes specific for MOG and B1.8 B lymphocytes specific for nitrophenyl were cultured in the presence of T cells from either 2D2 mice (TCR transgenic for MOG peptide 35-55) or OT2 mice (TCR transgenic for OVA peptide 323-339). Cultures were stimulated for 4 days with increasing doses (0-40 microgram/ml) of MOG protein, MOG peptide 35-55, or OVA peptide 323-339. Expression of CD69 and CD86 on B200+ B cells was determined by flow cytometry. Paralleling the data on B lymphocyte proliferation, 2D2 T cells activated by the presence of either MOG protein or peptide led to a dose-dependent activation of MOG-specific B lymphocytes, whereas MOG protein in the absence of T cells had no effect (A and C). MOG-specific B lymphocytes were

also activated upon coculture with activated OVA-specific T cells, as were nitrophenyl-specific B lymphocytes upon coculture with activated MOG-specific T cells (B and D), indicating a critical role for activated T cells rather than antigen-specificity for the activation of B lymphocytes.

Suppl Figure 3. Clinical course of spontaneous Devic-like disease in 2D2xTh mice. Spontaneous disease in individual 2D2xTh mice was evaluated, after birth, on a scale from 0 to 5 as described in material and methods. The asterisk indicates when animals were sacrificed.

SupplementFigure 1,
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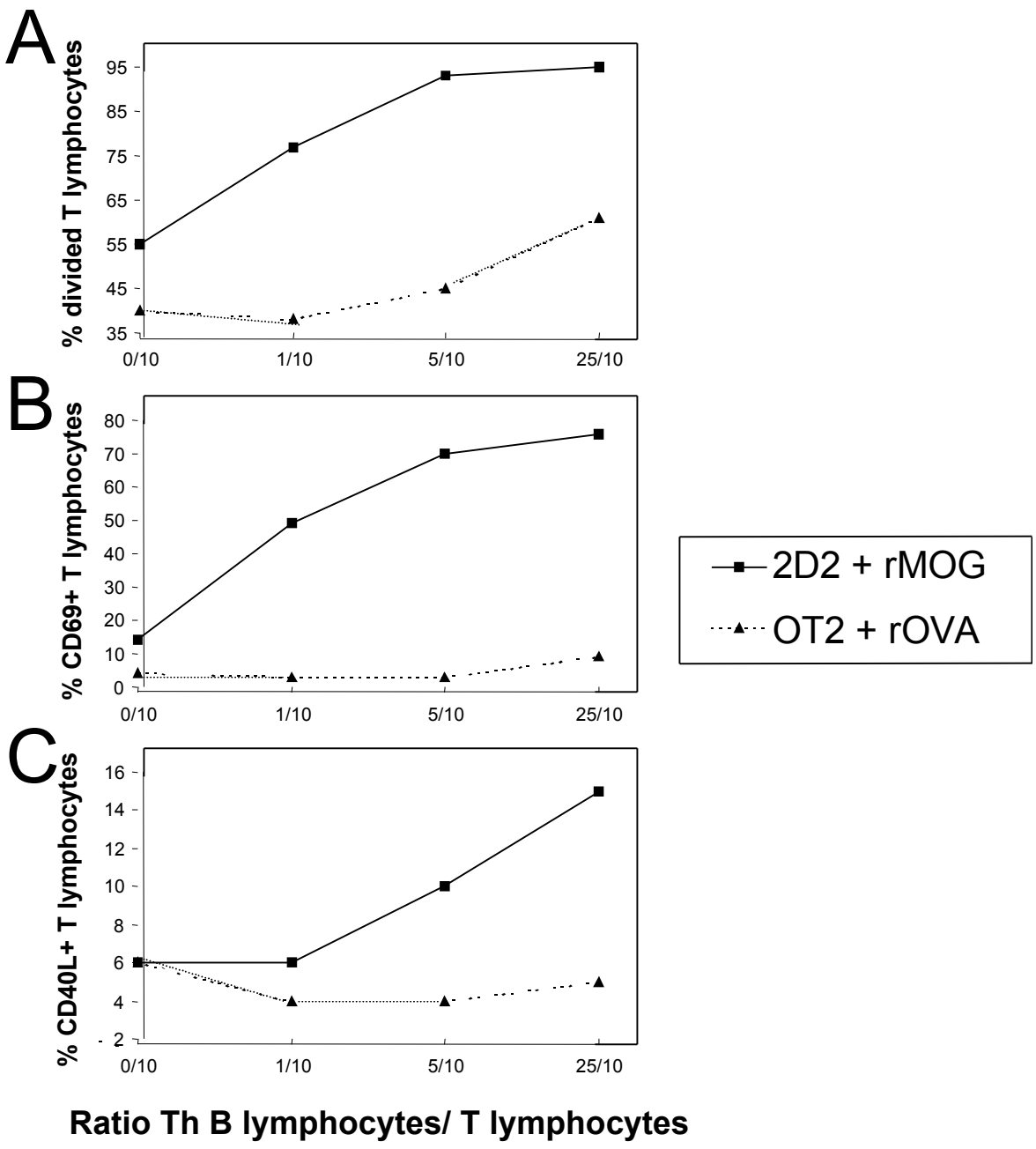

SupplementFigure 2,
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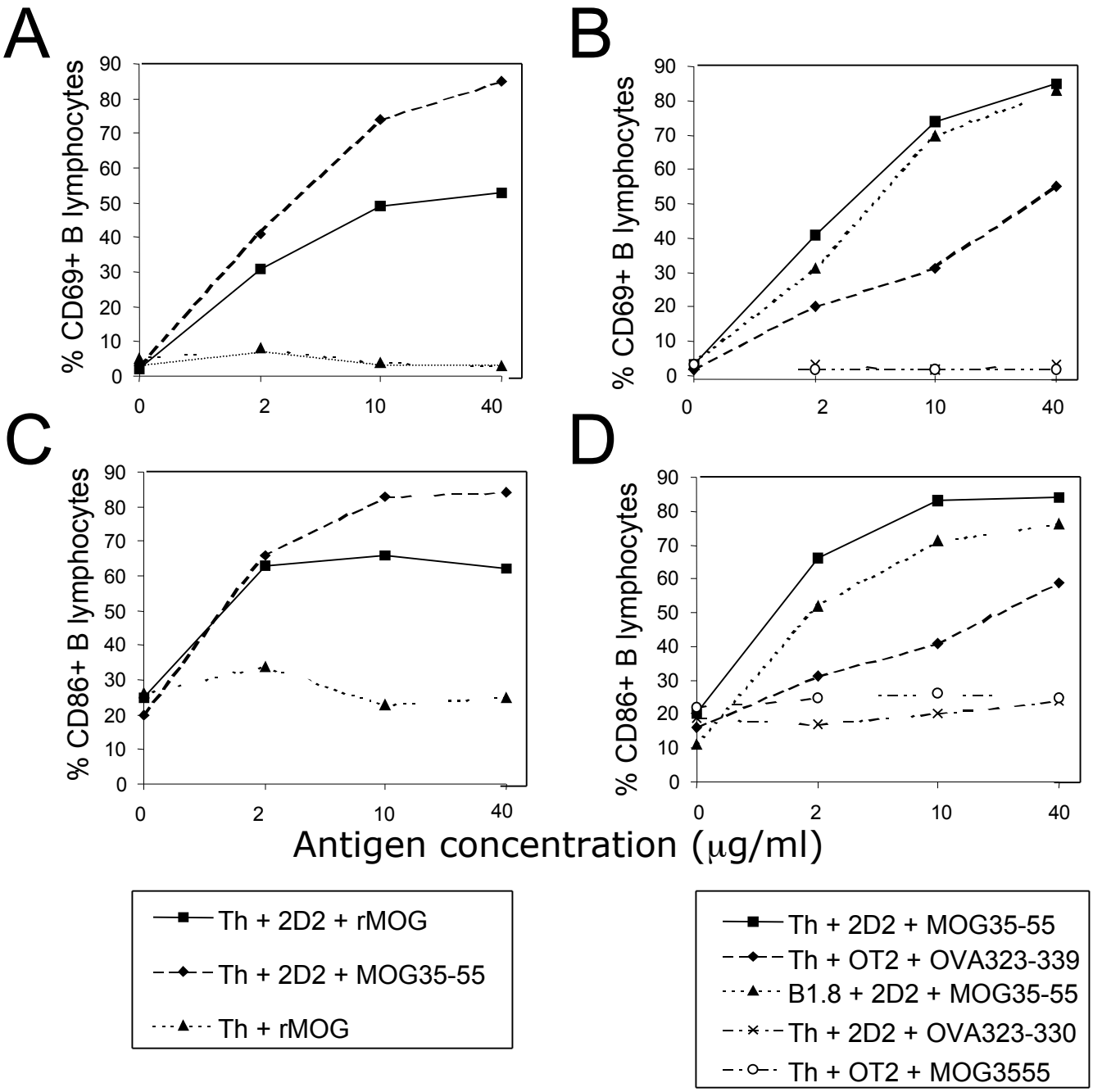

Supplement Figure 3,
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