

Autoimmune and Inflammation Animal Models



WuXi AppTec Research Service Division, Oncology & Immunology Unit



2019.11

Outline

Autoimmune Arthritis

- Collagen induced arthritis (CIA) in DBA/1 mice
- Adjuvant induced arthritis (AIA) in Lewis rats
- hTNF α transgenic mice – a spontaneous model

Experimental Autoimmune Encephalomyelitis (EAE)

- MOG-induced EAE in C57BL/6 mice
- MBP-induced EAE in Lewis rats
- PLP-induced relapsing-remitting EAE in SJL mice

Delayed Type Hypersensitivity (DTH)

- Oxazolone-induced DTH in mice
- DNFB-induced DTH in mice
- PMA-induced DTH in mice

Psoriasis

- Imiquimod-induced psoriasis-like skin inflammation

Inflammatory bowel disease (IBD)

- Naive T cell transfer induced colitis
- DSS-induced colitis
- TNBS-induced colitis

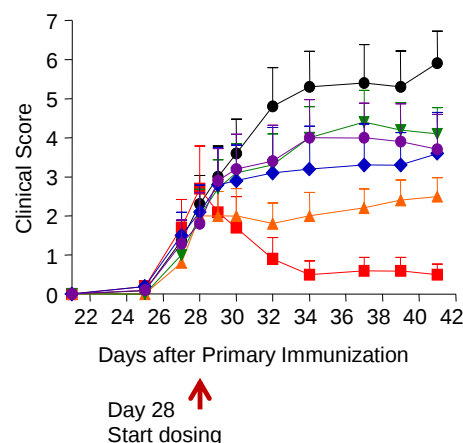
Systemic Lupus Erythematosus (SLE)

- MRL/lpr SLE mice model – a spontaneous model

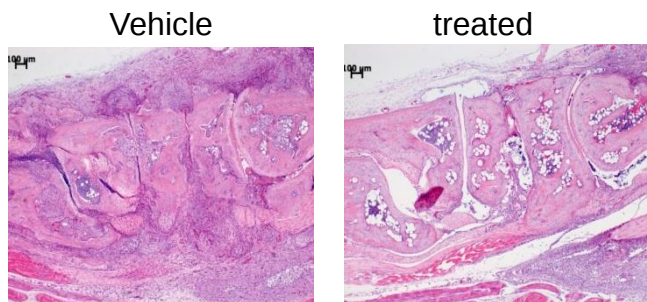
Collagen induced Arthritis (CIA)-Efficacy and MOA

Introduction: CIA is induced by injection of CII in CFA on Day 0 and boost immunization on Day 21 in DBA/1 mice.

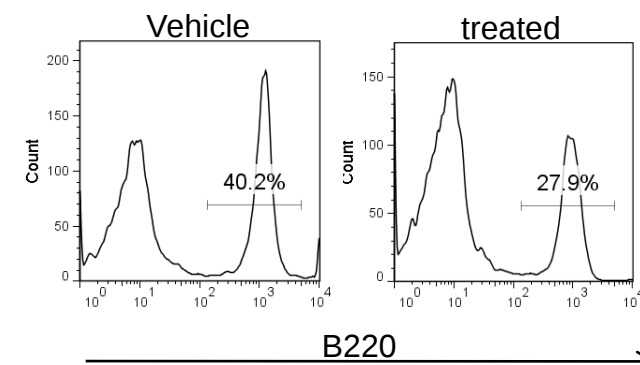
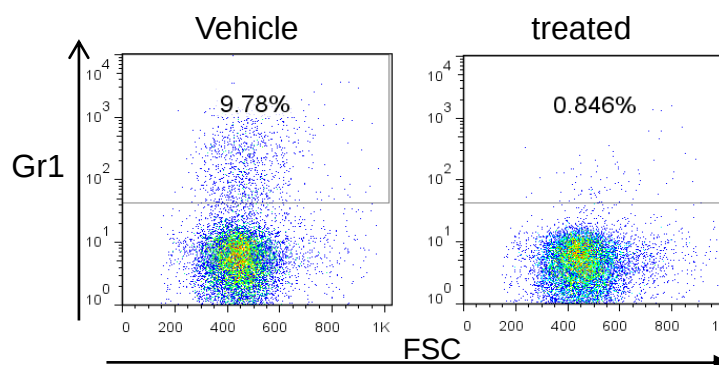
Efficacy evaluation



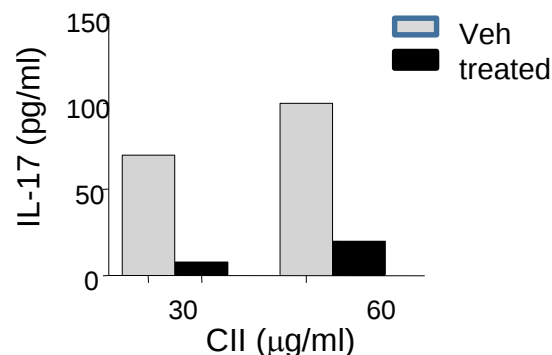
Histology



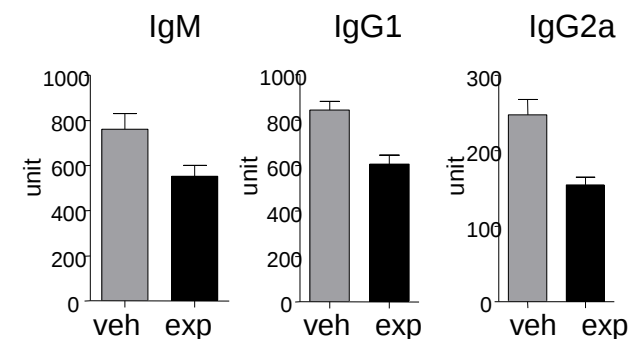
Ex vivo analysis of cellular composition in the draining LN



Ex vivo cellular function

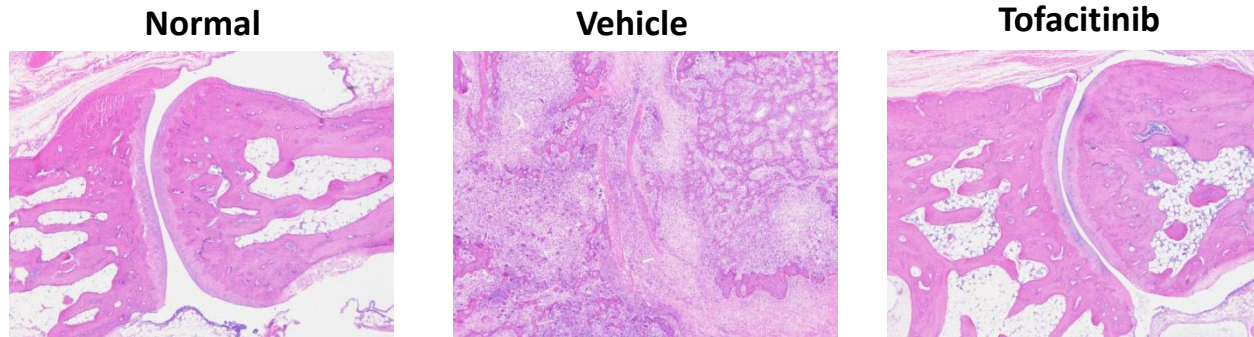
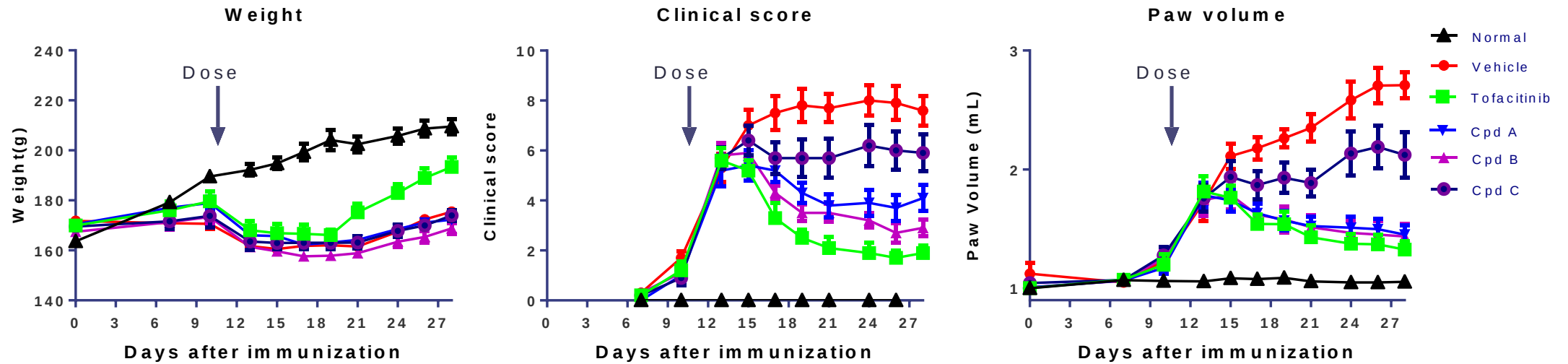


CII-specific antibodies



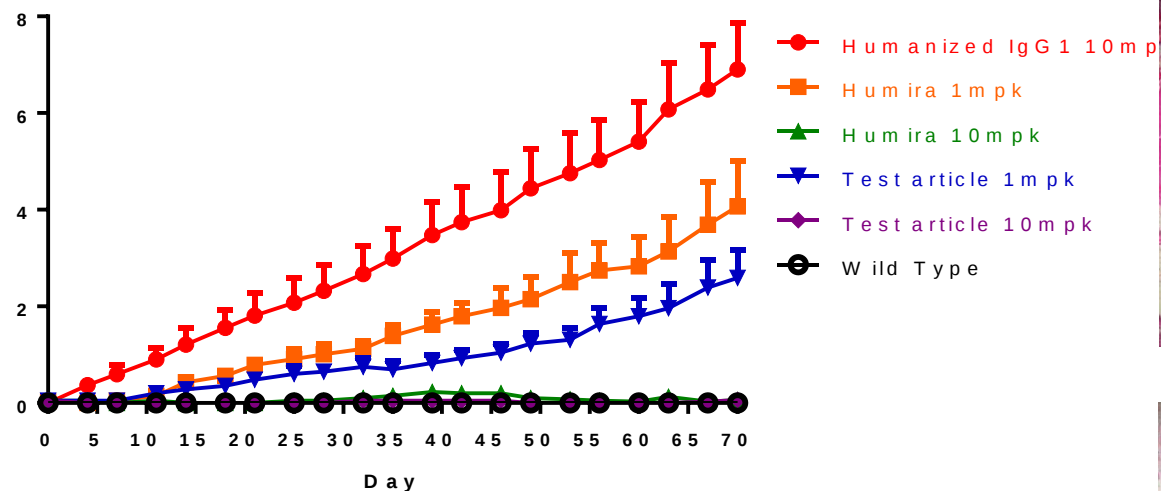
Adjuvant induced Arthritis (AIA)

Introduction: AIA is induced by injection of CFA on Day 0 in Lewis rats

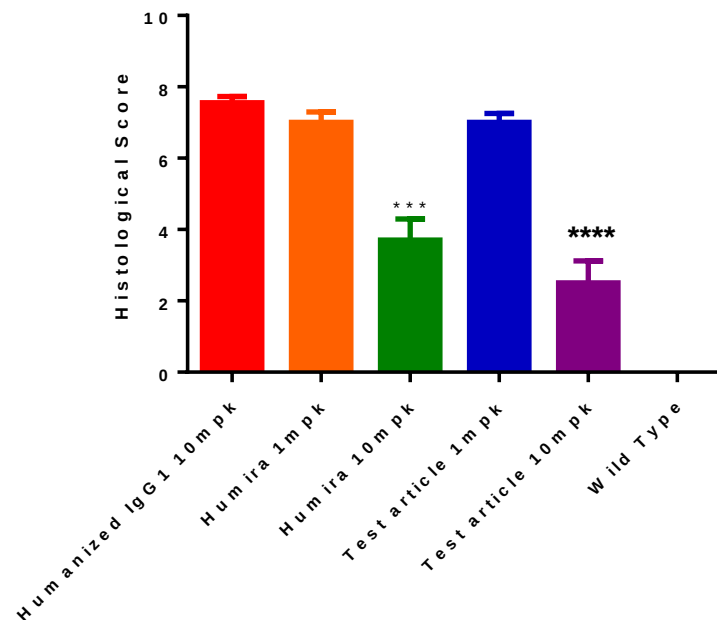


hTNF-a transgenic arthritis model

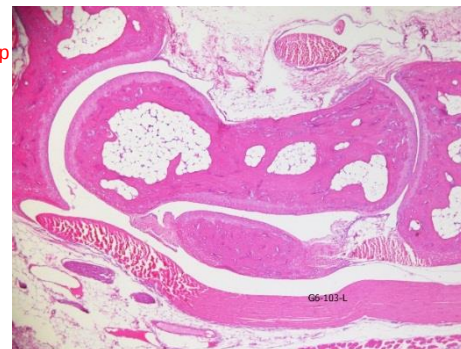
Clinical Score



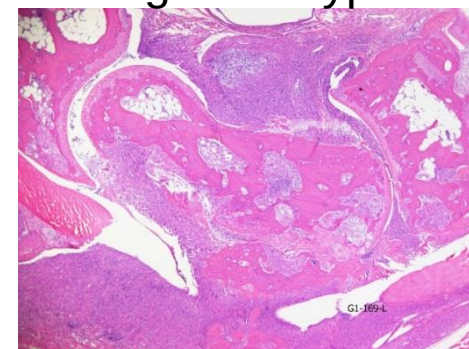
Histological Score



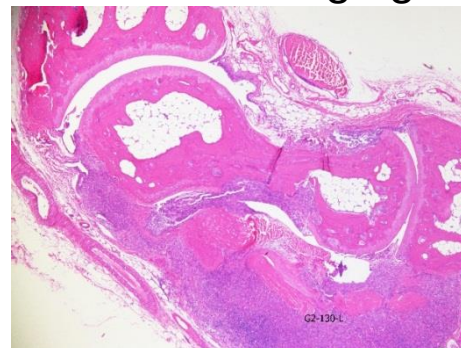
Normal



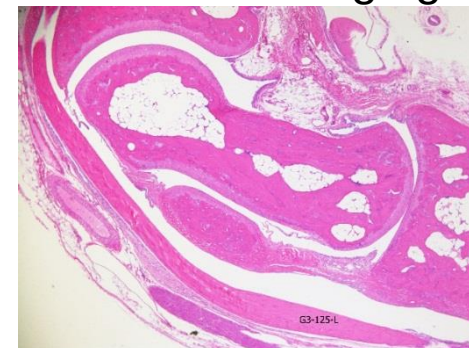
hIgG1 isotype



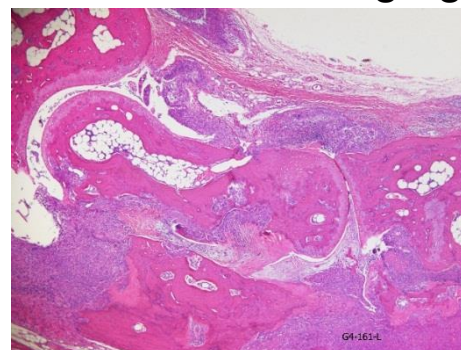
Humira 1mg/kg



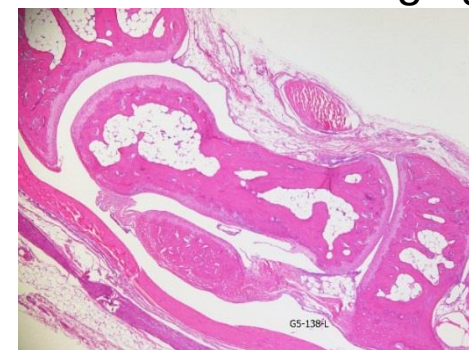
Humira 10mg/kg



Test article 1mg/kg

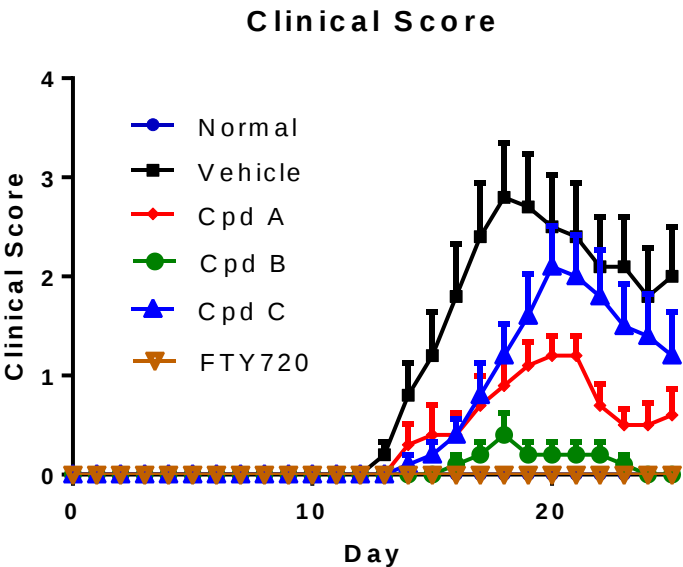


Test article 10mg/kg

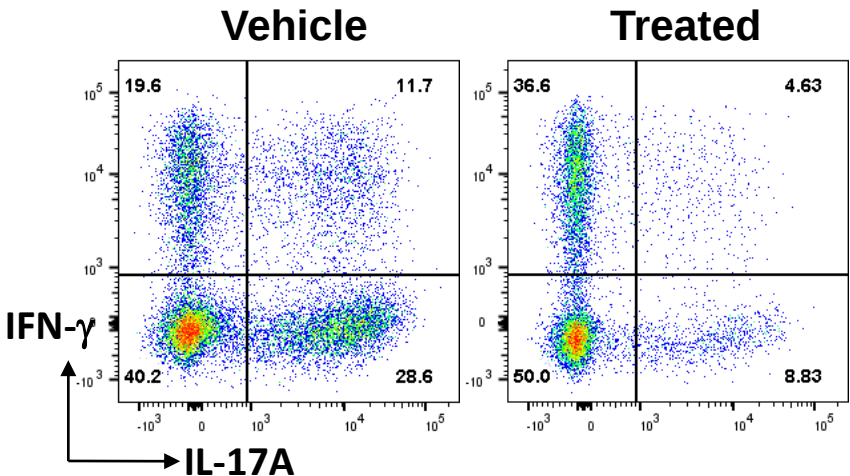


EAE-Efficacy and MOA

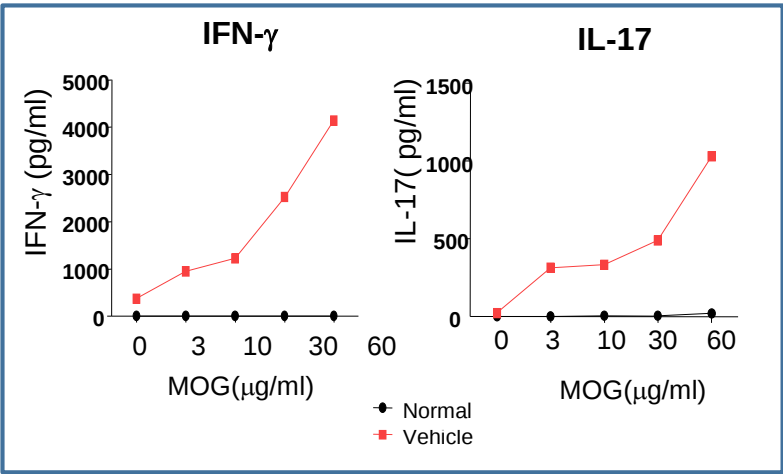
Introduction: EAE is induced by injection of MOG/CFA on Day 0 in C57BL/6 mice



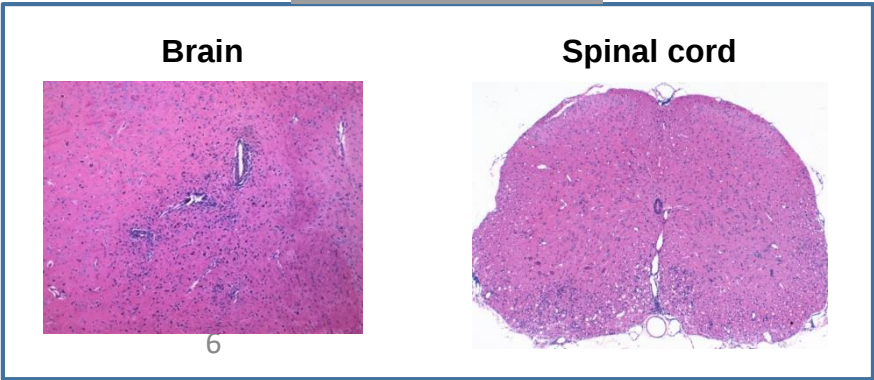
Th1 and Th17 analysis in CNS infiltrated lymphocytes



Cytokine production by lymph node cells after in vitro re-stimulation

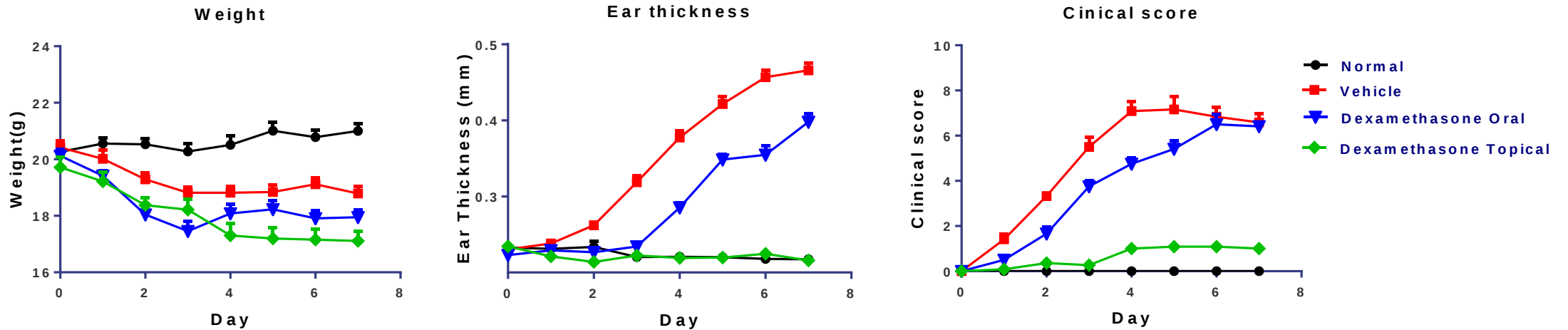


Histopathology



Imiquimod-induced Psoriasis Model in BALB/c Mice

Introduction: Daily topical treatment of imiquimod cream on the shaved back and left ear for 7-10 days to induce psoriasis like disease in Balb/c mice



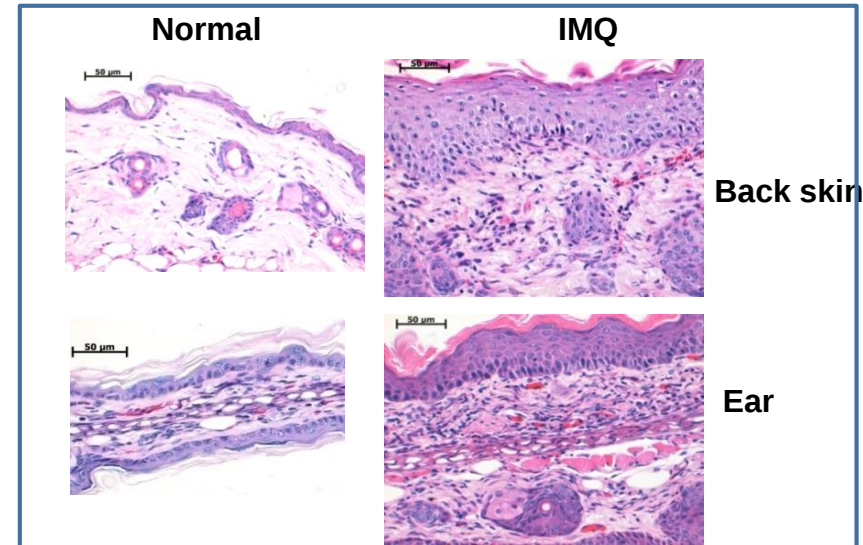
Normal



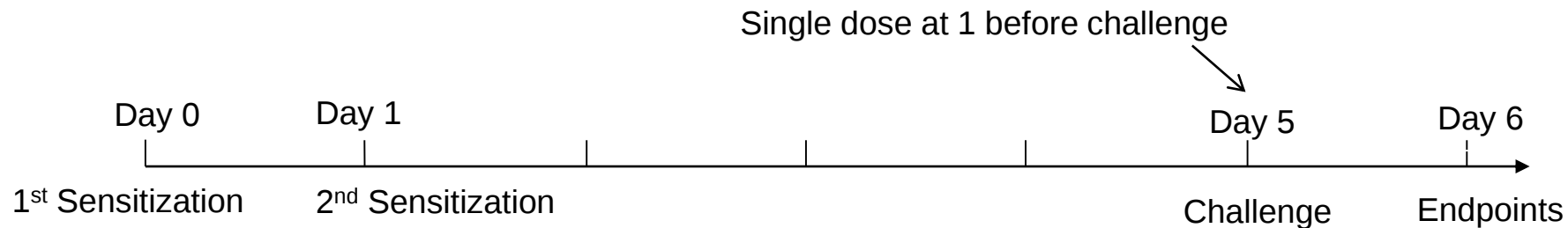
IMQ+Veh



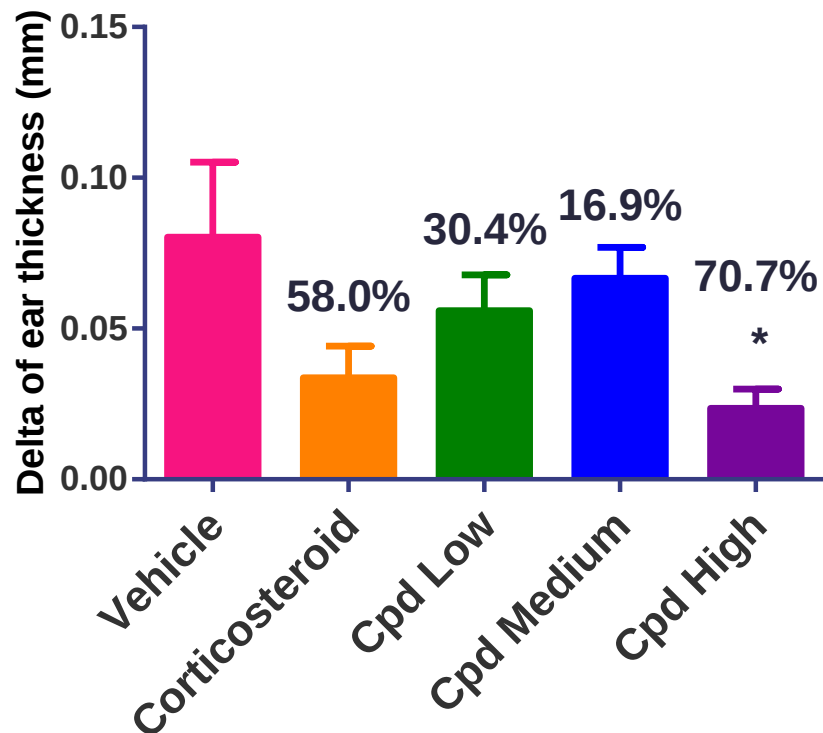
IMQ+
Topical Dex



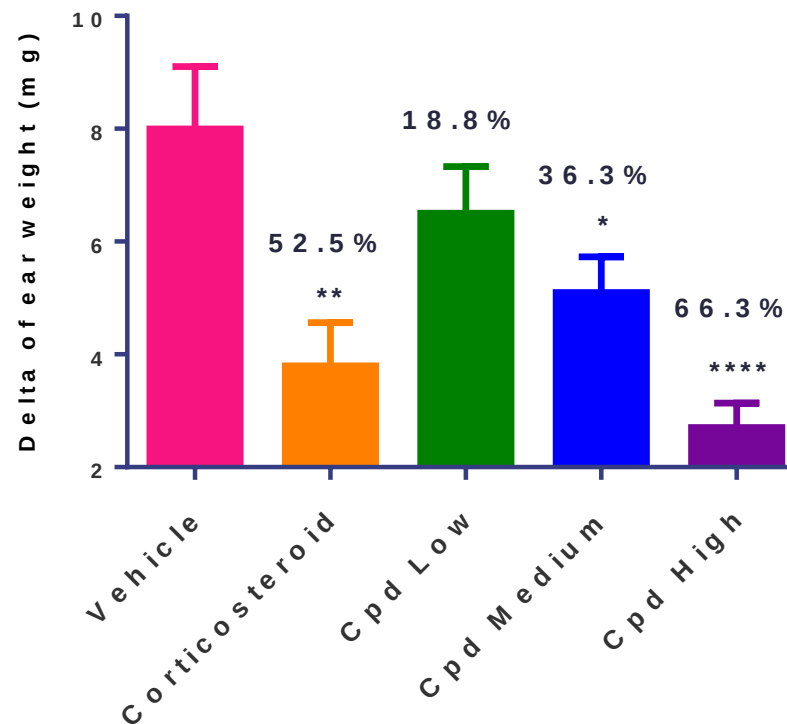
DNFB-induced Delayed-Type Hypersensitivity Model

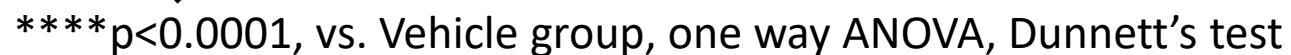


DNFB induced DTH - Ear thickness

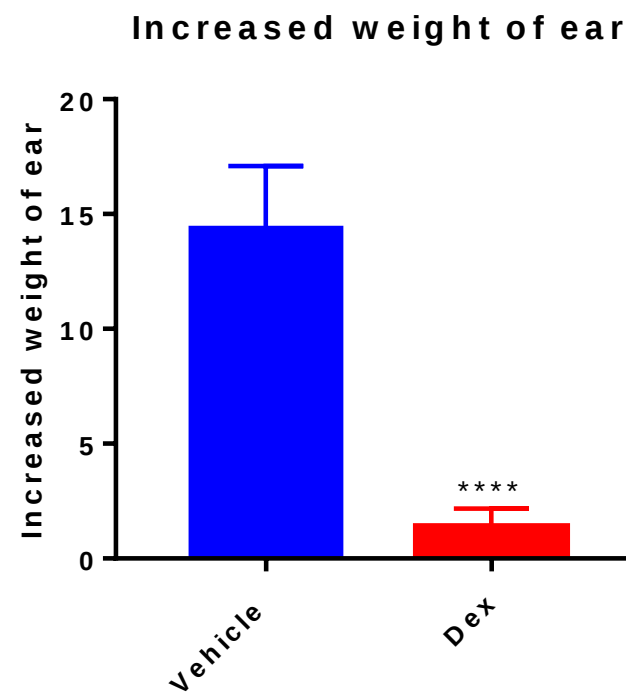
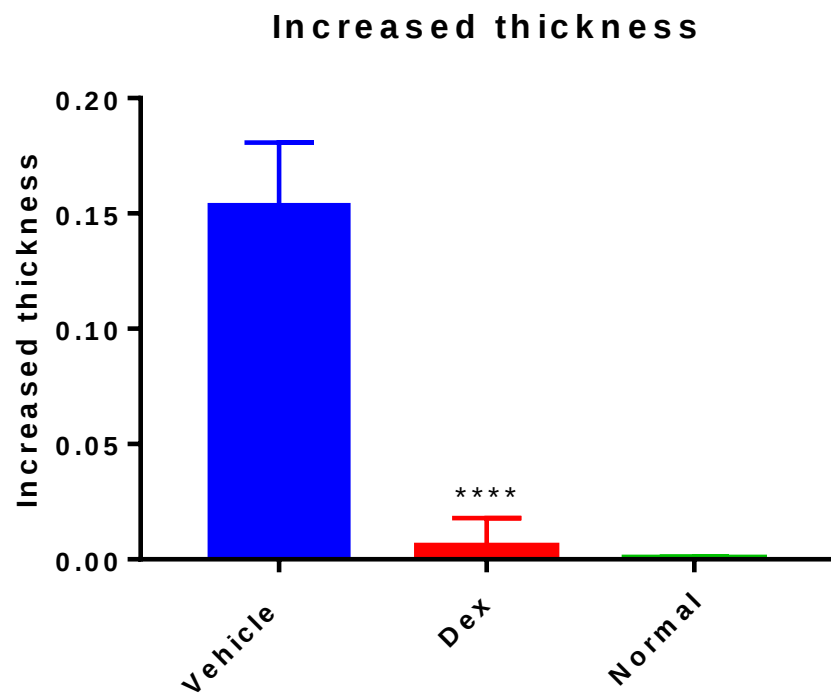
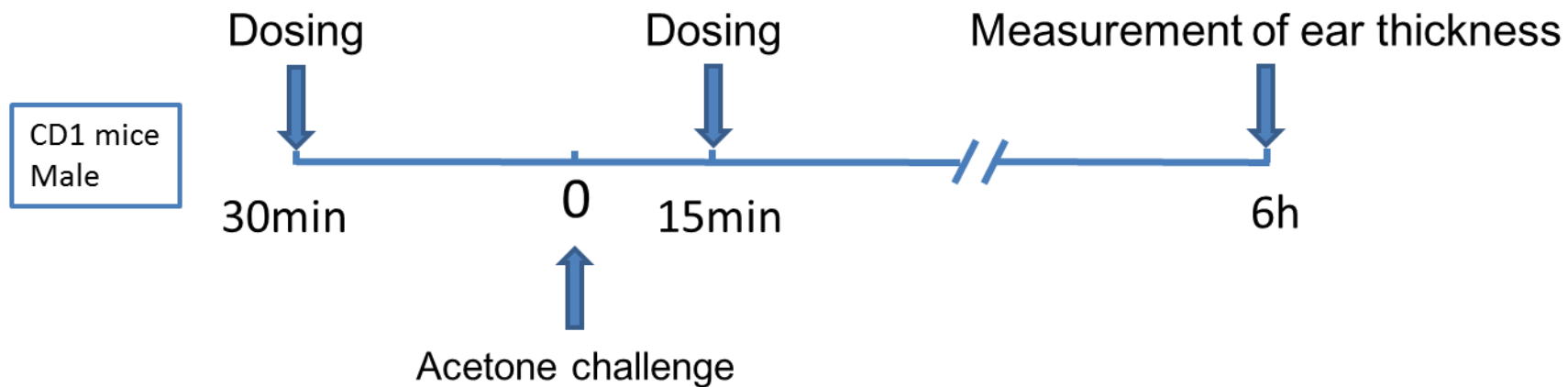


DNFB induced DTH - Ear Weight

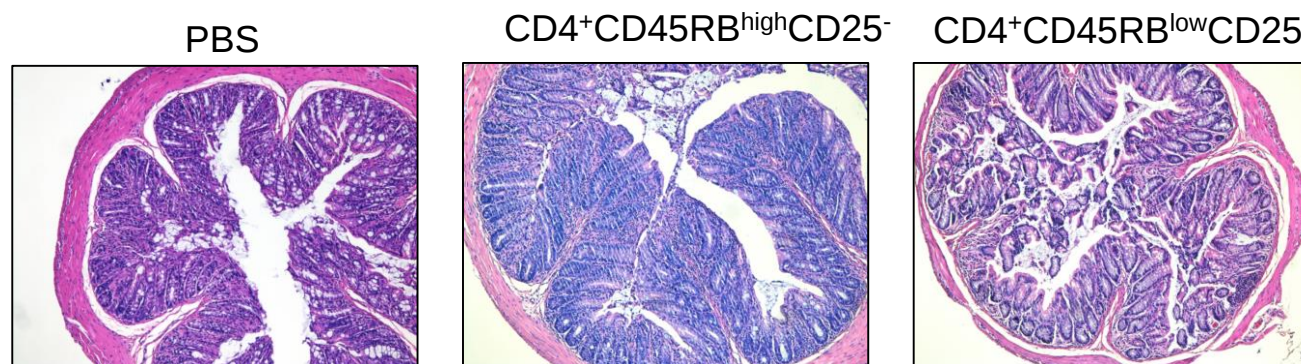
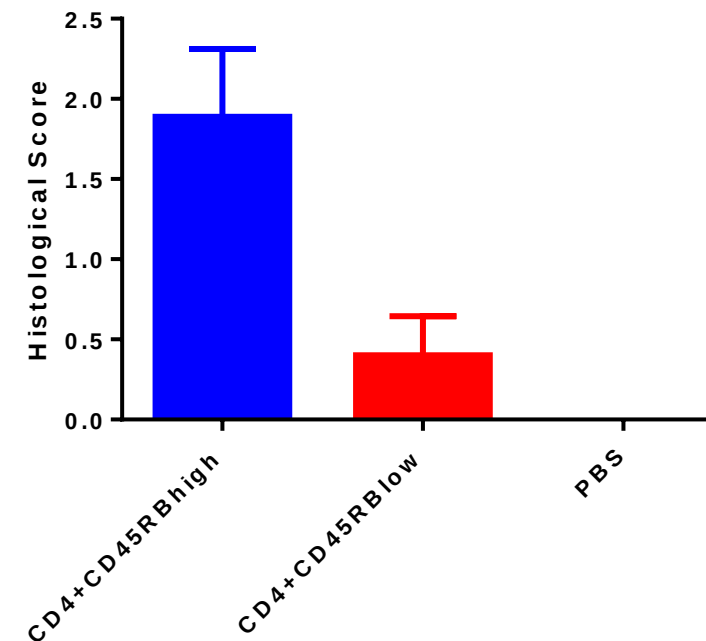
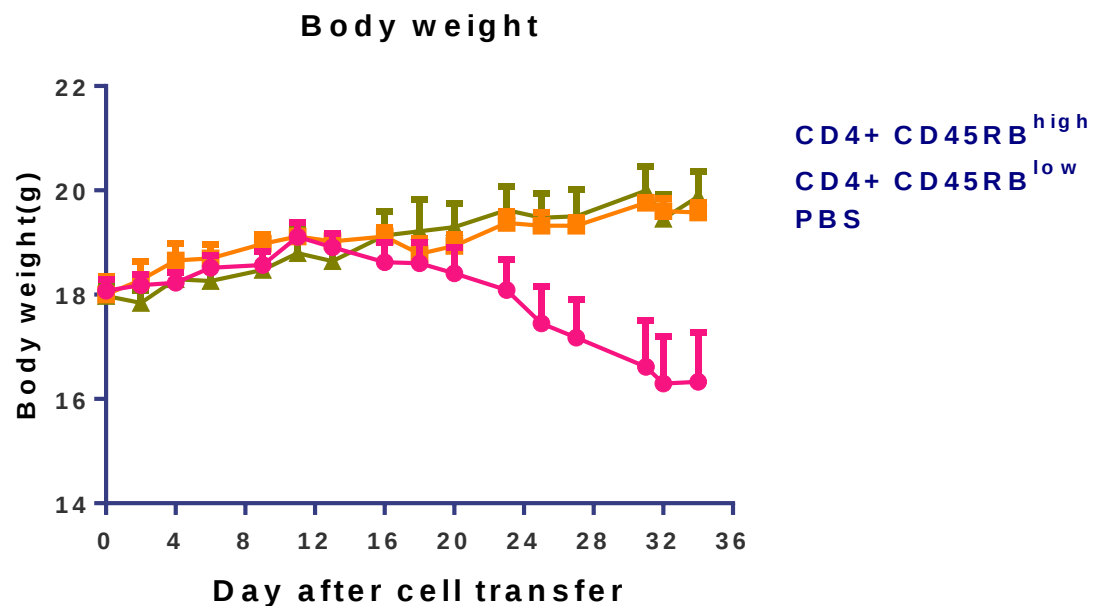


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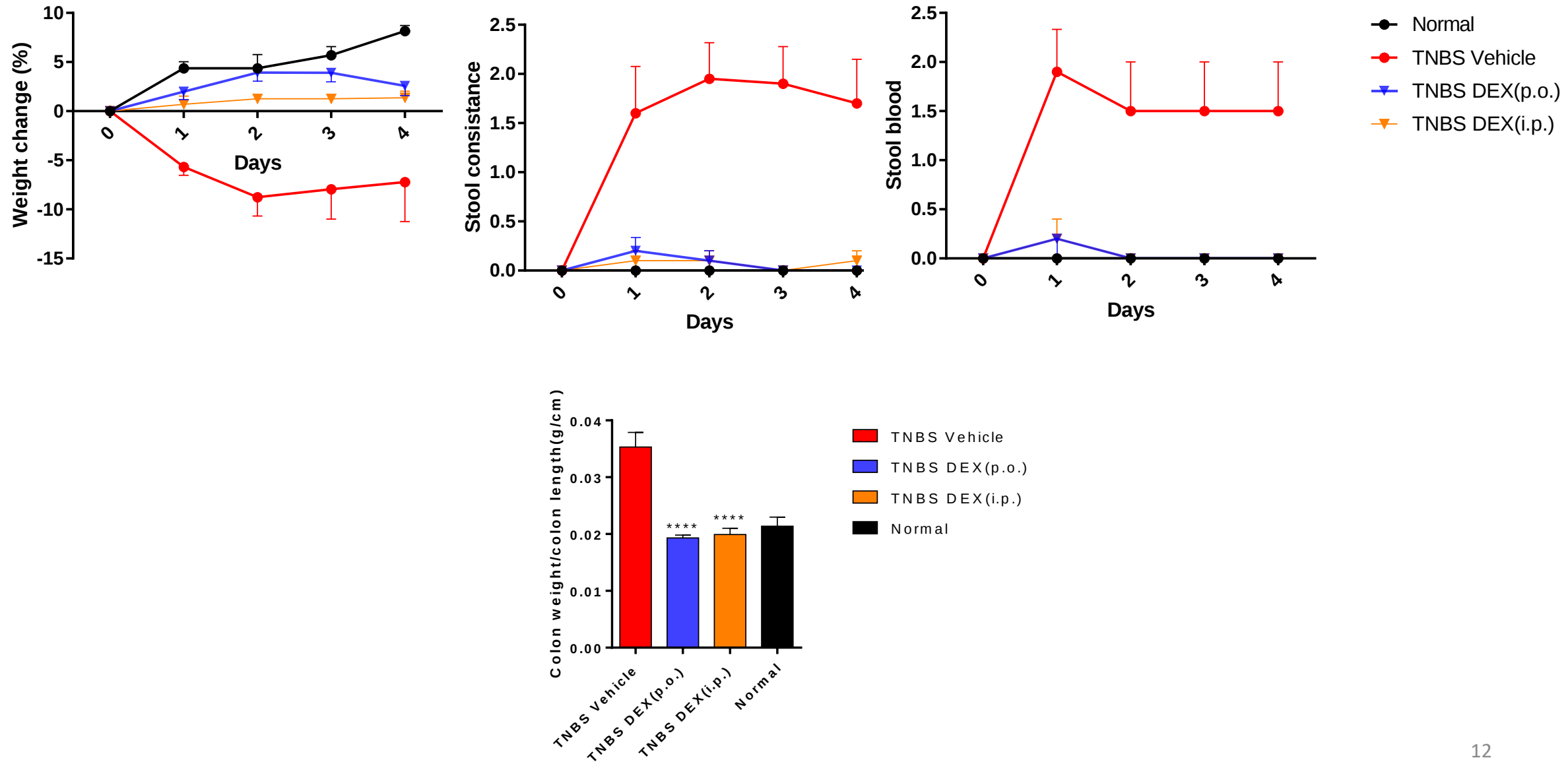
PMA-induced Delayed-Type Hypersensitivity Model



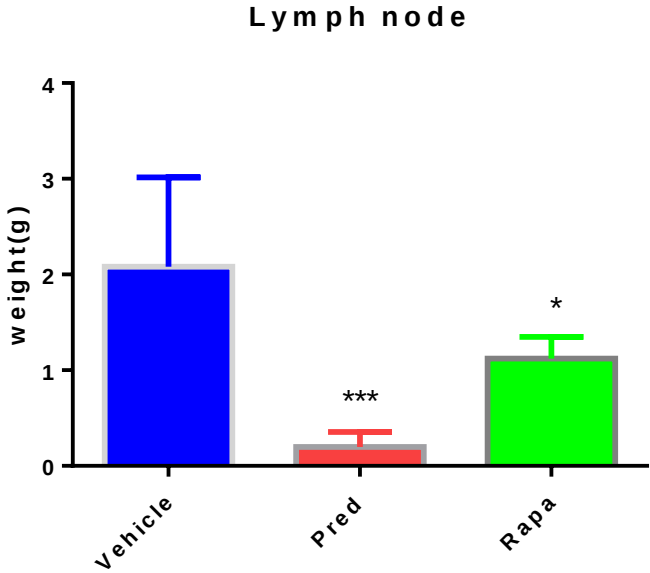
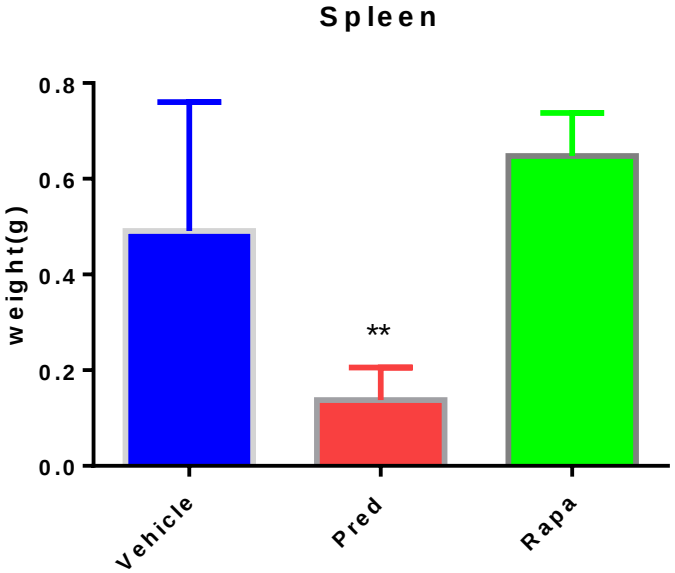
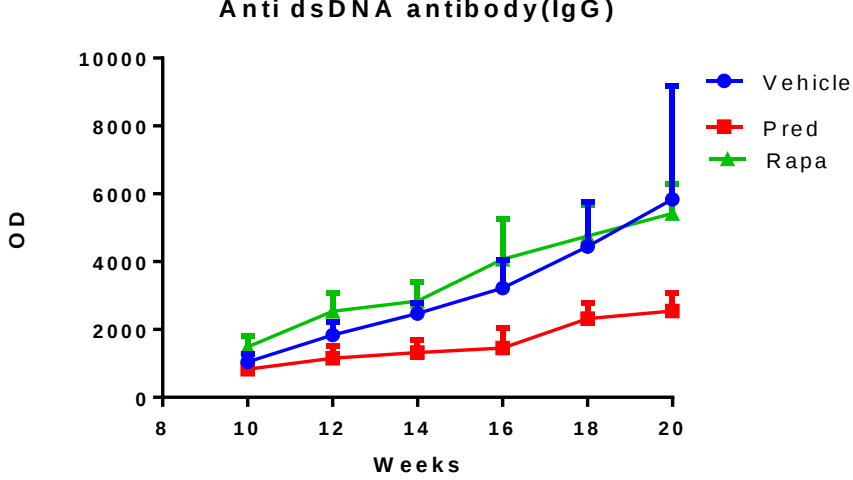
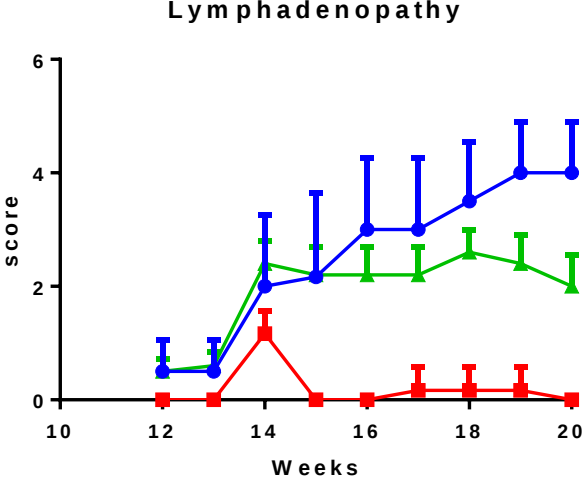
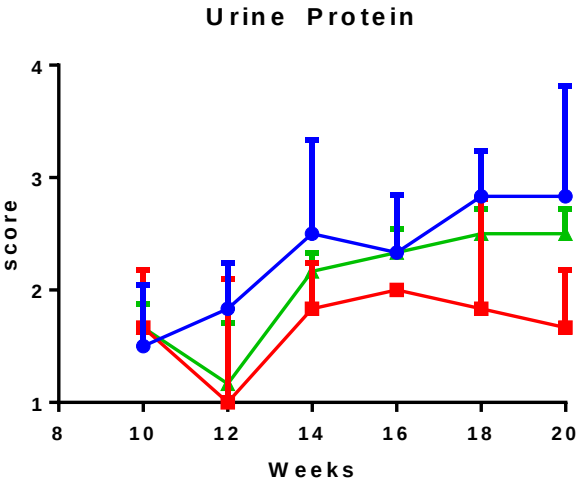
T Cell Transfer Induced IBD model



TNBS-Induced IBD model



MRL/lpr SLE mice model





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