Supplementary Table 1: Overview of vitamins and the immune system.

Biological Agent	Lymphocyte Homing	Cytokines, T_H-cell differentiation	T_{Reg}-cell differentiation	Other effects on T and B cells	Effects on other leukocytes	References
Vitamin D ($1,25(OH)_2VD_3$ or synthetic analogues)	↑ CCR10 on human (but not mouse) T cells and ASCs ↓ FucT VII and ligands for E- and P-selectin ↓ $\alpha_4\beta_7$-integrin, CCR9 ↓ chemokines CCL2, CCL3, CCL5, CXCL10 in effector tissues	↑ T_H2 ↓ T_H1 ↓ T_H17	↑ IL-10-producing T_R1 cells (requires glucocorticoids) ↑ $FOXP3^+$ T_{Reg} cells	↓ T- and B-cell proliferation ↓ $CD8^+$ T cell cytotoxicity ↓ IgG production	↑ cathelicidin and IL-1 ↑ proliferation ↑ VDR and CYP27B1 ↓ DC maturation (↓ expression of MHC and co-stimulatory molecules) ↓ IL-12 and ↑ IL-10 production by DC	5-9, 20-26, 32-42, 99, 103, 104
Vitamin A (retinoic acid or synthetic RAR-agonists)	↑ Gut-homing receptors on T cells, B cells and ASC ($\alpha_4\beta_7$-integrin and CCR9) and T_{Reg} cells ↓ FucT VII and ligands for E- and P-selectin ↓ CCR4	↑ T_H2 ↓ T_H1 ↓ T_H17 (even in the presence of IL-6)	↑ $FOXP3^+$ T_{Reg} cells (requires TGFβ)	Enhances IgA secretion (also requires DCs and IL-5 or IL-6) ↑ iNOS/NO *in vivo* ↑ cytotoxicity and T-cell proliferation ↓ B-cell proliferation ↓ B-cell apoptosis	↑ DC migration to PLNs ↑ DC antigen-presenting capacity	15, 16, 44, 45, 54-60, 62, 64-67, 76, 80, 83-86, 88, 97, 161, 162
Vitamin A (retro-retinoids)	-	-	-	↑ or ↓ B- and T-cell proliferation and survival	-	52, 53, 163
Vitamin E (α-tocopherol)	↓ monocyte adhesion (↓ CD11b, VLA-4) ↓ endothelial VCAM-1, ICAM-1, E-selectin, IL-8	↓ IL-1, IL-6, TNF (monocytes/ macrophages) ↓ IFNγ, FasL (T cells)	-	-	↓ ROS (monocytes/ macrophages)	106-112

ASCs, antibody-secreting cells; FucT, fucosyltransferase; ROS, reactive oxygen species; DC, dendritic cell; PLNs, peripheral lymph nodes; VLA, very late antigen; VCAM, vascular-cell adhesion molecule; ICAM, intercellular cell adhesion molecule; IL, interleukin; TNF, tumour-necrosis factor; IFN, interferon; TGF, transforming growth factor; T_H, T helper; T_R1 cell, IL-10-producing T regulatory type 1 cell; iNOS, inducible nitric oxide synthase; NO, nitric oxide.