

ADAPTIVE HELPER T CELLS



<i>Designation</i>	Th1	Th2	Tfh	Th9	Th17	Th22
<i>Name</i>	Type 1 helper T cell	Type 2 helper T cell	Follicular helper T cell	Type 9 helper T cell	Type 17 helper T cell	Type 22 helper T cell
<i>Phenotype</i>	CD4+	CD4+	CD4+	CD4+	CD4+	CD4+
<i>Chemokine receptors</i>	CCR5 CXCR3	CCR3 CCR4	CXCR5	CCR3, CCR6, CXCR3	CCR6	CCR10
<i>Cytokines which promote generation</i>	IL-12 , IFN- γ	IL-4	IL-6 , IL-21	IL-4, TGF- β	IL-23 , IL-12, IL-1	IL-6, TNF- α , PDGF
<i>Signaling</i>	T-bet	GATA3	Bcl6	PU.1 IRF4	ROR γ t	AHR
<i>Cytokine profile (key cytokines)</i>	IFN-γ , IL-2, TNF- β , IL-18	IL-4 , IL-5, IL-6, IL-10, IL-13, IL-33	IL-21 , IL-6, IL-10	IL-9 , IL-10 CCL17, CCL22	IL-17 , IL-21, IL-22	IL-22 , IL-13, FGF, TNF- β , CCL15, CCL17
<i>Target cells</i>	T cells, B cells, macrophages, dendritic cells	B cells, eosinophils, mast cells	B cells	Mast cells, eosinophils, epitheliocytes, T cells	Neutrophils, T cells, B cells, epitheliocytes	Epitheliocytes, fibroblasts, hepatocytes, neurons
<i>Functional activity</i>	T-cell-mediated and B-cell-mediated responses (antibody switching), defense against intracellular pathogens, activation of macrophages	B-cell-mediated responses, defense against parasites	Differentiation of plasma cells, hypermutations, antibody switching, maturation of memory B cells	Defense against parasites and tumors	Pro-inflammatory effects on mucosae and skin, defense against opportunistic infections (<i>Staph.</i> , <i>Candida</i>)	Preferably anti-inflammatory effects on mucosae and skin, maintenance of epithelial integrity, tissue regeneration

<i>Pathological activity</i>	Type IV hypersensitivity and autoimmune diseases	Type I hypersensitivity (IgE dependent diseases, atopies)	Autoimmune disorders	Allergic and autoimmune reactions	Autoimmune diseases	Chronic skin inflammation, atopic dermatitis
<i>Cooperation</i>	Th17, ILC1, ILC17	Tfh, Th22, Th9, ILC2, ILC22	Th2	Th2, Tfh	Th1, ILC1, ILC17, phagocytes	Th2, Th9, ILC2, ILC22

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