

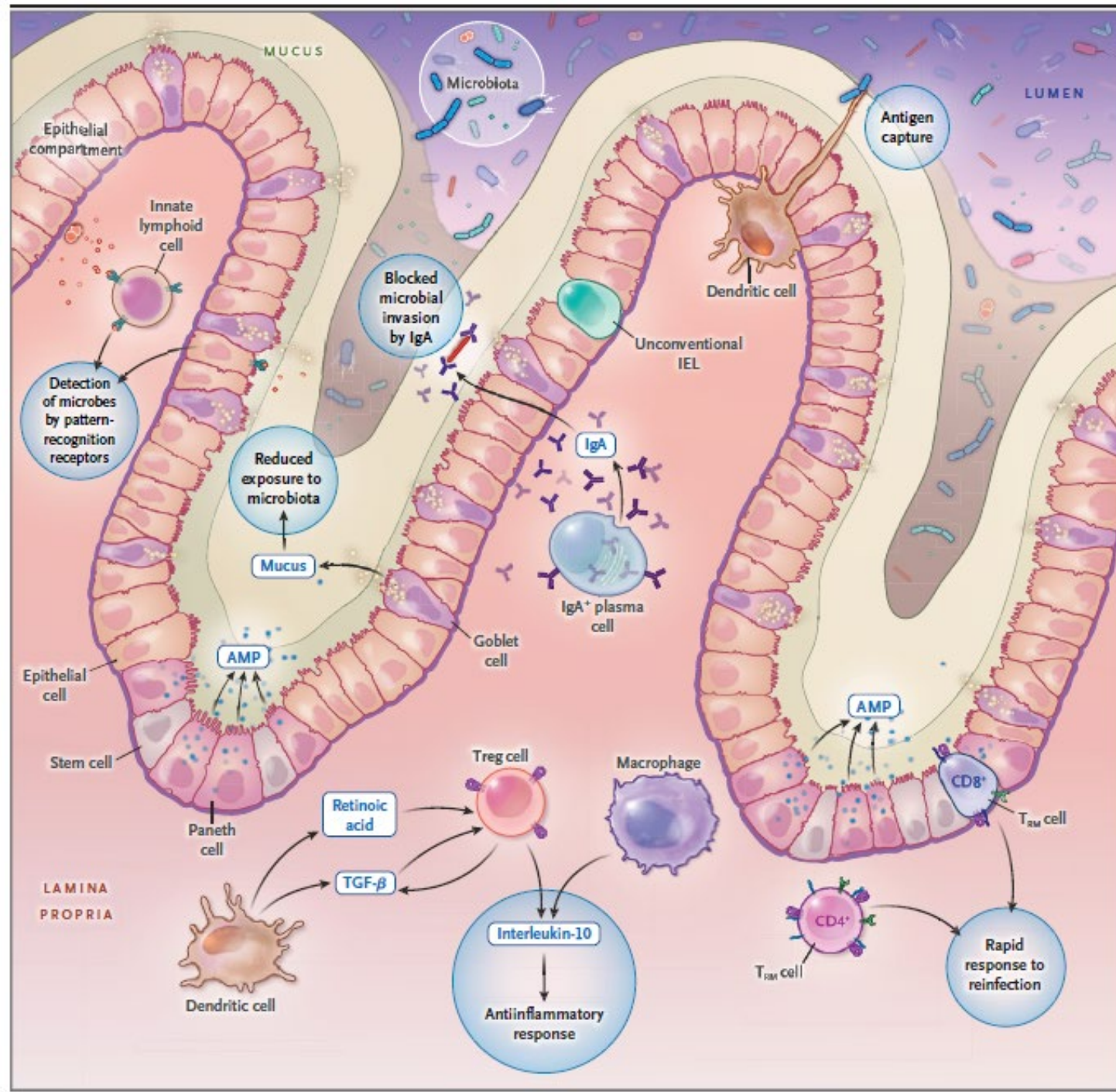
一般名(商品名)	作用機序	投与方法	投与間隔
インフリキシマブ (レミケード)	抗TNF α 抗体	点滴静注	初回投与後、2週、6週に投与し、以降は8週間の間隔で投与
アダリムマブ (ヒュミラ)	抗TNF α 抗体	皮下注射(自己注射可)	初回、2週に投与し、4週目以降は2週間の間隔で投与
ゴリムマブ (シンボニー)	抗TNF α 抗体	皮下注射	初回投与後、2週に投与し、6週目以降は4週間の間隔で投与
トファシチニブ (ゼルヤンツ)	JAK阻害薬	経口	1日2回投与
ベドリズマブ (エンタイビオ)	抗 $\alpha 4\beta 7$ インテグリン抗体	点滴静注	初回、2週、6週に投与し、以降は8週間の間隔で投与

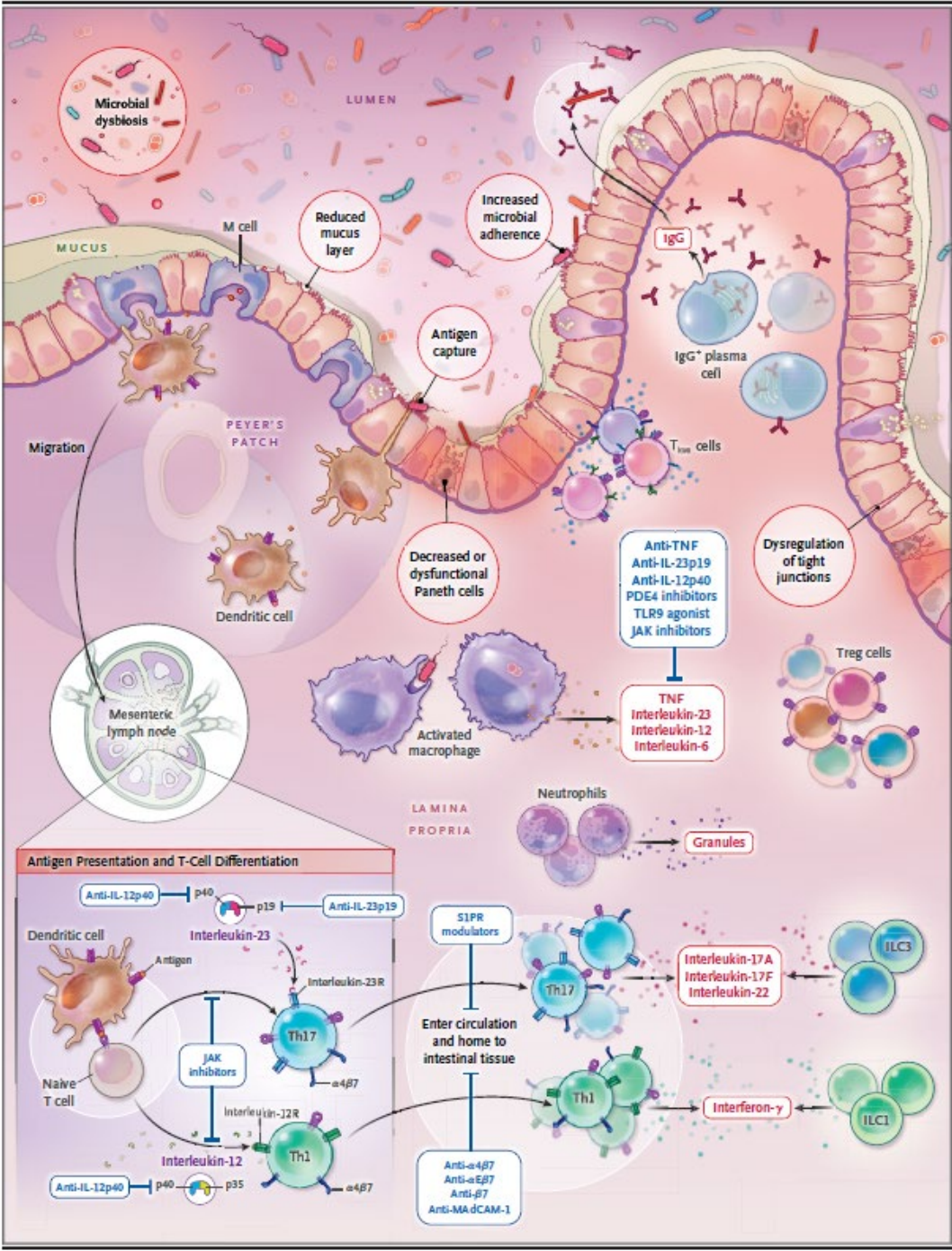
※バイオ後続品は除く

薬物療法	アミノサリチル酸製剤(5-ASA製剤)
	ステロイド薬
	免疫調節薬
	免疫抑制薬
	JAK阻害薬
	生物学的製剤(抗TNF α 抗体、抗 $\alpha 4\beta 7$ インテグリン抗体)
血球成分除去療法	
外科手術	

Table S1. Selected Cellular Types, Functions, Changes in Inflammatory Bowel Disease (IBD), and Therapeutic Targets.*

Cell Type	Functions	Alterations Associated with IBD†	Approved (A) or Investigational (I) Targeted Therapy‡
Enterocyte ¹	Barrier function, nutrient absorption	Somatic mutations in IBD tissue ^{2,3} ; increased expression of pore-forming, tight-junction protein claudin-2 in UC ⁴ and CD ⁵	I: MSC-based therapy
Goblet cell	Secretion of mucus and antimicrobial molecules (e.g., trefoil factor, RELM-β)	Reduced mucus layer, ^{6,7} loss of anti-protease molecule WFDC2 in UC ⁸	
Paneth cell	Secretion of antimicrobial peptides (e.g., defensins, Reg3a)	Reduced α-defensins 5 and 6 in iCD ⁹	
Tuft cell	Chemosensor, type 2 immunity ¹⁰⁻¹²	Decreased tuft cells in iCD ¹³	
Mesenchymal cell	Matrix remodeling, epithelial homeostasis	Enriched interleukin-33+ myofibroblast cluster in UC ¹⁴	I: MSC-based therapy
Microfold cell	Antigen sampling	Expanded in UC ¹⁵	
Monocyte or macrophage ¹⁶	Phagocytosis, disposal of infected epithelial cells, cytokine secretion, antigen presentation	Increased CD14+ subset in CD, ¹⁷ increased CD14+CD163 ¹⁸ subset in CD, ¹⁸ increased CD68+CD206- subset in iCD ¹⁹	A: Anti-interleukin-23 and anti-interleukin-12 antibodies A: Anti-TNF antibody A: JAK inhibitor I: PDE4 inhibitor I: MSC-based therapy I: TLR9 agonist
Dendritic cell ²⁰	Antigen uptake and presentation, initiation of immune responses; subsets include cDC1, cDC2, pDC, moDC, LC	Increased interleukin-1β+ cDCs and pDCs in CD peripheral blood ²¹	A: Anti-interleukin-23 and anti-interleukin-12 antibodies A: JAK inhibitor I: MSC-based therapy
Neutrophil ^{22,23}	Phagocytosis, release of intracellular granules, formation of NETs to trap and neutralize microbes	Increased CD177+ subset in IBD peripheral blood, ²⁴ NETs in active IBD ²⁵	
MAIT cell ^{26,27}	Cytokine secretion	Numbers increased ^{28,29} decreased, ³⁰ or unchanged ³¹ in IBD	A: Anti-interleukin-23 and anti-interleukin-12 antibodies A: anti-TNF antibody
ILC ^{32,33}	Cytokine secretion, potentiation of adaptive immunity, regulation of tissue inflammation and remodeling; subsets include NK, ILC1, ILC2, ILC3, LTI	Increased interferon-γ+ ILC1 in CD tissue, ^{34,35} conversion of ILC2 to ILC1-like phenotype in CD, ³⁶ increased interleukin-22 production by IBD-derived ILC3 ³⁷	A: Anti-interleukin-23 and anti-interleukin-12 antibodies A: Anti-TNF antibody A: JAK inhibitor I: MSC-based therapy
B cell	Mucosal IgA production	IgG predominance in IBD ^{38,39}	A: Anti-integrin antibody I: S1PR modulator
Effector CD4+ T cell ⁴⁰	Cytokine secretion, help for innate and adaptive immune cells; subsets include Th1, Th2, Th9, Th17, Th22, T _H	Increased interferon-γ+ Th1 cells in IBD, ⁴¹ increased interleukin-17+ Th17 cells in IBD ⁴²	A: Anti-interleukin-23 and anti-interleukin-12 antibodies A: Anti-TNF antibody A: JAK inhibitor A: Anti-integrin antibody I: S1PR modulator I: Microbe-based approach I: PDE4 inhibitor I: MSC-based therapy I: TLR9 agonist
Regulatory CD4+ T cell ⁴³	Reduction of inflammation through multiple mechanisms	Increased total Treg cells in IBD, ^{44,45} increased RORγt+interleukin-17A+ subset in IBD ^{21,46}	A: Anti-integrin antibody I: S1PR modulator I: Microbe-based approach I: MSC-based therapy
Conventional CD8+ (TCRαβ CD8αβ) T cell ⁴⁷	Cytotoxicity, cytokine secretion; memory T-cell subsets include T _{CM} , T _{EM} , T _{EMRA} , T _{PM} , T _{RM}	Increased Eomes+CD8+ T _{RM} -cell cluster in UC, ³⁷ increased interleukin-17A+CD8+ T cells in IBD, ^{35,48} increased interleukin-26+CD8+ T cells in UC ⁴⁹ , increased CD8+ T cells in ileal-anal pouch in UC ⁵⁰	A: Anti-TNF antibody A: JAK inhibitor A: anti-integrin antibody I: S1PR modulator I: MSC-based therapy





Antigen Presentation and T-Cell Differentiation

