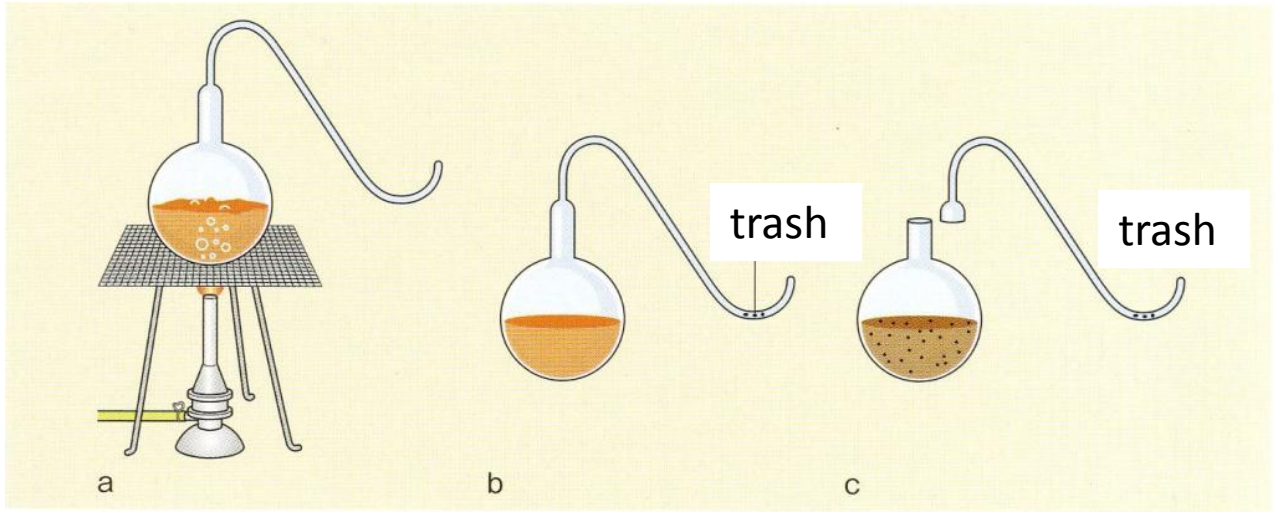
Research interests of Tetsuya Mine

Professor and Chief
Division of Gastroenterology and Hepatology,
Department of Internal Medicine,
University of Tokai School of Medicine
Japan

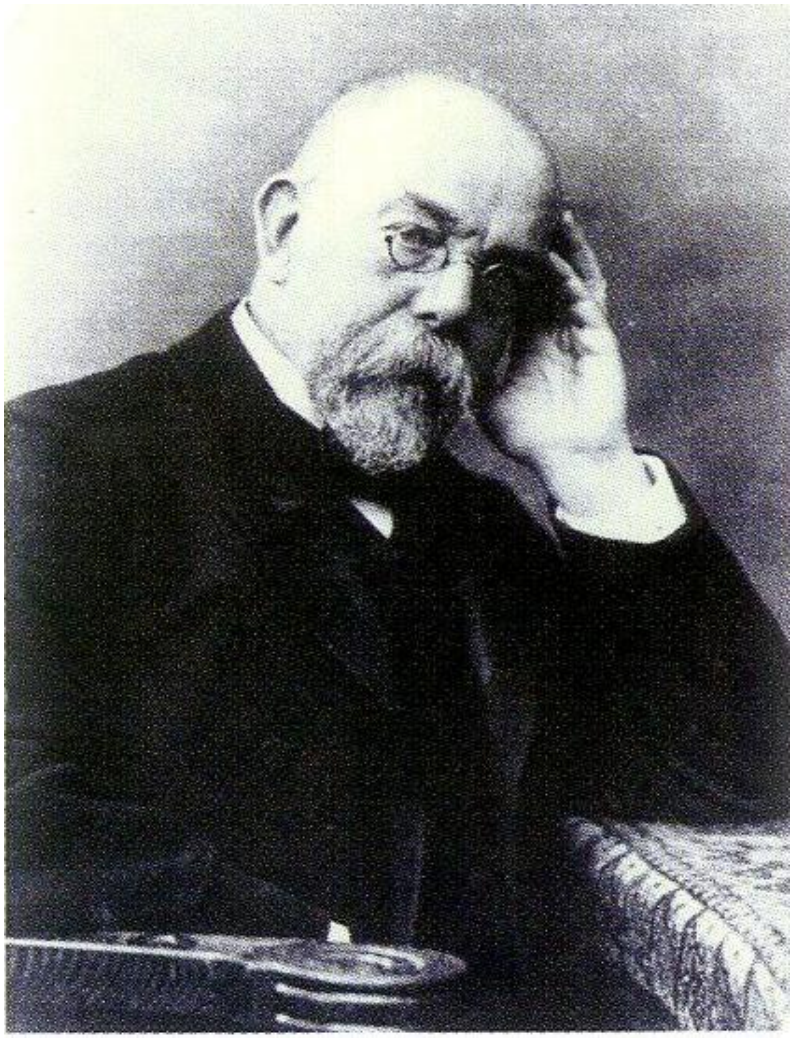
Ilya Mechnikov

no death due to yogurt

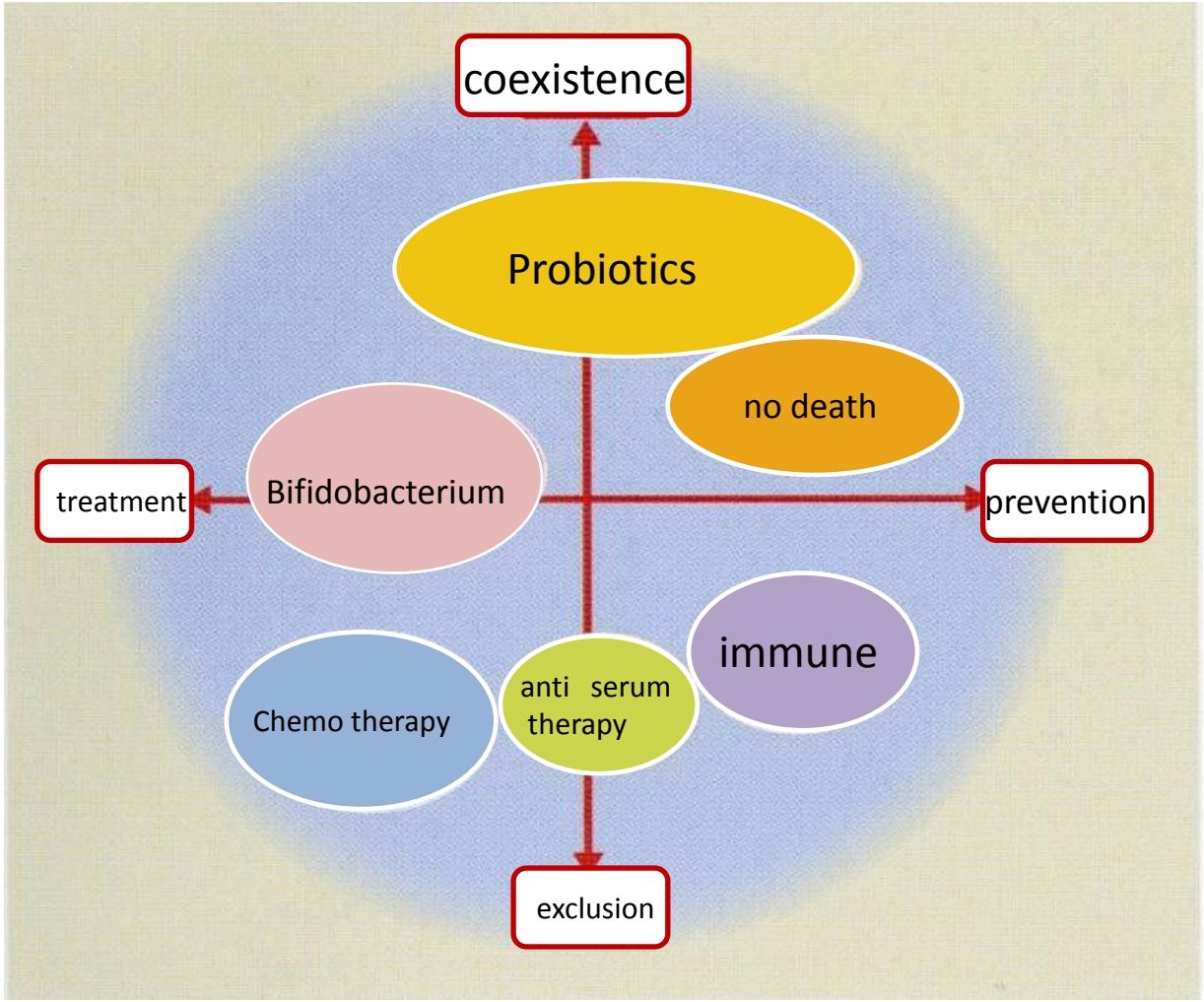
Louis Pasteur



Experiments by Pasteur



Robert Koch



Position of Probiotics

Intestional flora healthy volunteer (by culture)

High incidence (>60%)	middle (>30%>60%)	low incidence (<30%)
Bacteroides fragilis group		
B. vulgatus, B. uniformis,		*B. ovatus, B. splanchnicus,*
B. thetaiotaomicron		*B. ureolyticus, B. putredinis*
Parabacteroides distasonis		
Bacteroides spp.		
Prevotella spp.		*P. veroralis*
Faecalibacterium prausnitzii		
Fusobacterium russii		*F. naviforme, F. nucleatum,* *F. mortiferum, F. varium*
	Lactobacillus	*Mitsuokella multiacida*
	L. catenaforme	
Bifidobacterium		
B. adolescentis, B. longum,		*B. breve*
B. catenulatum, B. pseudocatenulatum		
Collinsella aerofaciens		
Eubacterium rectale		*E. moniliforme*
Eubacterium spp.		
Ruminococcus obeum		
Ruminococcus productus		
Ruminococcus spp.		
Peptostreptococcus spp.		*P. anaerobius, P. prevotii*
Clostridium		
C. innocuum, C. ramosum, *C. clostridioforme*	*C. beijerinckii, C. coccoides,* *C. butyricum* *C. paraputrificum, C. perfringens*	

Benno Y, et al

Intestinal flora (16SrDNA) in healthy volunteer

bacteria	healthy			vegetarian	elderly		
	A	B	C		D	E	F
Clostridium cluster I	0	1.1	0	0	0	0	0
Clostridium cluster IV (*Clostridium leptum group*)	22.7	12.4	11	13.1	34.7	16.1	9.5
Clostridium cluster IX	0	9.8	34	0	0	35.8	14.3
Clostridium cluster XI	0	0.4	0.8	0	0	1.2	0
Clostridium subcluster XIVa (*Clostridium coccoides group*)	58.8	23.7	29	59.6	25.3	2.5	3.6
Clostridium subcluster XIVb	0.5	0	0	0	0	0	0
Clostridium cluster XVI	0	4.1	0	1.7	4	0	0
Clostridium cluster XVII	0	8.3	0	0	0	2.5	0
Clostridium cluster XVIII	0	0	0.4	12	0	0	0
Bifidobacterium	0	0.4	5.3	0.5	0	0	0
Lactobacillus	0	0	0	0	0	1.2	0
Cytophaga-Flexibacter-Bacteroides	5	9.4	16.3	6	20	8.6	15.4
Streptococcus	3.7	28.8	0.4	0	2.7	1.2	0
Proteobacteria	0.5	0.8	1.6	0	5.3	17.3	54.8
others	8.8	0.8	1.2	7.1	8	13.6	2.4

Hayashi H. et al.

bacteria	primer	Specific array	size
Bifidobacterium	g-Bifid-F	CTCCTGGAAACGGGTGG	549~563
	g-Bifid-R	GGTGTTCTTCCCGATATCTACA	
B. adolescentis	BiADOg-1a	CTCCAGTTGGATGCATGTC	279
	BiADOg-1b	TCCAGTTGACCGCATGGT	
	BiADO-2	CGAAGGCTTGCTCCCAGT	
B. angulatum	BiANG-1	CAGTCCATCGCATGGTGGT	275
	BiANG-2	GAAGGCTTGCTCCCCAAC	
B. bifidum	BiBIF-1	CCACATGATCGCATGTGATTG	278
	BiBIF-2	CCGAAGGCTTGCTCCCAAA	
B. breve	BiBRE-1	CCGGATGCTCCATCACAC	288
	BiBRE-2	ACAAAGTGCCTTGCTCCCT	
B. catenulatum	BiCATg-1	CGGATGCTCCGACTCCT	285
	BiCATg-2	CGAAGGCTTGCTCCCGAT	
B. longum	BiLON-1	TTCCAGTTGATCGCATGGTC	831
	BiLON-2	GGGAAGCCGTATCTCTACGA	
B. infantis	BiINF-1	TTCCAGTTGATCGCATGGTC	828
	BiINF-2	GGAAACCCCATCTCTGGGAT	
B. dentium	BiDEN-1	ATCCCGGGGGTTCGCCT	387
	BiDEN-2	GAAGGGCTTGCTCCCGA	
B. gallicum	BiGAL-1	TAATACCGGATGTTCCGCTC	303
	BiGAL-2	ACATCCCCGAAAGGACGC	

Matsuki T. et al

Specific primer for Bifidobacterium

Numbers of bacteria in stool of healthy volunteer

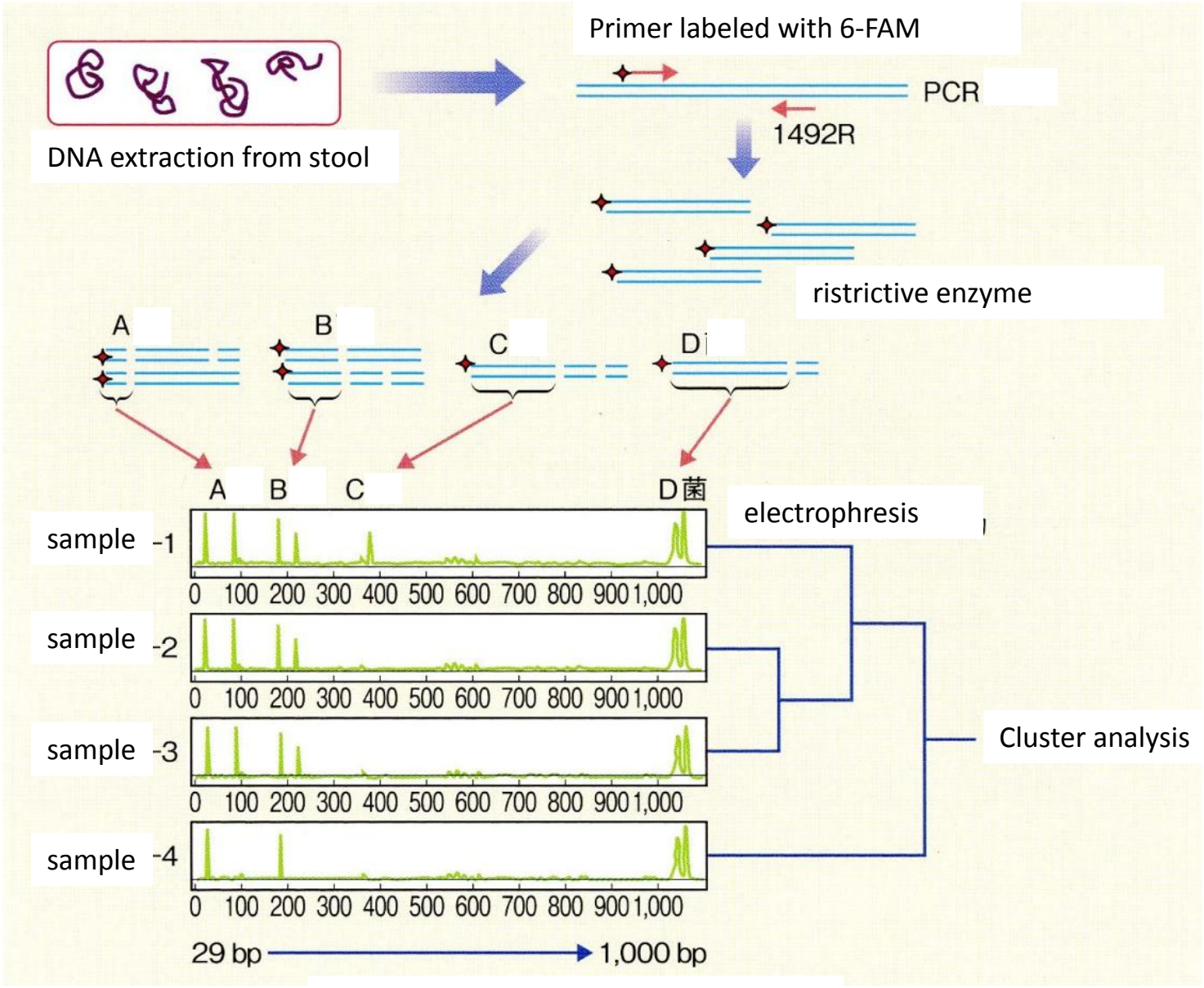
bacteria	M ±SD	Positive(%)
Bifidobacterium	9.4 ± 0.7	100
B. adolescentis	9.1 ± 0.9	82.6
B. angulatum	6.6 ± 0.2	10.9
B. bifidum	8.3 ± 0.8	28.3
B. breve	7.3 ± 0.7	17.4
B. catenulatum	8.9 ± 0.8	89.1
B. longum	8.1 ± 0.7	95.7
B. infantis	6.9 ± 0.7	4.3
B. dentium	7.2 ± 0.5	8.7

Matsuki T, et al.

Analysis of bacteria in healthy volunteer

bacteria	M ± SD	positive(%)
Clostridium coccoides	10.3 ± 0.3	100
Clostridium leptum	9.9 ± 0.7	100
Bacteroides fragilis	9.9 ± 0.3	100
Bifidobacterium	9.4 ± 0.7	100
Atopobium	9.3 ± 0.7	100
Prevotella	9.7 ± 0.8	45.7

Matsuki T, et al



Analysis of intestinal flora

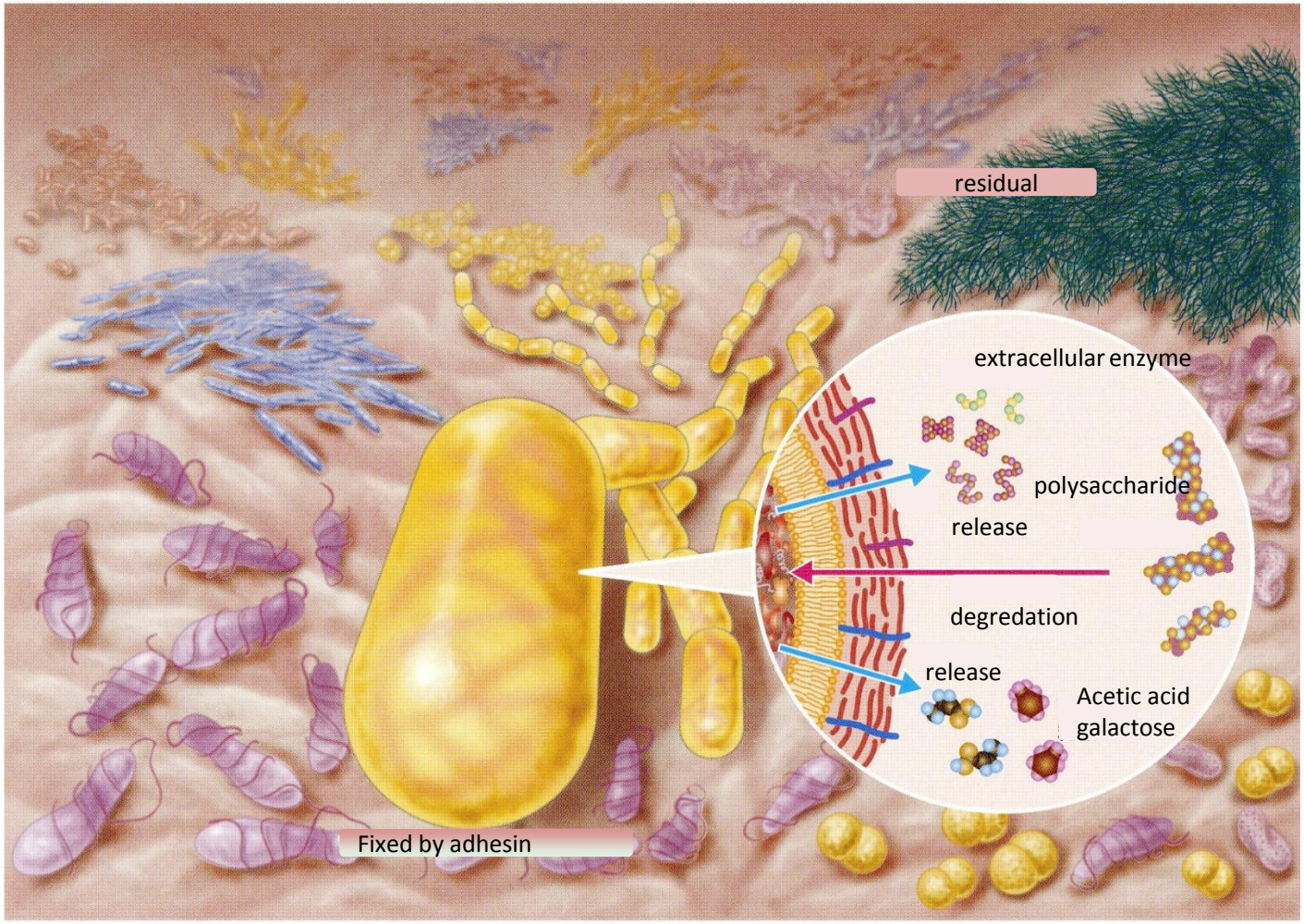
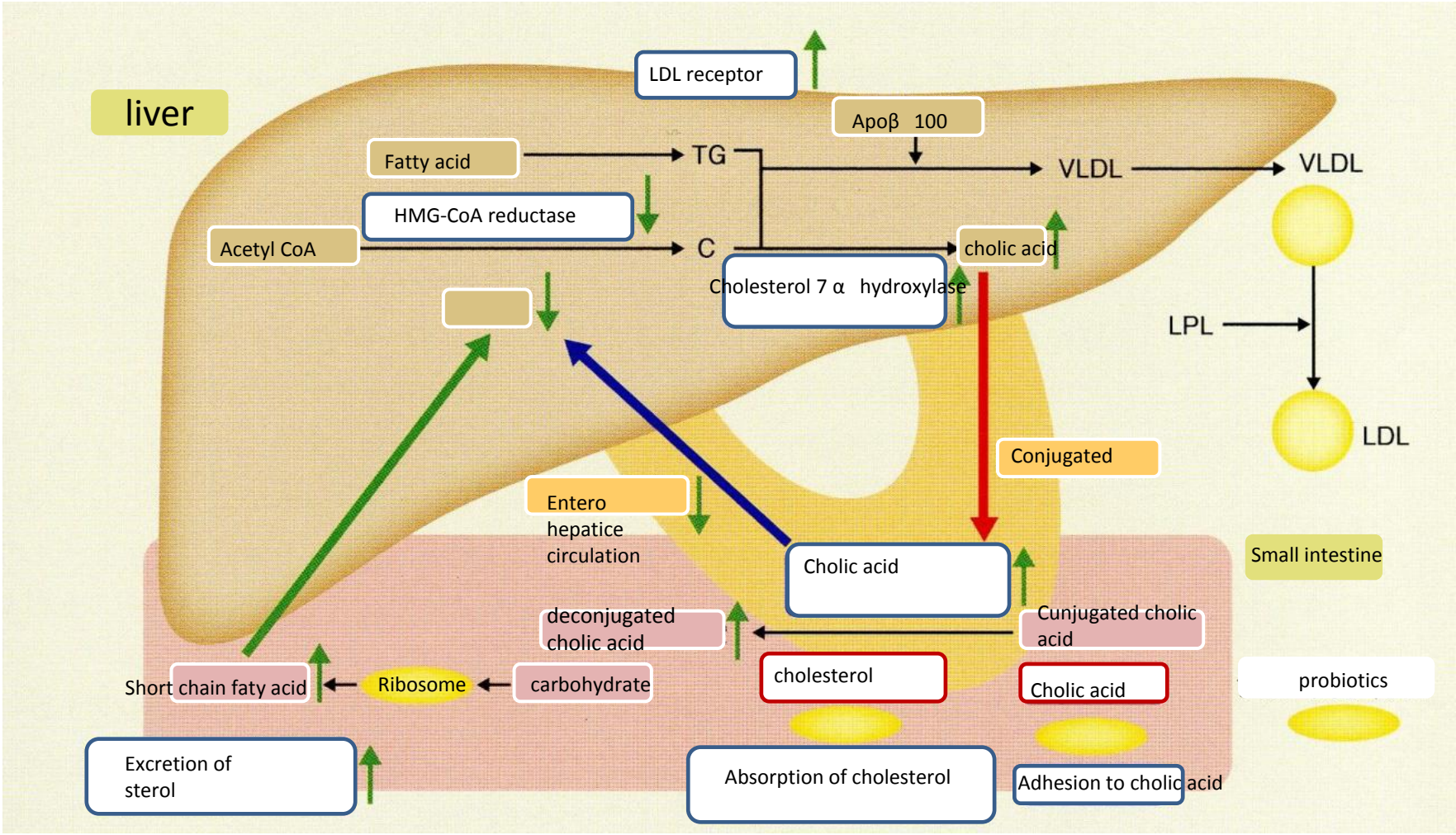
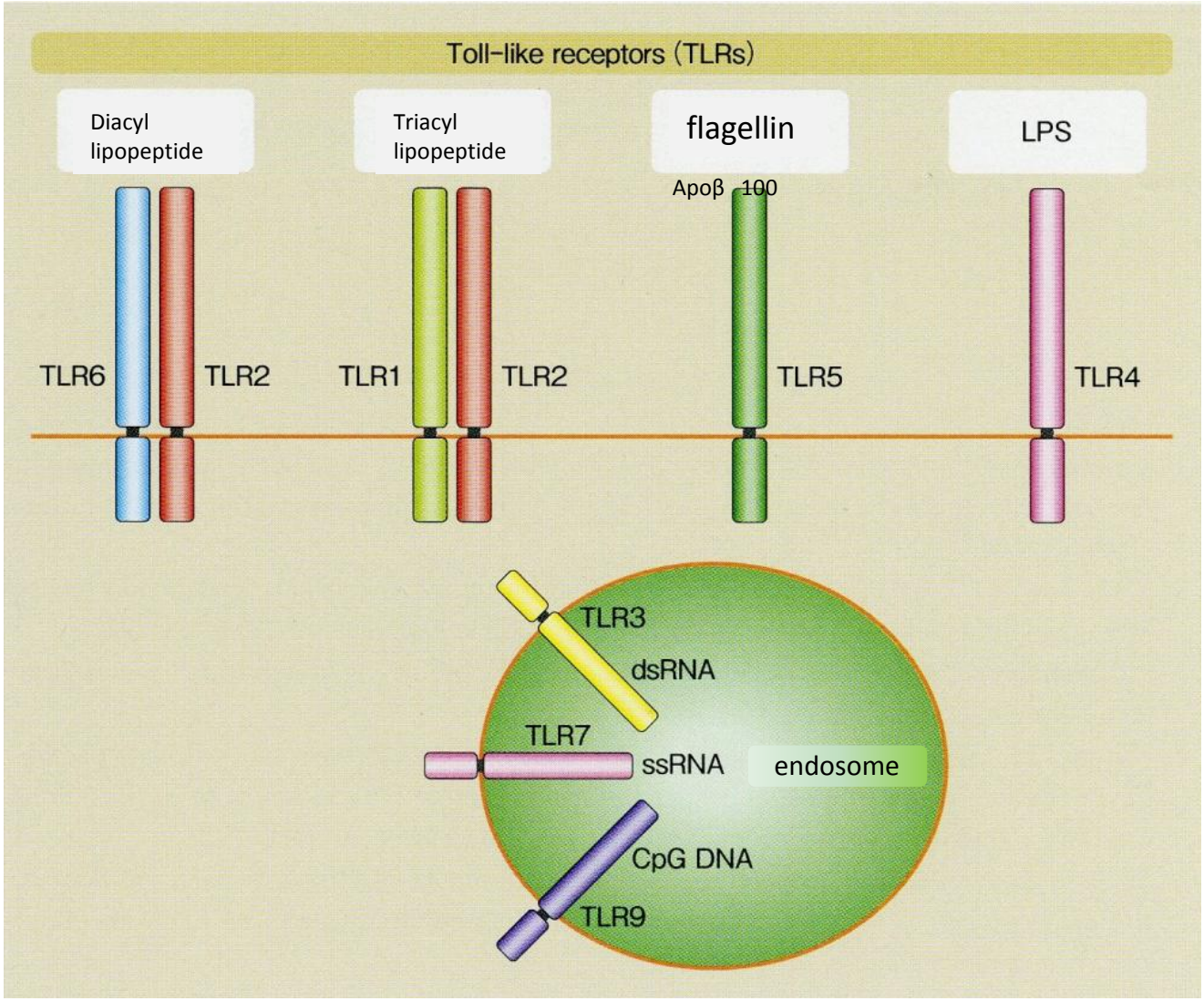


Image of Intestinal flora

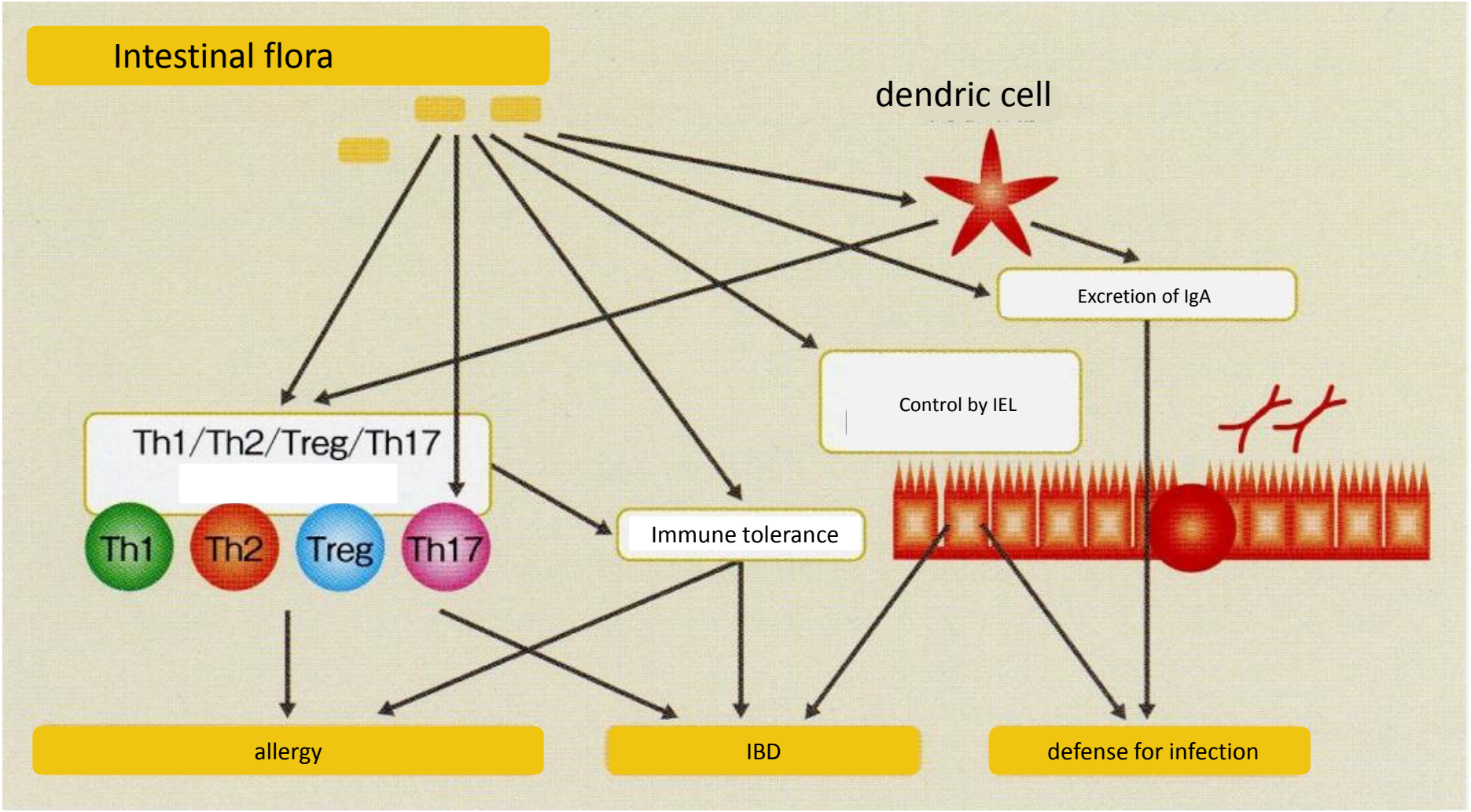


Decrease of serum cholesterol by probiotics

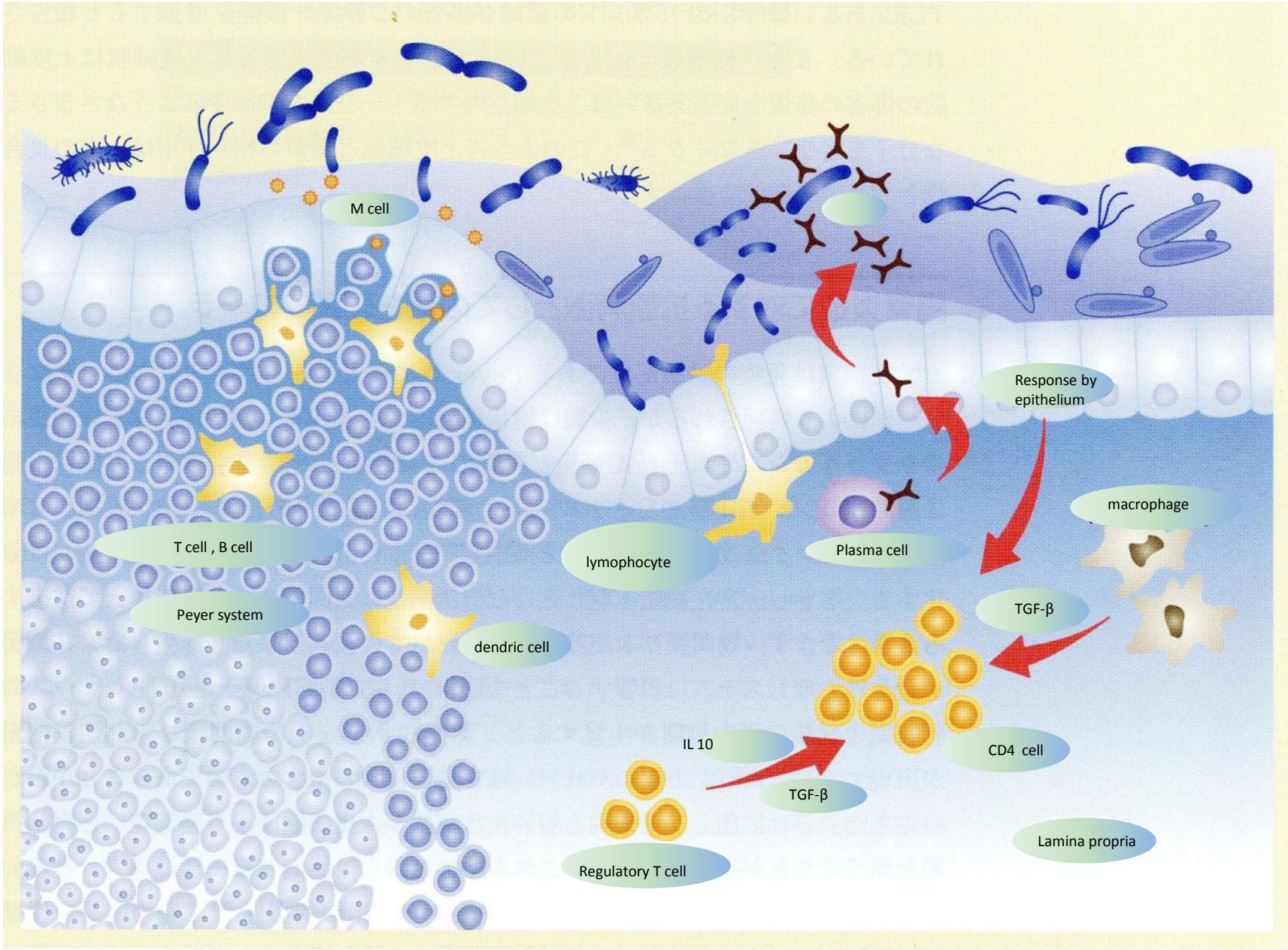


TLR and Ligands

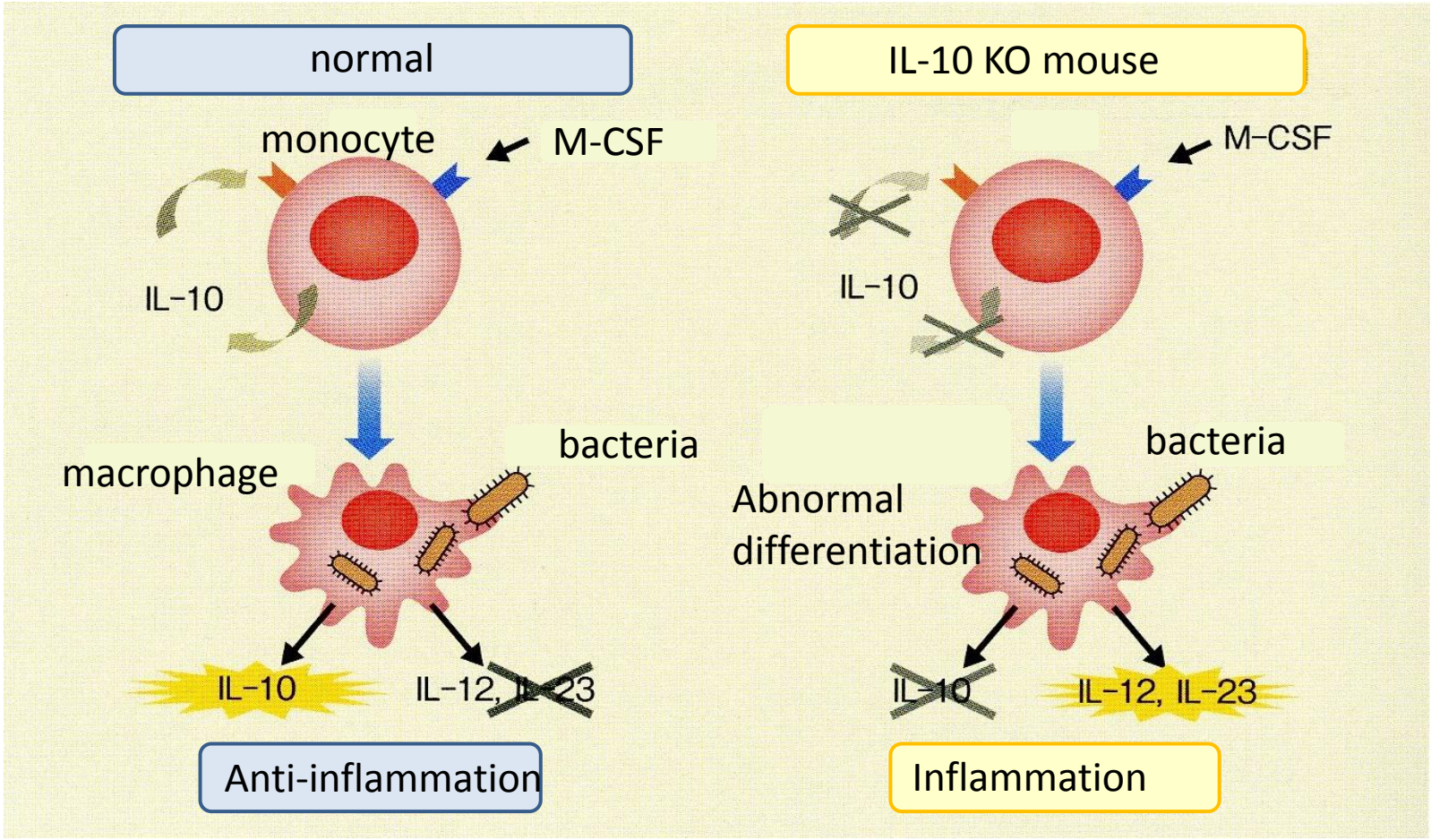
Immune system in mucosa



Immune system by intestinal flora



Defense system in mucosa



Production of cytokine

OMICS International Open Access Membership

OMICS International Open Access Membership enables academic and research institutions, funders and corporations to actively encourage open access in scholarly communication and the dissemination of research published by their authors.

For more details and benefits, click on the link below:
http://omicsonline.org/membership.php