nature REVIEWS
www.nature.com/reviews

IMMUNOLOGY

nature REVIEWS IMMUNOLOGY

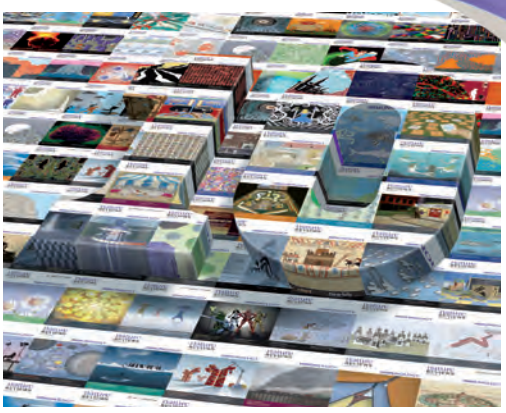
10th anniversary

Continuing our 10th anniversary celebrations, *Nature Reviews Immunology* is delighted to bring you a special immunology-themed calendar for 2012.

We are often complimented on the high quality of the figures that feature in our journal. Therefore, we have decided to adapt some of our favourite images that have appeared in the journal over the past decade to illustrate 12 different immunology topics — one for each calendar month.

We've also included a further reading list, which highlights other articles and Focus issues from *Nature Reviews Immunology* that are related to the topic of each calendar month. This can be found at the back of the calendar, along with an events list of some of the key immunology meetings that will take place in 2012. You can find a more complete and updated list of immunology conferences at: http://www.nature.com/nri/info/info_conf.html.

We hope that you enjoy using the calendar, and we thank our sponsors, eBioscience, for their kind support. Finally, we would like to extend our best wishes for the New Year to our readers and authors — may 2012 prove to be a happy and prosperous year for you all.



Nature Reviews Immunology:
http://www.nature.com/nri/index.html

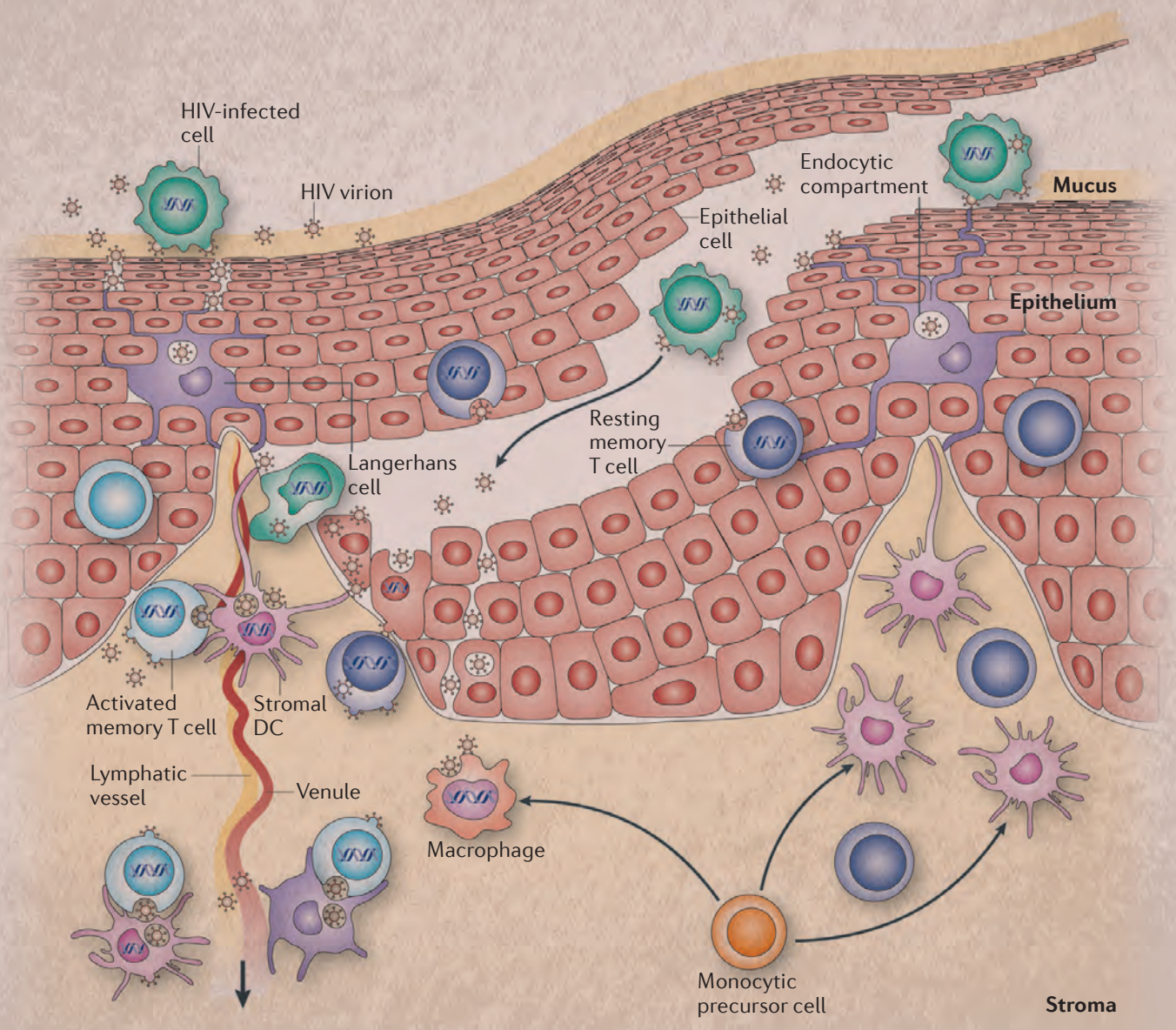
10th anniversary issue:
http://www.nature.com/nri/journal/v11/n10/index.html

Follow @NatRevImmunol on Twitter:
http://twitter.com/#!/NatRevImmunol

Calendar compiled and edited by Yvonne Bordon
Copyedited by Isabel Woodman
Designed by Simon Bradbrook

LIST OF ABBREVIATIONS USED IN THE CALENDAR:

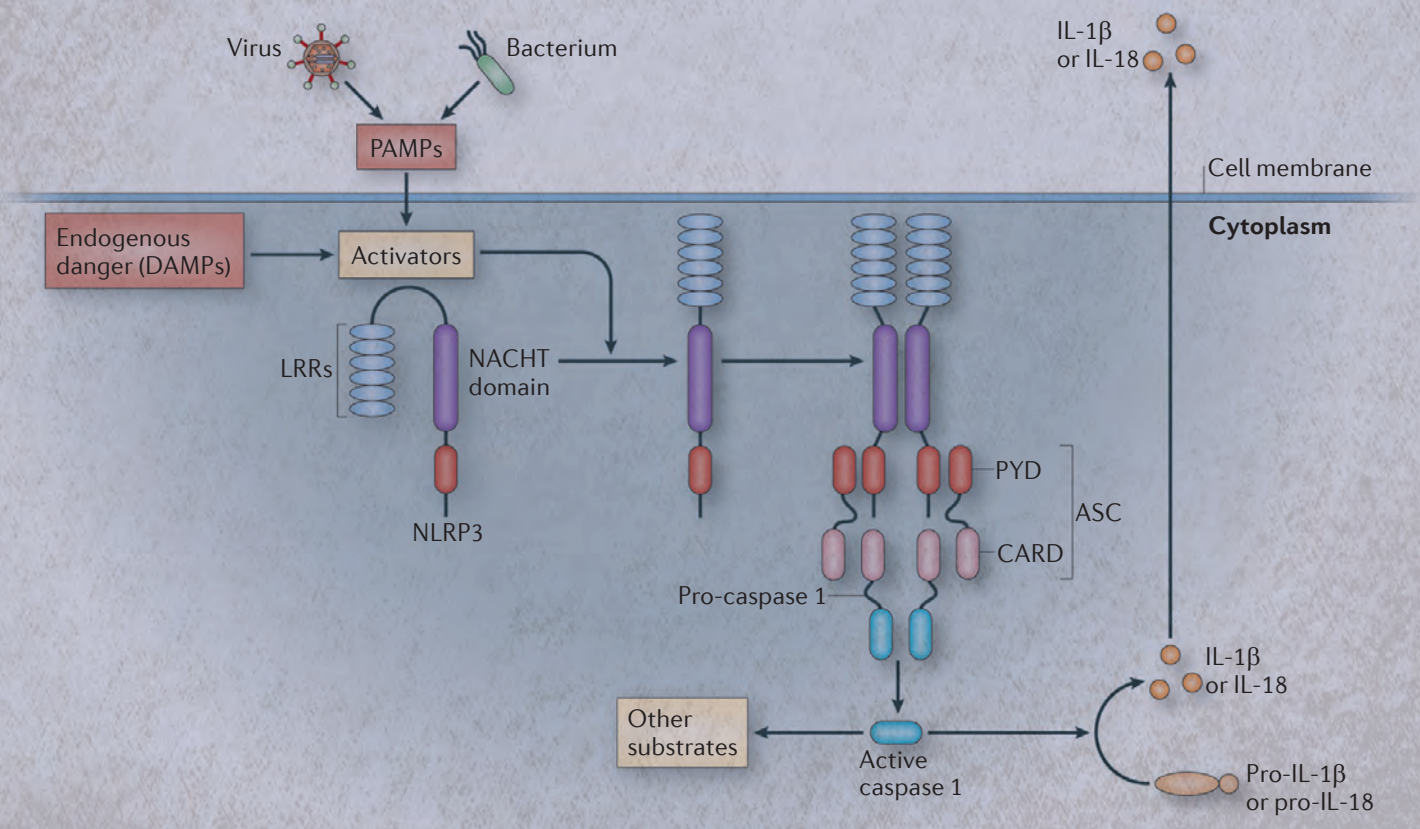
AHR, airway hyperreactivity; APRIL, a proliferation-inducing ligand; ASC, apoptosis-associated speck-like protein containing a CARD; *B. fragilis*, *Bacteroides fragilis*; BAFF, B cell-activating factor; CARD, caspase-recruitment domain; CNS, central nervous system; cTEC, cortical thymic epithelial cell; CX_3CR1, CX_3C-chemokine receptor 1; DAG, diacylglycerol; DAMP, damage-associated molecular pattern; DC, dendritic cell; DN, double negative; DP, double positive; FOXP3, forkhead box P3; FRC, fibroblastic reticular cell; GADS, GRB2-related adaptor protein; GM-CSF, granulocyte–macrophage colony-stimulating factor; GRB2, growth factor receptor-bound protein 2; HEV, high endothelial venule; IFNγ, interferon-γ; IgNAR, immunoglobulin new antigen receptor; IL, interleukin; JAK, Janus kinase; LAT, linker for activation of T cells; LRR, leucine-rich repeat; M cell, microfold cell; MAPK, mitogen-activated protein kinase; M-CSF, macrophage colony-stimulating factor; MLN, mesenteric lymph node; mTEC, medullary thymic epithelial cell; NACHT, domain present in NAIP, CIITA, HET-E and TP1; NFAT, nuclear factor of activated T cells; NF-κB, nuclear factor-κB; NK, natural killer; NKT, natural killer T; NLRP3, NOD-, LRR- and pyrin domain-containing 3; PAK, p21-activated kinase; PALS, periarteriolar lymphoid sheath; PAMP, pathogen-associated molecular pattern; PKCθ, protein kinase Cθ; PLCγ, phospholipase Cγ; PNS, peripheral nervous system; PYD, pyrin domain; RANKL, receptor activator of NF-κB ligand; RASGRP, RAS guanyl-releasing protein; SAA, serum amyloid A; SFB, segmented filamentous bacteria; SLP76, SH2 domain-containing leukocyte protein of 76kDa (also known as LCP2); SNS, sympathetic nervous system; SP, single positive; STAT, signal transducer and activator of transcription; TCR, T cell receptor; TGFβ, transforming growth factor-β; T_H, T helper; TLR, Toll-like receptor; T_{Reg}, regulatory T; TSLP, thymic stromal lymphopoietin; ZAP70, ζ-chain-associated protein kinase of 70 kDa; γ_c, common cytokine receptor γ-chain.



nature REVIEWS IMMUNOLOGY

JANUARY 2012

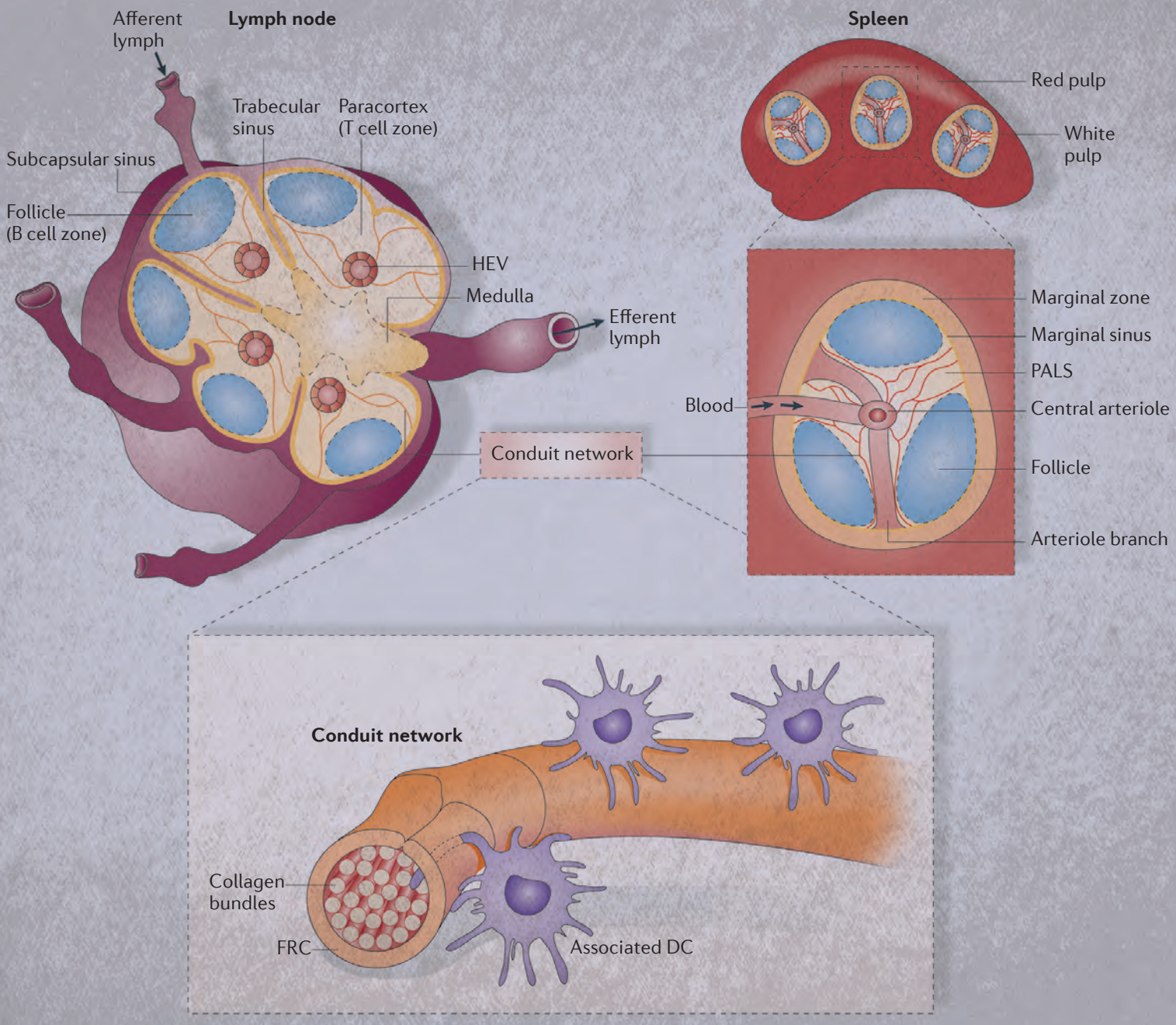
MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					



nature REVIEWS IMMUNOLOGY

FEBRUARY 2012

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29				



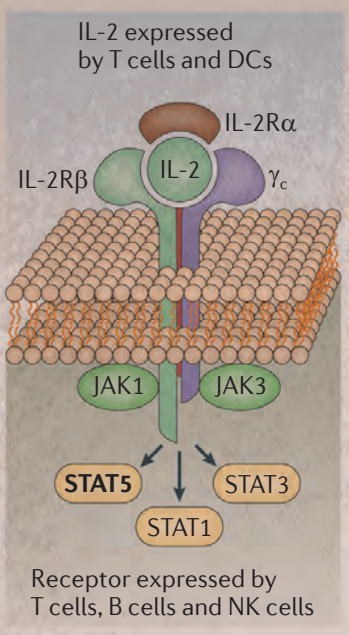
nature REVIEWS IMMUNOLOGY

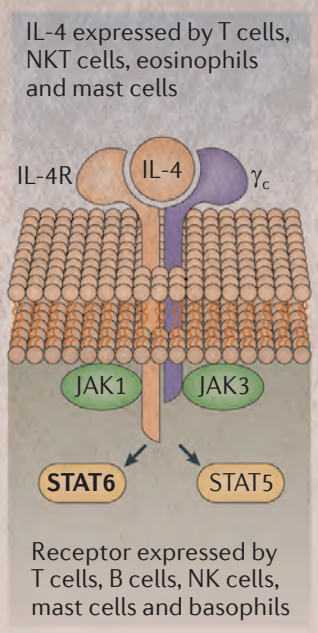
MARCH 2012

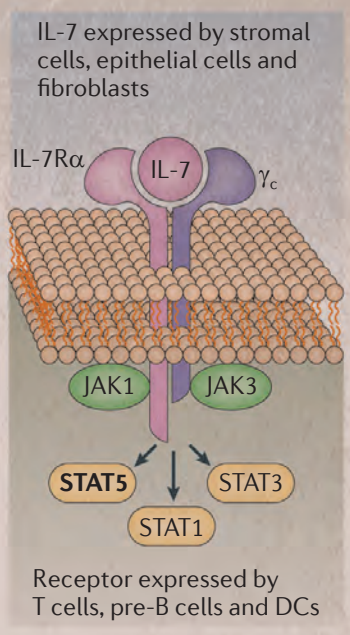
MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

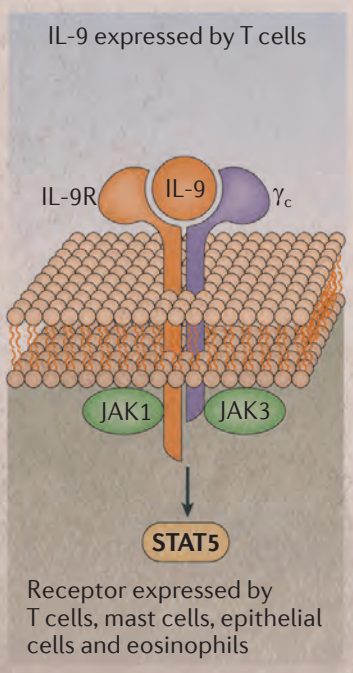
www.eBioscience.com

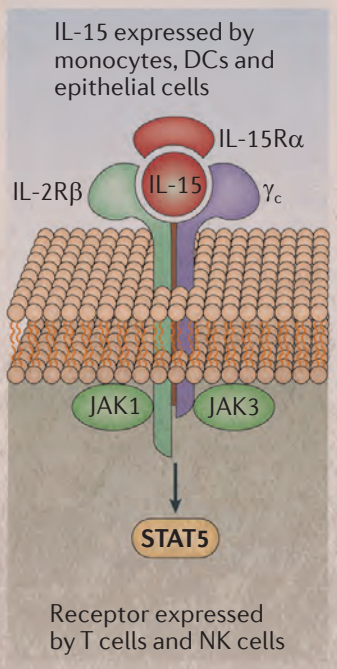
eBioscience®

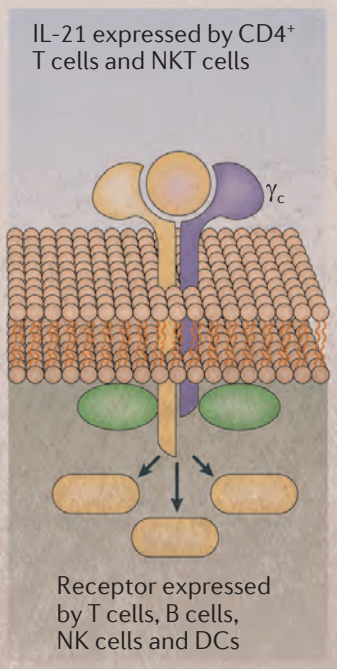


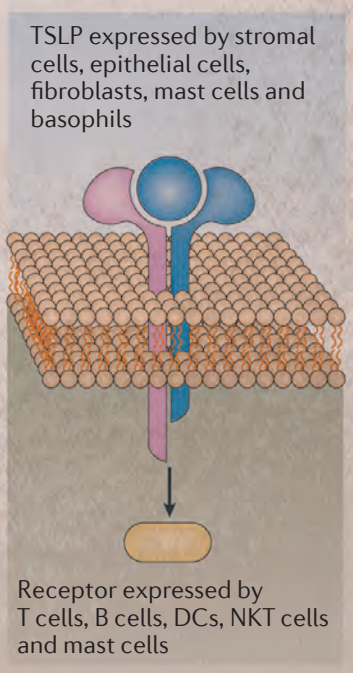












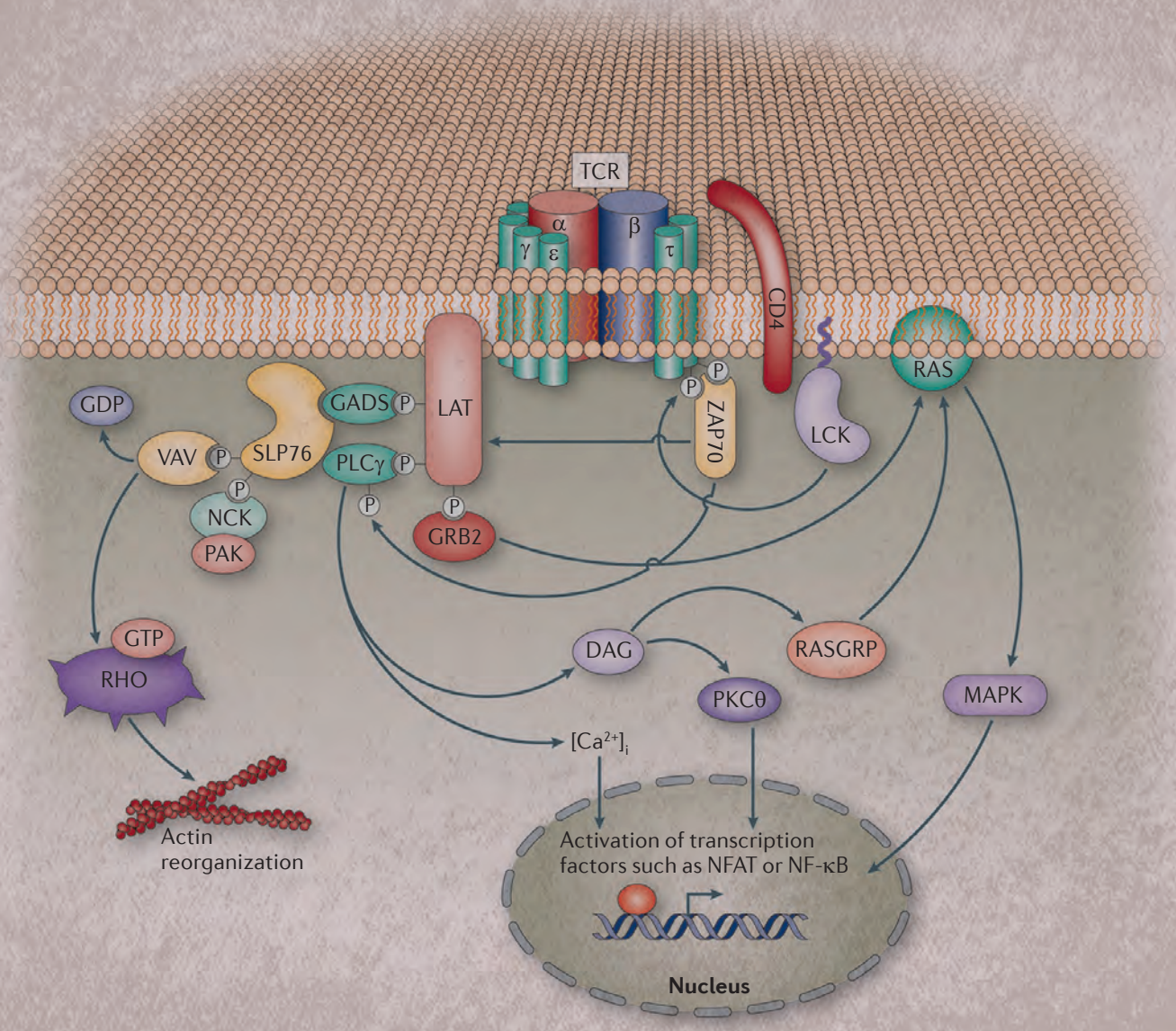
nature REVIEWS **IMMUNOLOGY**

APRIL 2012

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29 Day of Immunology
30						

www.eBioscience.com

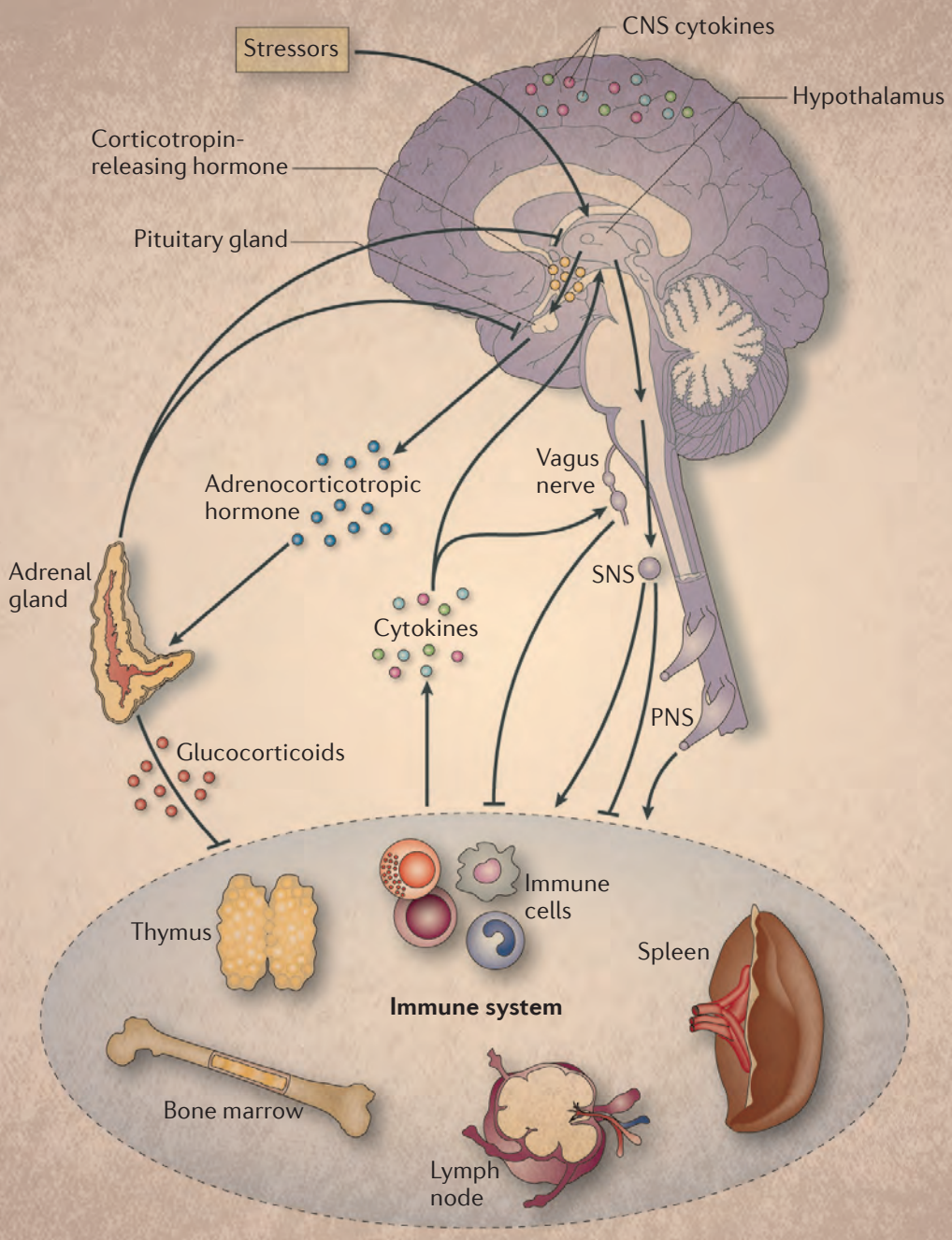
eBioscience®



nature REVIEWS IMMUNOLOGY

MAY 2012

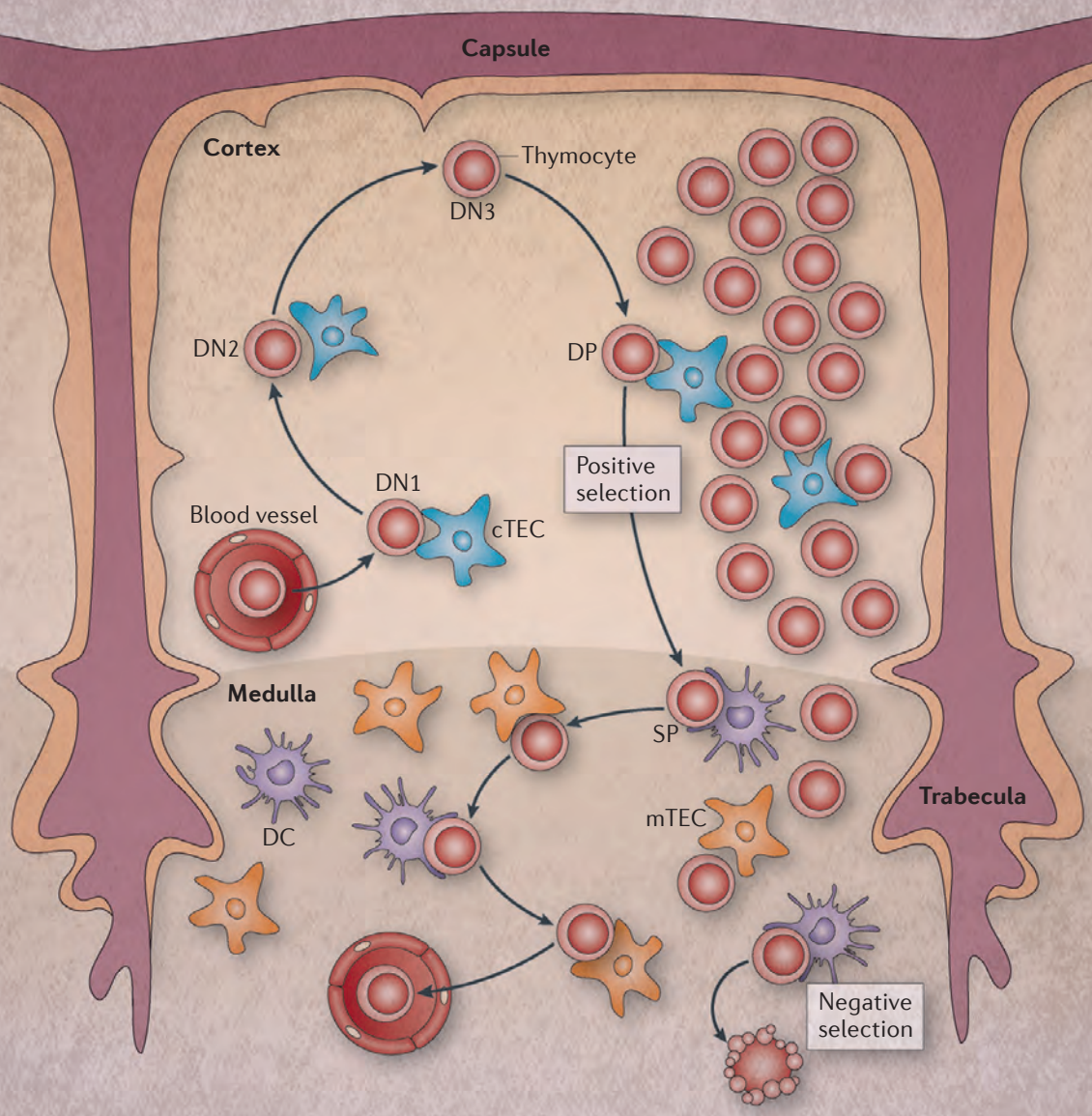
MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			



nature REVIEWS IMMUNOLOGY

JUNE 2012

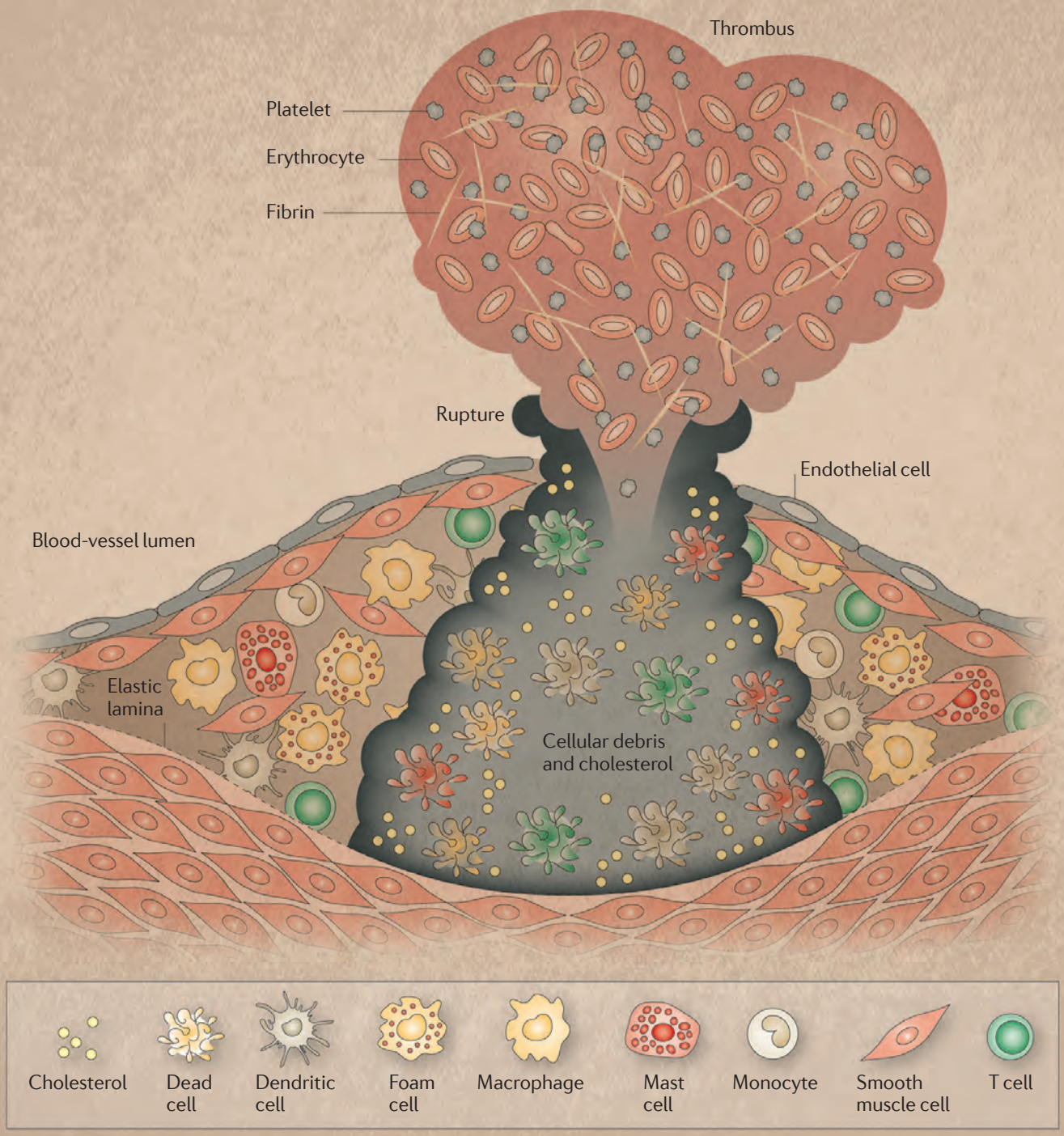
MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	



nature REVIEWS IMMUNOLOGY

JULY 2012

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					



Plaque rupture in atherosclerosis

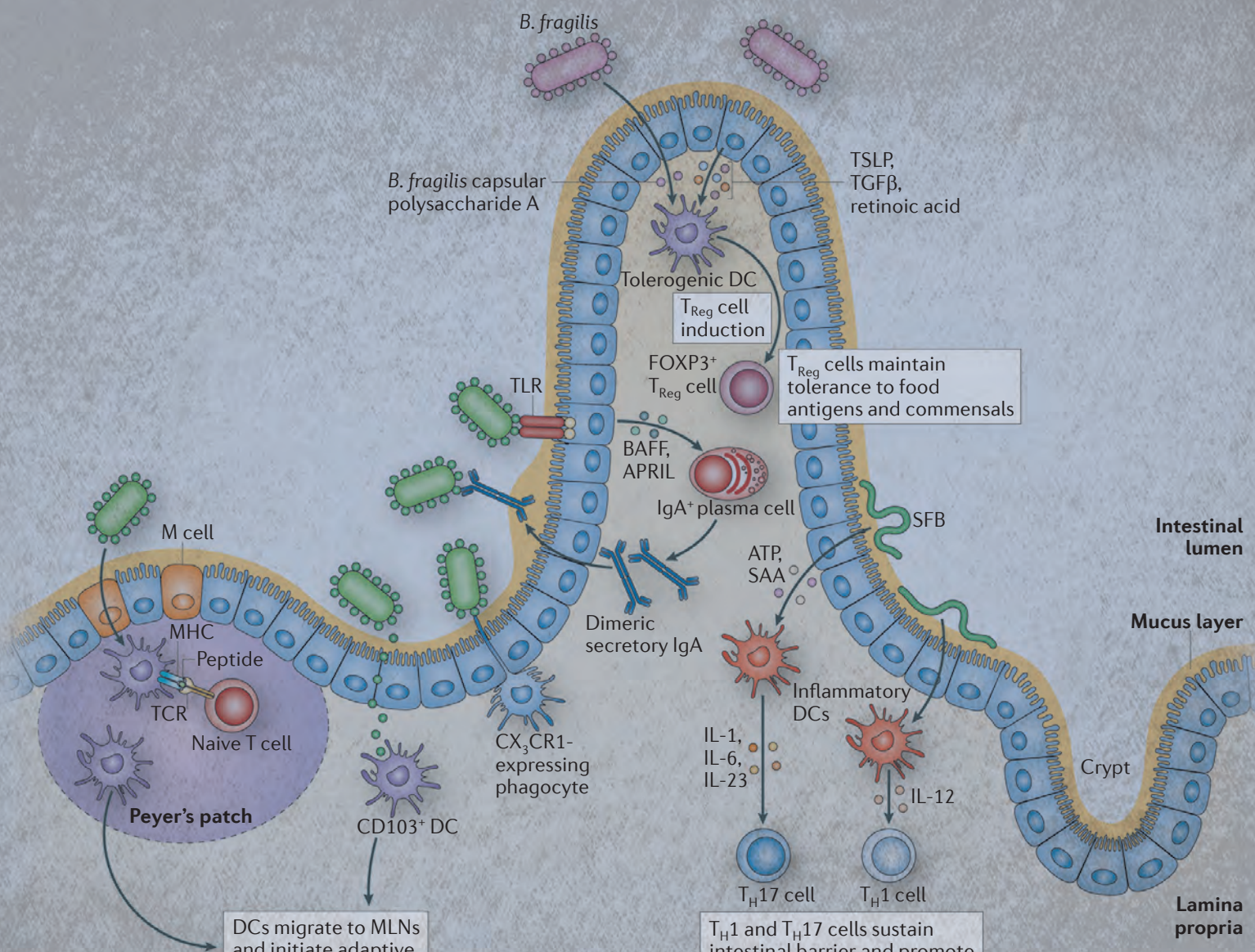
nature REVIEWS IMMUNOLOGY

AUGUST 2012

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

www.eBioscience.com

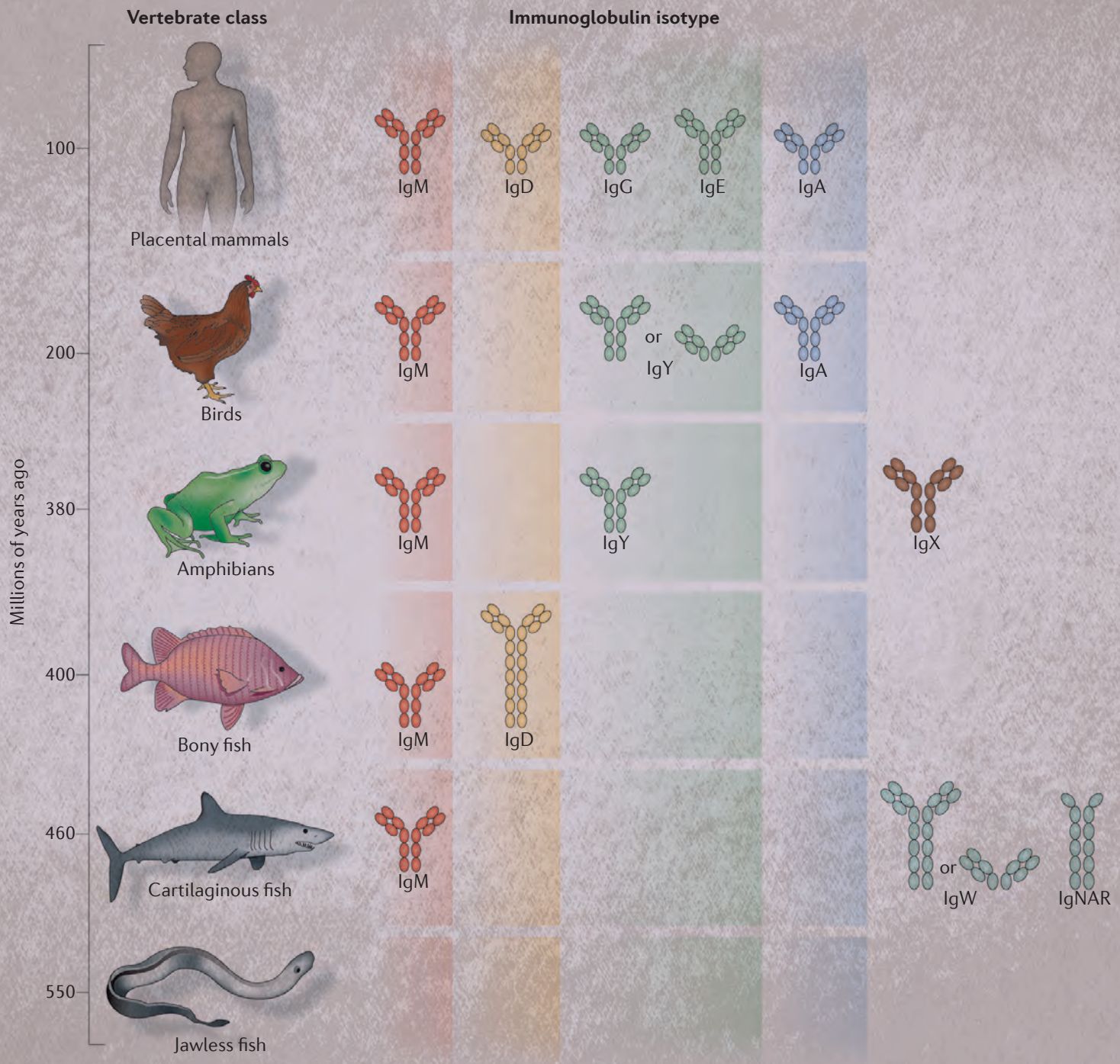
eBioscience®



nature REVIEWS IMMUNOLOGY

SEPTEMBER 2012

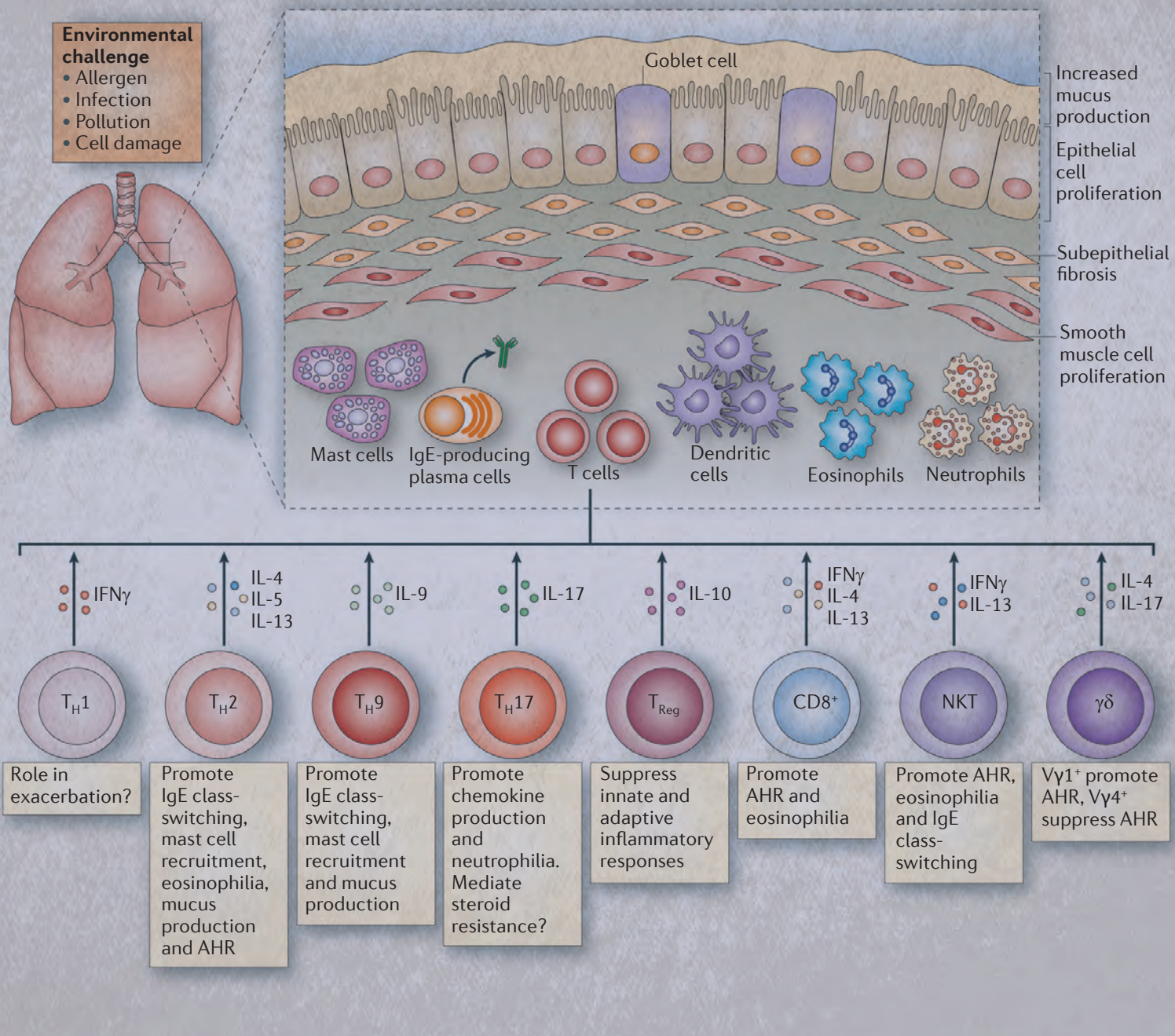
MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30



nature REVIEWS IMMUNOLOGY

OCTOBER 2012

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				



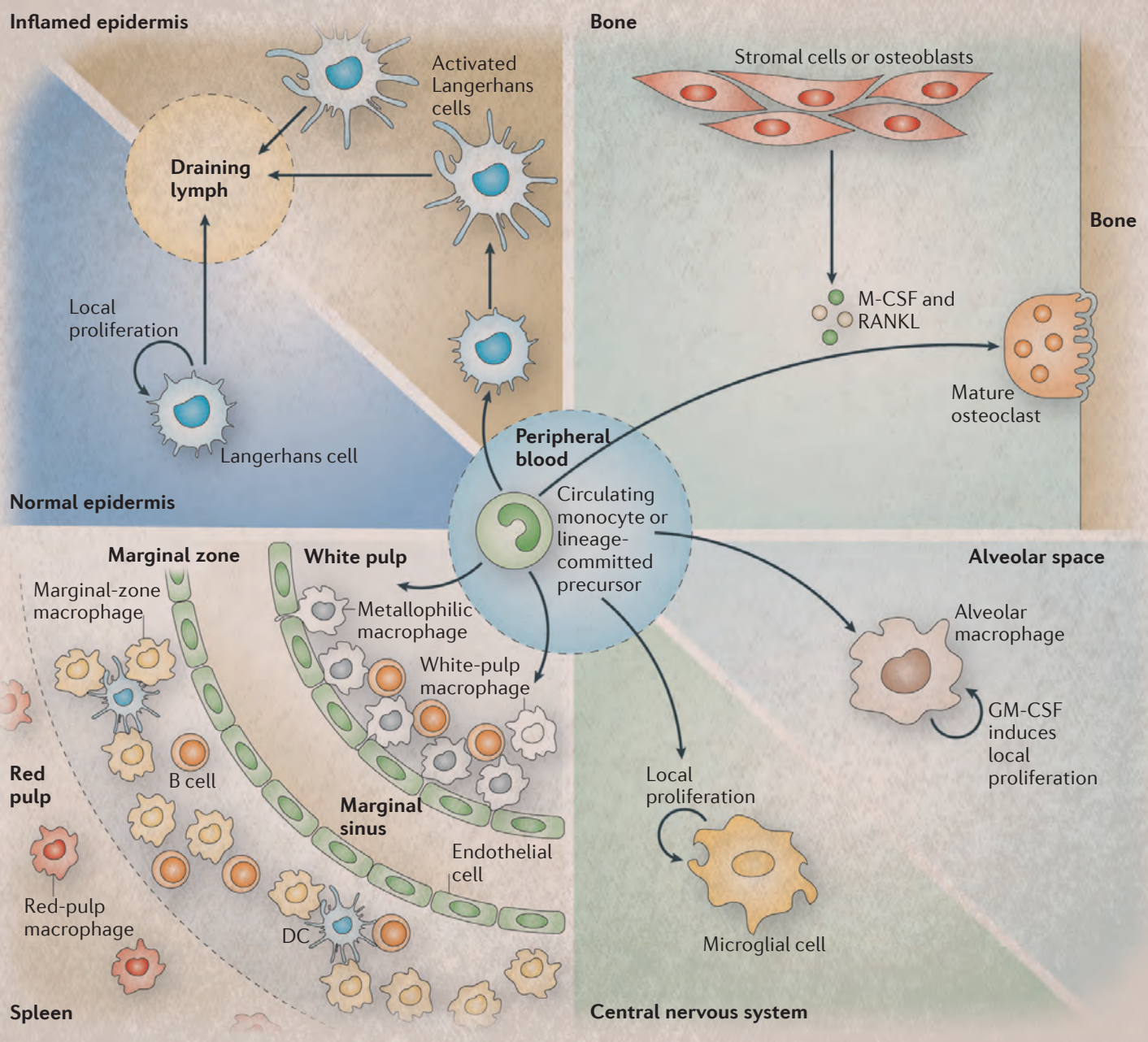
nature REVIEWS IMMUNOLOGY

NOVEMBER 2012

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

www.eBioscience.com

eBioscience®



nature REVIEWS IMMUNOLOGY

DECEMBER 2012

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

READING LIST

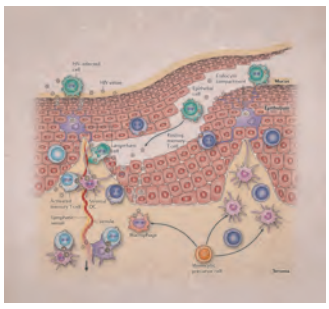
JANUARY

HIV INFECTION

Adapted from Hladik, F. & McElrath, M. J. Setting the stage: host invasion by HIV. *Nature Rev. Immunol.* **8**, 447–457 (2008)

FURTHER READING

- Altfeld, M. *et al.* DCs and NK cells: critical effectors in the immune response to HIV-1. *Nature Rev. Immunol.* **11**, 176–186 (2011)
- Koup, R. A., Graham, B. S. & Douek, D. C. The quest for a T cell-based immune correlate of protection against HIV: a story of trials and errors. *Nature Rev. Immunol.* **11**, 65–70 (2011)
- McMichael, A. J. *et al.* The immune response during acute HIV-1 infection: clues for vaccine development. *Nature Rev. Immunol.* **10**, 11–23 (2009)



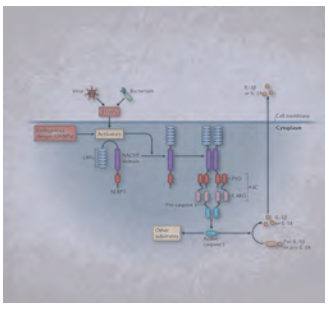
FEBRUARY

THE INFLAMMASOME

Adapted from Tschopp, J. & Schroder, K. NLRP3 inflammasome activation: the convergence of multiple signalling pathways on ROS production? *Nature Rev. Immunol.* **10**, 210–215 (2010)

FURTHER READING

- West, A. P., Shadel, G. S. & Ghosh, S. Mitochondria in innate immune responses. *Nature Rev. Immunol.* **11**, 389–402 (2011)
- Lamkanfi, M. Emerging inflammasome effector mechanisms. *Nature Rev. Immunol.* **11**, 213–220 (2011)
- Kanneganti, T. D. Central roles of NLRs and inflammasomes in viral infection. *Nature Rev. Immunol.* **10**, 688–698 (2010)
- Hornung, V. & Latz, E. Intracellular DNA recognition. *Nature Rev. Immunol.* **10**, 123–130 (2010)



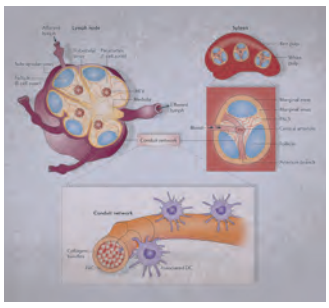
MARCH

SECONDARY LYMPHOID TISSUES

Adapted from Batista, F. D. & Harwood, N. E. The who, how and where of antigen presentation to B cells. *Nature Rev. Immunol.* **9**, 15–27 (2009)

FURTHER READING

- Turley, S. J., Fletcher, A. L. & Elpek, K. G. The stromal and haematopoietic antigen-presenting cells that reside in secondary lymphoid organs. *Nature Rev. Immunol.* **10**, 813–825 (2010)
- van de Pavert, S. A. & Mebius, R. E. New insights into the development of lymphoid tissues. *Nature Rev. Immunol.* **10**, 664–674 (2010)
- Vinuesa, C. G., Sanz, I. & Cook, M. C. Dysregulation of germinal centres in autoimmune disease. *Nature Rev. Immunol.* **9**, 845–857 (2009)



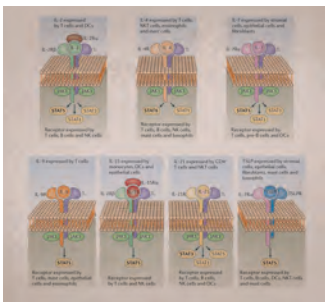
APRIL

CYTOKINES

Adapted from Rochman, Y., Spolski, R. & Leonard, W. J. New insights into the regulation of T cells by γ_c family cytokines. *Nature Rev. Immunol.* **9**, 480–490 (2009)

FURTHER READING

- Sims, J. E. & Smith, D. E. The IL-1 family: regulators of immunity. *Nature Rev. Immunol.* **10**, 89–102 (2010)
- Gaffen, S. L. Structure and signalling in the IL-17 receptor family. *Nature Rev. Immunol.* **9**, 556–567 (2009)
- Croft, M. The role of TNF superfamily members in T-cell function and diseases. *Nature Rev. Immunol.* **9**, 271–285 (2009)
- Focus on Cytokines & cytokine therapies. *Nature Rev. Immunol.* (Jun 2007)



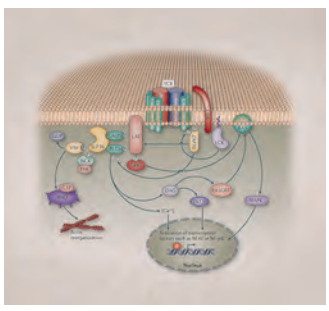
MAY

T CELL RECEPTOR SIGNALLING

Adapted from Koretzky, G. A. & Myung, P. S. Positive regulation of t-cell activation by adaptor proteins. *Nature Rev. Immunol.* **1**, 95–107 (2001)

FURTHER READING

- Dustin, M. L. & Depoil, D. New insights into the T cell synapse from single molecule techniques. *Nature Rev. Immunol.* **11**, 672–684 (2011)
- van der Merwe, P. A. & Dushek, O. Mechanisms for T cell receptor triggering. *Nature Rev. Immunol.* **11**, 47-55 (2011)
- Palmer, E. & Naeher, D. Affinity threshold for thymic selection through a T-cell receptor-co-receptor zipper. *Nature Rev. Immunol.* **9**, 207–213 (2009)



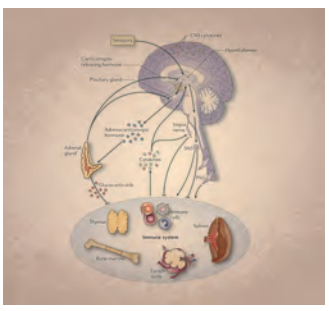
JUNE

NEUROIMMUNOLOGY

Adapted from Sternberg, E. M. Neural regulation of innate immunity: a coordinated nonspecific host response to pathogens. *Nature Rev. Immunol.* **6**, 318–328 (2006)

FURTHER READING

- Irwin, M. R. & Cole, S. W. Reciprocal regulation of the neural and innate immune systems. *Nature Rev. Immunol.* **11**, 625-632 (2011)
- Focus on Neuroimmunology. *Nature Rev. Immunol.* (Jun 2009)



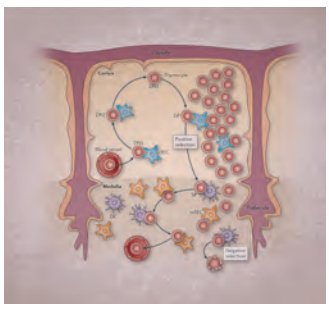
JULY

THE THYMUS

Adapted from Klein, L. *et al.* Antigen presentation in the thymus for positive selection and central tolerance induction. *Nature Rev. Immunol.* **9**, 833–844 (2009)

FURTHER READING

- Love, P. E. & Bhandoola, A. Signal integration and crosstalk during thymocyte migration and emigration. *Nature Rev. Immunol.* **11**, 469–477 (2011)
- Miller, J. F. The golden anniversary of the thymus. *Nature Rev. Immunol.* **11**, 489–495 (2011)
- Ciofani, M. & Zúñiga-Pflücker, J. C. Determining γδ versus αβ T cell development. *Nature Rev. Immunol.* **10**, 657–663 (2010)



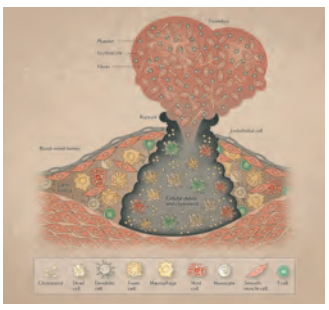
AUGUST

PLAQUE RUPTURE IN ATHEROSCLEROSIS

Adapted from Hansson, G. K. & Libby, P. The immune response in atherosclerosis: a double-edged sword. *Nature Rev. Immunol.* **6**, 508–519 (2006)

FURTHER READING

- Focus on Metabolism and immunology. *Nature Rev. Immunol.* (Feb 2011)
- Tabas, I. Macrophage death and defective inflammation resolution in atherosclerosis. *Nature Rev. Immunol.* **10**, 36–46 (2010)
- Weber, C., Zernecke, A. & Libby, P. The multifaceted contributions of leukocyte subsets to atherosclerosis: lessons from mouse models. *Nature Rev. Immunol.* **8**, 802–815 (2008)



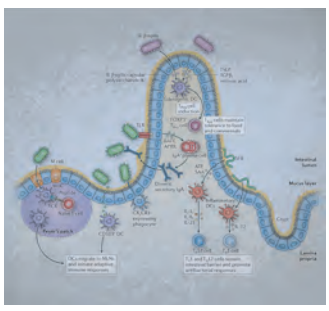
SEPTEMBER

THE INTESTINAL MICROBIOTA

Adapted from Cerf-Bensussan, N. & Gaboriau-Routhiau, V. The immune system and the gut microbiota: friends or foes? *Nature Rev. Immunol.* **10**, 735–744 (2010)

FURTHER READING

- Varol, C., Zigmond, E. & Jung, S. Securing the immune tightrope: mononuclear phagocytes in the intestinal lamina propria. *Nature Rev. Immunol.* **10**, 415–426 (2010)
- Hooper, L. V. & Macpherson, A. J. Immune adaptations that maintain homeostasis with the intestinal microbiota. *Nature Rev. Immunol.* **10**, 159–169 (2010)
- Abreu, M. T. Toll-like receptor signalling in the intestinal epithelium: how bacterial recognition shapes intestinal function. *Nature Rev. Immunol.* **10**, 131–144 (2010)



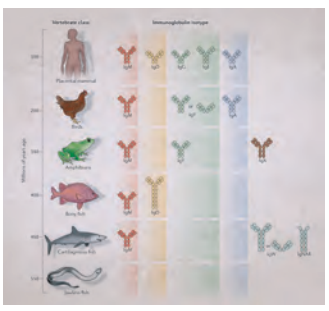
OCTOBER

EVOLUTION OF THE IMMUNE SYSTEM

Adapted from Flajnik, M. F. Comparative analyses of immunoglobulin genes: surprises and portents. *Nature Rev. Immunol.* **2**, 688–698 (2002)

FURTHER READING

- Boehm, T. Design principles of adaptive immune systems. *Nature Rev. Immunol.* **11**, 307–317 (2011)
- Litman, G. W., Rast, J. P. & Fugmann, S. D. The origins of vertebrate adaptive immunity. *Nature Rev. Immunol.* **10**, 543–553 (2010)
- Irazoqui, J. E., Urbach, J. M. & Ausubel, F. M. Evolution of host innate defence: insights from *Caenorhabditis elegans* and primitive invertebrates. *Nature Rev. Immunol.* **10**, 47–58 (2010)



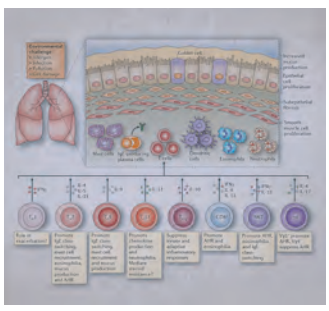
NOVEMBER

ASTHMA AND ALLERGY

Adapted from Lloyd, C. M. & Hessel, E. M. Functions of T cells in asthma: more than just T_H2 cells. *Nature Rev. Immunol.* **10**, 838–848 (2010)

FURTHER READING

- von Mutius, E. & Vercelli, D. Farm living: effects on childhood asthma and allergy. *Nature Rev. Immunol.* **10**, 861–868 (2010)
- Paul, W. E. & Zhu, J. How are T_H2-type immune responses initiated and amplified? *Nature Rev. Immunol.* **10**, 225–235 (2010)
- Focus on Asthma and allergy. *Nature Rev. Immunol.* (Mar 2008)



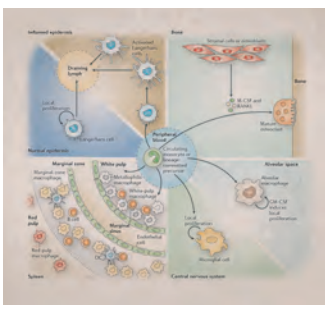
DECEMBER

MONOCYTE AND MACROPHAGE PLASTICITY

Adapted from Gordon, S. & Taylor, P. R. Monocyte and macrophage heterogeneity. *Nature Rev. Immunol.* **5**, 953–964 (2005)

FURTHER READING

- Focus on Monocytes and macrophages. *Nature Rev. Immunol.* (Nov 2011)
- Soehnlein, O. & Lindbom, L. Phagocyte partnership during the onset and resolution of inflammation. *Nature Rev. Immunol.* **10**, 427–439 (2010)
- Geissmann, F. et al. Unravelling mononuclear phagocyte heterogeneity. *Nature Rev. Immunol.* **10**, 453–460 (2010)



CALENDAR OF EVENTS 2012

JANUARY

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
						1
2	3	4	5	6	7	8 Keystone:
9 Chemokines & leukocyte trafficking, Colorado, USA			12	13	14	15
16	17	18 Nature: Immunity & inflammation, La Jolla, California, USA			21 Keystone: Rheumatoid arthritis,	
23 Santa Fe, USA	24	25	26	27	28 Midwinter Conference: Asilomar,	
30 California, USA	31					

FEBRUARY

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
		1	2	3 T cell differentiation & plasticity, California, USA		
6 Keystone: Cytokines/ T_H17 cells, Colorado, USA			9	10	11	12
13	14	15 Lorne infection & immunity, Victoria, Australia			18	19 Models for
20 analysis of lymphocyte repertoire generation, Jerusalem, Israel				24	25	26
27	28	29				

MARCH

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
			1	2	3	4 Keystone:
5 Sensing microbes & damage/The microbiome, Colorado, USA				9	10	11 Keystone:
12 Regulation of lymphocyte signalling, Colorado, USA			15	16	17	18 WIRM VI,
19 Davos, Switzerland		21 Keystone: HIV vaccines/ Viral immunity, Colorado, USA				25
26 Gordon: Antibody biology & engineering, Galveston, Texas, USA				30	31	

APRIL

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
						1 Nature:
2 Resolving inflammation, Oxford, UK		4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26 Immune tolerance & autoimmune disease, Cambridge, UK			29
31						

MAY

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	1	2	3	4 Immunology 2012: AAI annual meeting, Boston, USA		
7	8	9 8th International congress on autoimmunity, Granada, Spain			12	13
14	15	16	17	18	19 Immunity to infection, Heidelberg	
21	22	23 Keystone: Inflammation & carcinogenesis, Dublin, Ireland			26	27 Gordon:
28 Chemotactic cytokines, Lucca, Italy		30	31			

JUNE

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
				1 Reproductive Immunology, Hamburg, Germany		
4	5	6	7	8	9	10 Gordon:
11 Host–parasite interactions, Rhode Island, USA			14	15	16 European Academy of Allergy &	
18 Clinical Immunology, Geneva, Switzerland			21 FOCIS 2012, Vancouver, Canada		23	24
25 Aegean: 9th Innate immunity conference, Rhodes, Greece			28	29	30	

JULY

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
						1 Frontiers in
2 immunology research network, Salzburg, Austria			5	6	7	8 FASEB:
9 Immunoreceptors, Colorado, USA		11	12	13	14	15
16 14th International congress of the Transplantation Society, Berlin, Germany				20	21	22
23	24	25	26	27	28	29
30	31					

AUGUST

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

SEPTEMBER

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
					1	2
3	4	5 3rd European Congress of Immunology, Glasgow, UK			8	9
10	11 ICS/ISICR joint meeting, Geneva, Switzerland			14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

OCTOBER

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
1	2	3	4	5	6	7 DC2012:
8 Daegu, Korea	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28 Society for
29 Leukocyte Biology, Hawaii, USA		31				

NOVEMBER

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

DECEMBER

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
					1	2
3	4	5	6 World Allergy Organization, Hyderabad, India			9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

nature publishing group

4 Crinan Street,
London, N1 9XW
www.nature.com/nri