Essential Amino Acids, Oral Microbiota & Metabolites in Health and Disease

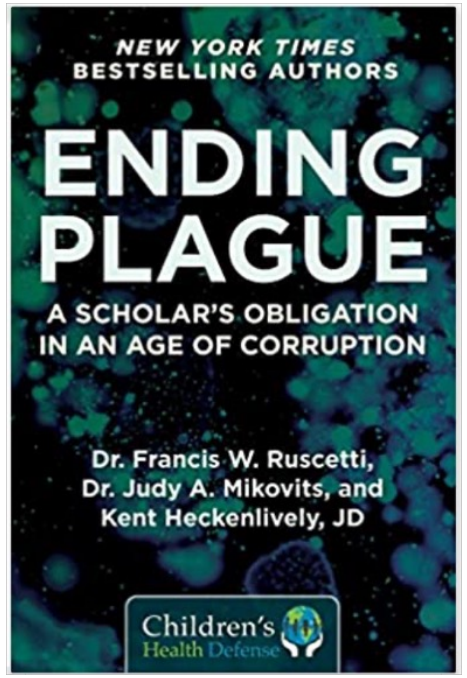
Judy A. Mikovits PhD

March 08, 2025

Salt Lake City Utah

VACCINE AIDS = COVID19

Prostate Cancer*	Crohn's Disease*	Gulf War Syndrome*
Breast Cancer *	Hashimoto's Thyroiditis*	Autism / ASD*
Multiple Myeloma*	Polymyositis*	Multiple Sclerosis*
Non-Hodgkins Lymphoma*	Sjogren's Syndrome *	Parkinson's*
Chronic Lymphocytic Leukemia*	Bechet's Disease*	ALS*
Mantle Cell Lymphoma*	Primary Biliary Cirrhosis*	Fibromyalgia*
Hairy Cell Leukemia*	Inflammatory Bowel Disease*	Chronic Lyme Disease*
Bladder Cancer *	Psoriasis, Dermatitis	OCD*
Colorectal Cancer*	Diabetes*	ADHD*
Kidney Cancer *	Cardiovascular Disease*	PTSD*
Ovarian Cancer*	ME / CFS*	Psychosis*
**Neuroendocrine Tumors*	Lupus/SLE*	Rheumatoid Arthritis*



Experimentation without Informed Consent is Crimes Against Humanity

Review

CellPress

Effects of environmental change on zoonotic disease risk: an ecological primer

Trends in Parasitology, April 2014, Vol. 30, No. 4 205

Agustín Estrada-Peña[1], Richard S. Ostfeld[2], A. Townsend Peterson[3], Robert Poulin[4], and José de la Fuente[5,6]

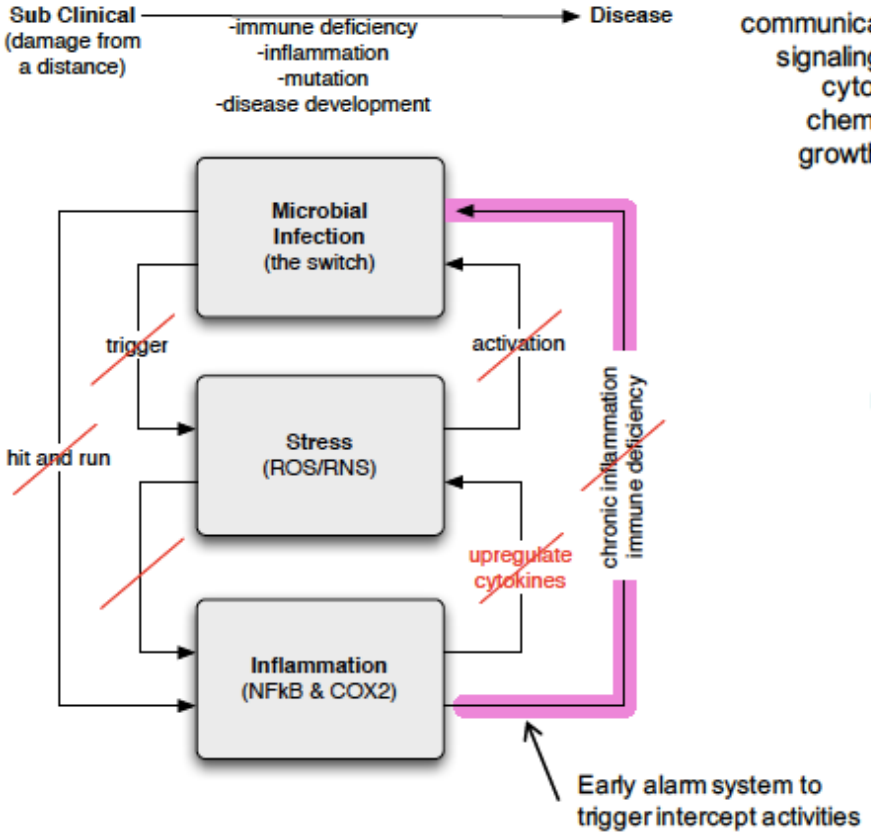
[1] Department of Animal Pathology, Faculty of Veterinary Medicine, Miguel Servet, 177, 50013-Zaragoza, Spa
[2] Cary Institute of Ecosystem Studies, Millbrook, NY 12545-0129, USA
[3] The University of Kansas Biodiversity Institute, Lawrence, KS 66045-7593, USA
[4] Department of Zoology, University of Otago, Dunedin 9016, New Zealand
[5] SaBio, IREC, Ronda de Toledo s/n, 13071 Ciudad Real, Spain
[6] Center for Veterinary Health Sciences, Oklahoma State University, Stillwater, OK 74078, USA

HAZARDS pf GMO

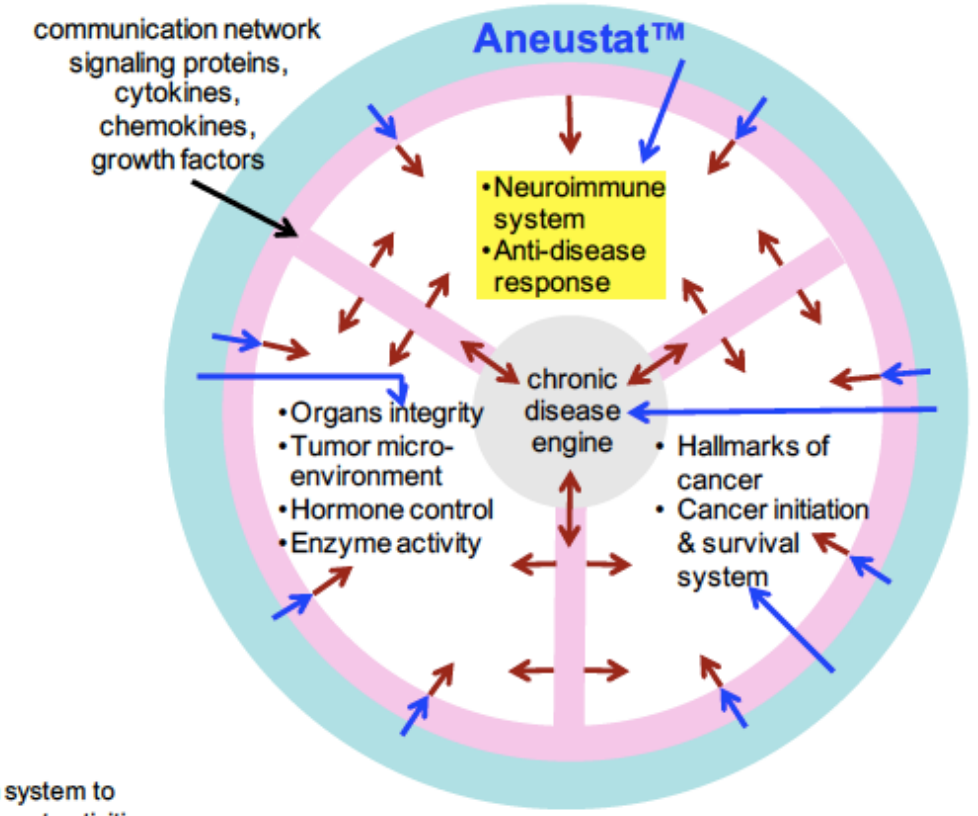
1. Uncontrollable, unpredictable impacts on safety due to the genetic modification process *
Scrambling the host genome *
Widespread mutations *
Inactivating genes *
Activating genes *
Creating new transcripts (RNAs) including those with regulatory functions *
Creating new proteins *
Creating new metabolites or increasing metabolite to toxic levels *
Activating dormant viruses *
Creating new viruses by recombination of viral genes in GM insert with those in the host genome *
2. Toxicity of transgene protein(s) introduced (intentionally or otherwise)
Transgene protein toxic *
Transgene protein allergenic or immunogenic *
Trangenic protein becoming allergenic or immunogenic due to processing *
Unintended protein created by sequence inserted may be toxic or immunogenic
3. Effects due to the GM insert and its instability *
Genetic rearrangement with further unpredictable effects *
Horizontal gene transfer and recombination *
Spreading antibiotic and drug resistance *
Creating new viruses and bacteria that cause diseases
Creating mutations in genomes of cells to which the GM insert integrate including those associated with cancer *
4. Toxicity of herbicides used with herbicide tolerant GM crops *

GENYOUS/OMNITURA Anuestat™ : An Improved Pharmalogical Paradigm THE SMART Platform for combination therapy for cancer and Neuroimmune Disease

Inhibiting The Chronic Disease Engine (the interplay of microbial infection, oxidative stress, and inflammation)



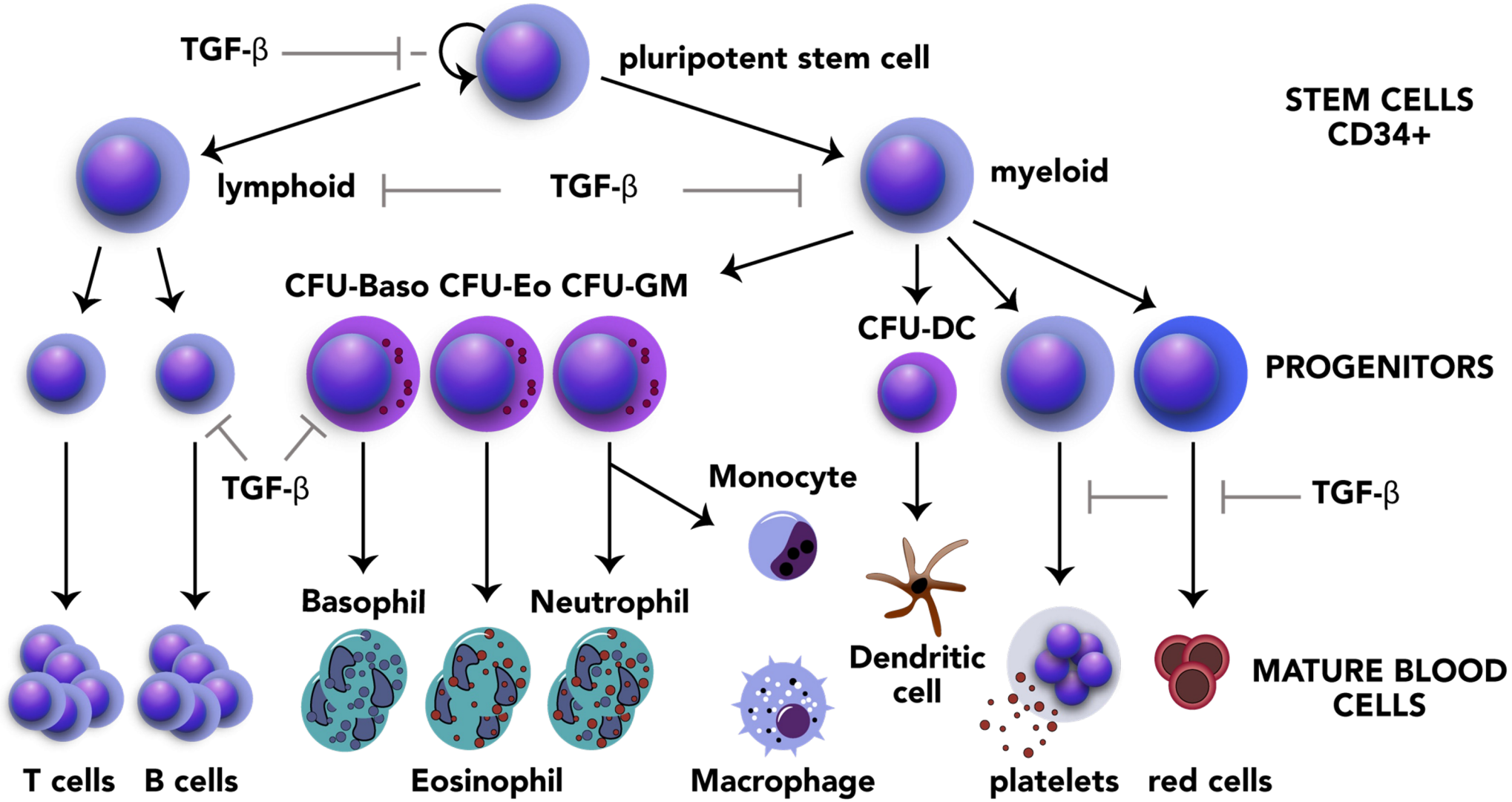
Aneustat™ Directly and Indirectly Modulates Key Biology Systems And Their Communication to Intercept, Treat and Prevent Cancer Proliferation



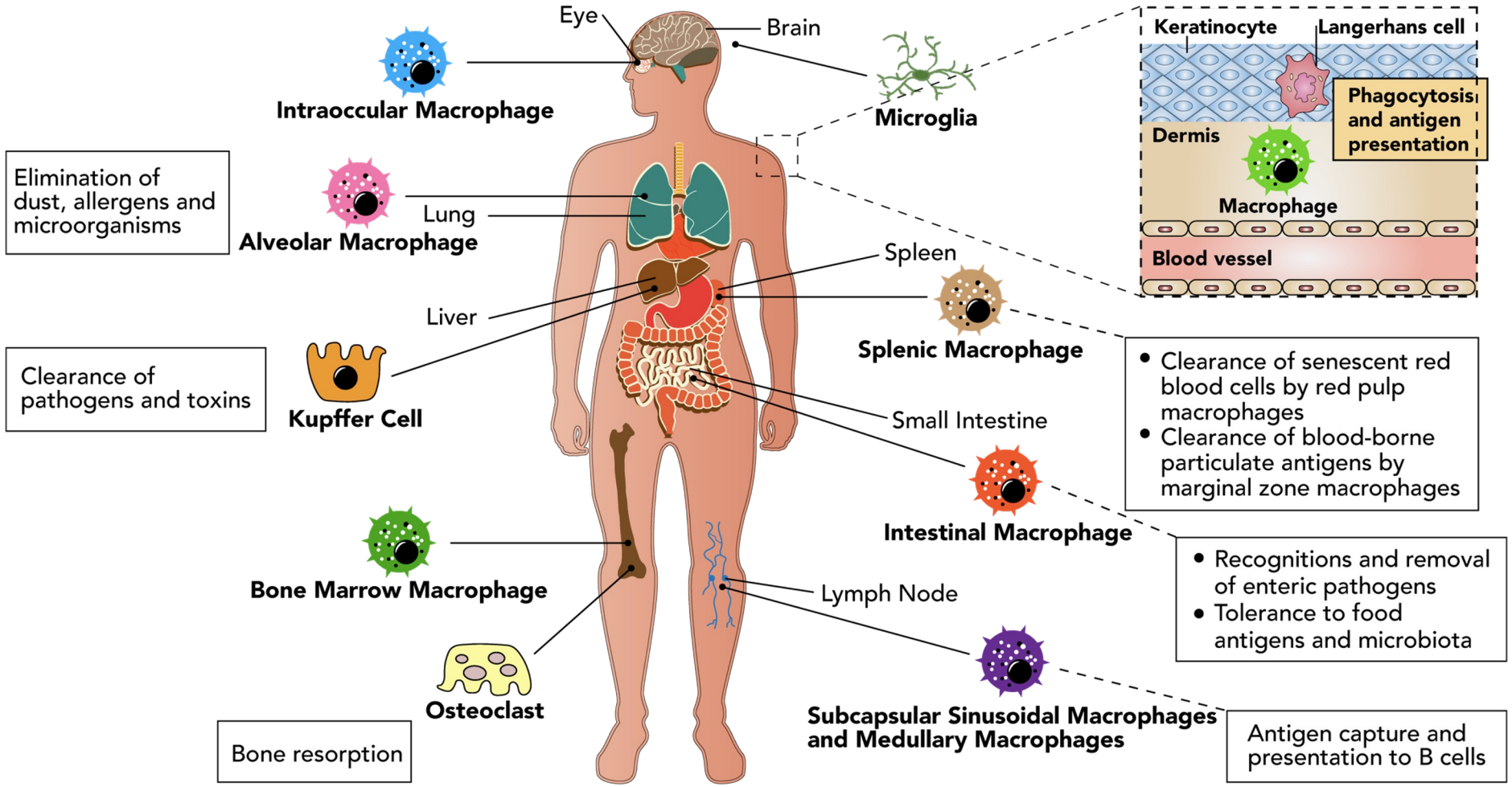
SMART™

- Safe/Synergistic
- Multivalent MOA
- Adaptive Arsenal
- Regulation/restore Homeostasis
- Therapy/Treatment

TGF-B Master regulator of Hematopoietic Stem Cell Accelerated Myelopoiesis=INFLMMAGING=AIDS



Tissue macrophage stem cells: key homeostatic communication between Nucelotide sensors and signaling via endocannabinoid system (eCS)



The **oral cavity microbiota** play a crucial role in maintaining oral and overall health but can also contribute to diseases if imbalanced.

Major Microbial Groups in the Oral Cavity

1. **Bacteria** (Most abundant)
   - **Streptococcus** (e.g., *S. mutans*, *S. sanguinis*, *S. mitis*) – Involved in tooth decay and biofilm formation.
   - **Lactobacillus** – Contributes to acid production and enamel demineralization.
   - **Actinomyces** – Plays a role in early plaque formation and root surface caries.
   - **Porphyromonas gingivalis** – A key pathogen in periodontitis.
   - **Fusobacterium** – Implicated in periodontal disease.
   - **Prevotella** – Associated with gum inflammation.
   - **Treponema** – A genus of spirochetes involved in periodontal disease.
   - **Neisseria, Haemophilus, Veillonella** – Generally considered commensals but can contribute to disease in some conditions.
2. **Fungi**
   - **Candida spp.** (e.g., *C. albicans*) – Opportunistic pathogens that can cause oral thrush, particularly in immunocompromised individuals.
3. **Viruses**
   - **Human Herpesviruses (HHV)** (e.g., HSV-1, Epstein-Barr virus) – Can cause cold sores and other infections.
   - **Human Papillomavirus (HPV)** – Linked to oral cancers.
   - **Bacteriophages** – Viruses that infect bacteria, influencing microbial balance.
4. **Archaea**
   - Less abundant but found in subgingival plaque, often associated with periodontal disease.

Roles and Factors influencing the Oral Microbiota

Roles of Oral Microbiota

- **Protective**: Beneficial bacteria help prevent colonization by pathogens and aid in digestion.
- **Pathogenic**: Dysbiosis (microbial imbalance) can lead to cavities (dental caries), gingivitis, periodontitis, and systemic diseases (e.g., cardiovascular issues).

Factors Influencing Oral Microbiota

- Diet (sugar intake, pH levels)
- Oral hygiene (brushing, flossing)
- Saliva composition
- Antibiotic use
- Smoking and alcohol consumption
- Systemic diseases (e.g., diabetes)

Maintaining a balanced oral microbiota is essential for oral and overall health, emphasizing the importance of good oral hygiene and a healthy diet.

Essential Amino Acids in the Human Diet

The **nine essential amino acids** that humans must obtain from their diet because the body cannot synthesize them are:

1. **Histidine** – Important for growth, tissue repair, and the production of histamine.
2. **Isoleucine** – Involved in muscle metabolism, immune function, and energy regulation.
3. **Leucine** – Supports protein synthesis, muscle repair, and blood sugar regulation.
4. **Lysine** – Essential for protein synthesis, calcium absorption, and immune function.
5. **Methionine** – Plays a role in metabolism, detoxification, and the production of other amino acids.
6. **Phenylalanine** – Precursor for neurotransmitters like dopamine, epinephrine, and norepinephrine.(PKU)
7. **Threonine** – Important for collagen and elastin formation, as well as fat metabolism.
8. **Tryptophan** – Precursor for serotonin and melatonin, influencing mood and sleep.
9. **Valine** – Supports muscle growth, tissue repair, and energy production.

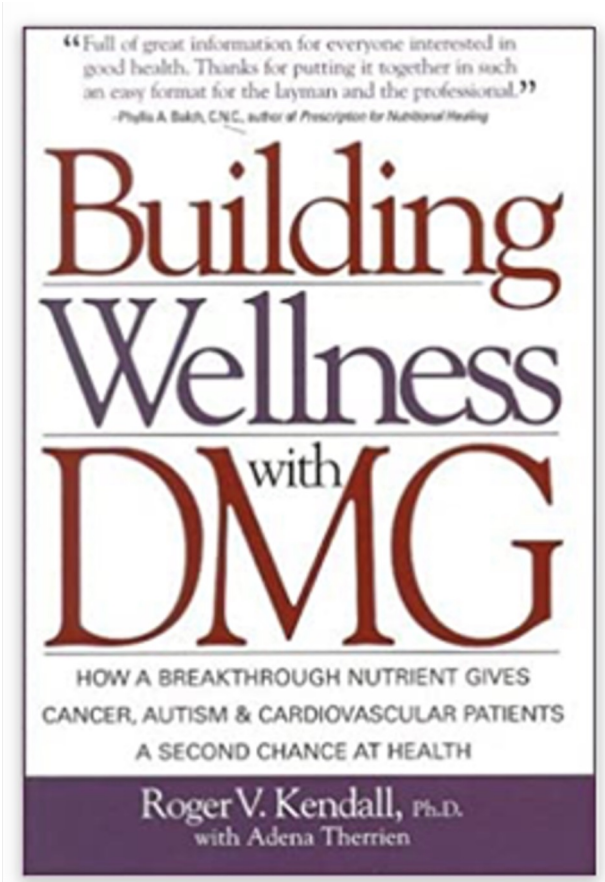
These amino acids are primarily obtained from **protein-rich foods** such as meat, fish, eggs, dairy, soy, and certain legumes and grains.

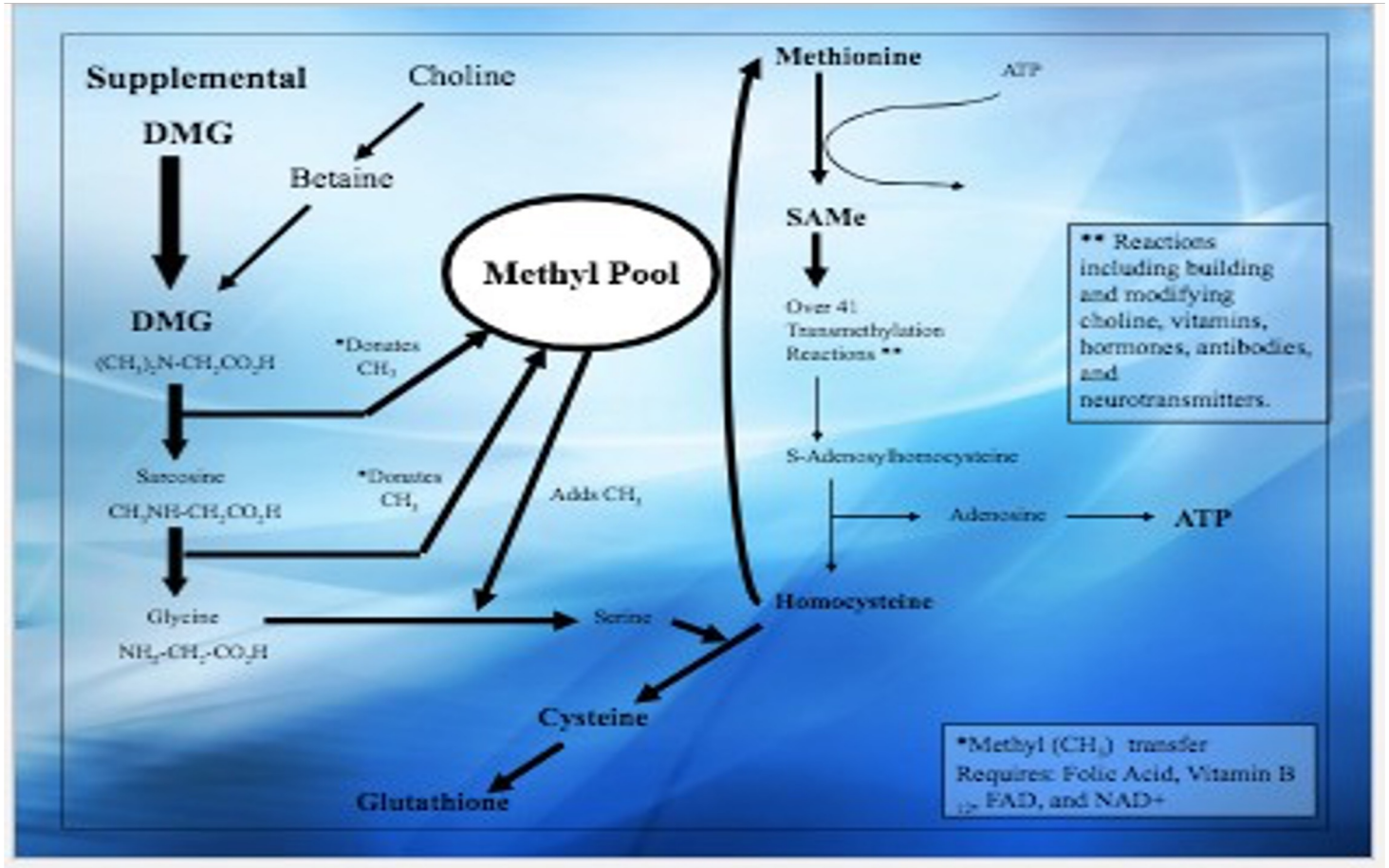
DiMethylGlycine

Nutrition's Best Kept secret for strengthening Genomic Pathways and Preventing Disease Amino Acid – Intermediary metabolite of the human body

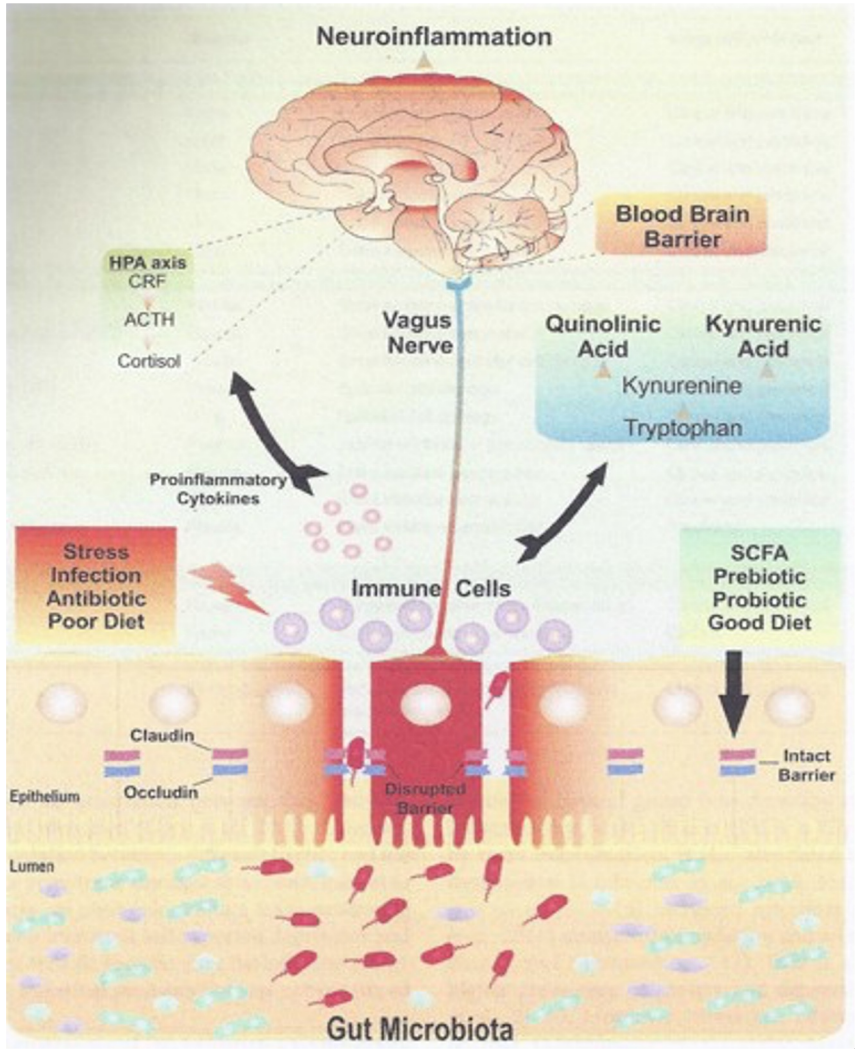
CH_3
$CH_3NCH_2C0_2$

- Amino Acid – Intermediary metabolite of the human body
- Important nutrient found in low levels in our food
- As a Key Nutrient DMG PROTECTS OUR DNA





Intestine: A Complex Ecosystem harboring Dense and Diverse Microbial Community key to Maintaining Health



Intestinal Microbiota: Important Player:

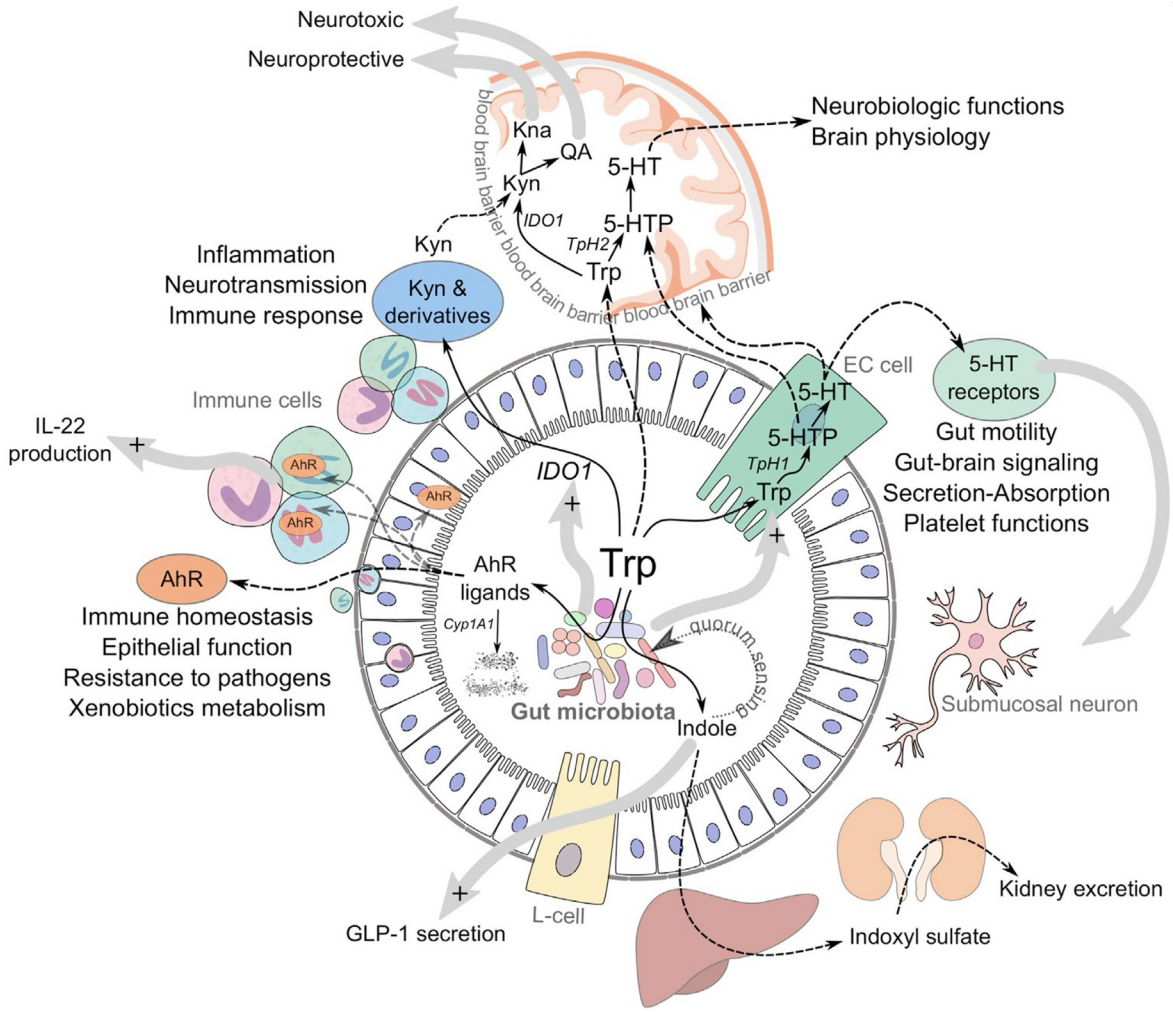
- Metabolic and Nutritional Homeostasis
- Immune system maturation
- Brain activity

- Dysbiosis =Loss of Balance=Disease
- Perturbation Host cell Microbiota Cross talk
- Initiating or reinforcing Neuroinflammation

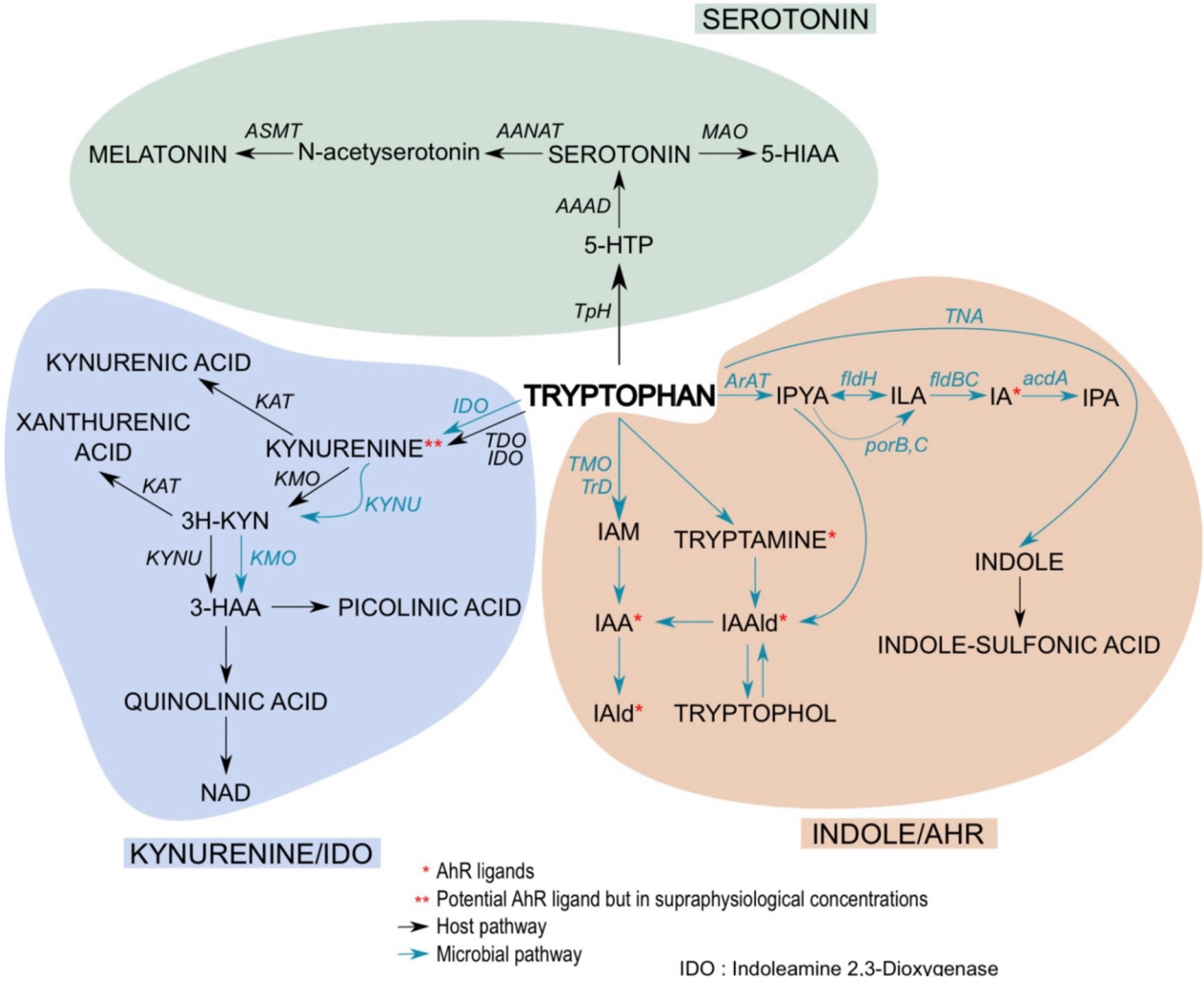
Studied Categories of Metabolites;

1. Short Chain Fatty acids bacterial fermentation of fibers
2. Bile acids in liver transformed by microbiota
3. Tryptophan (Trp) metabolism
4. Endocannabinoids(Phytocannabinoids)

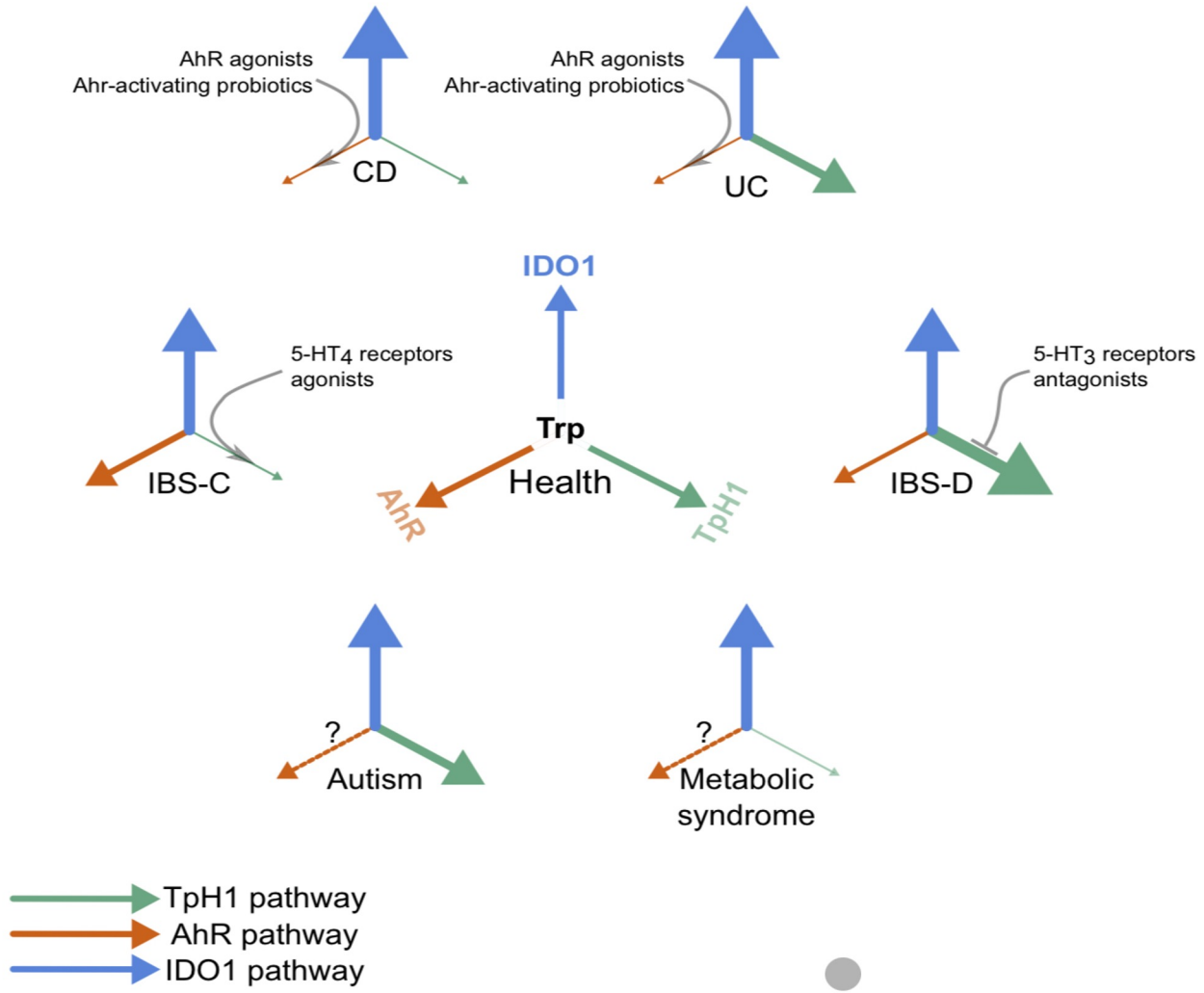
Integrated Tryptophan Metabolism under the Control of the Gut Microbiota



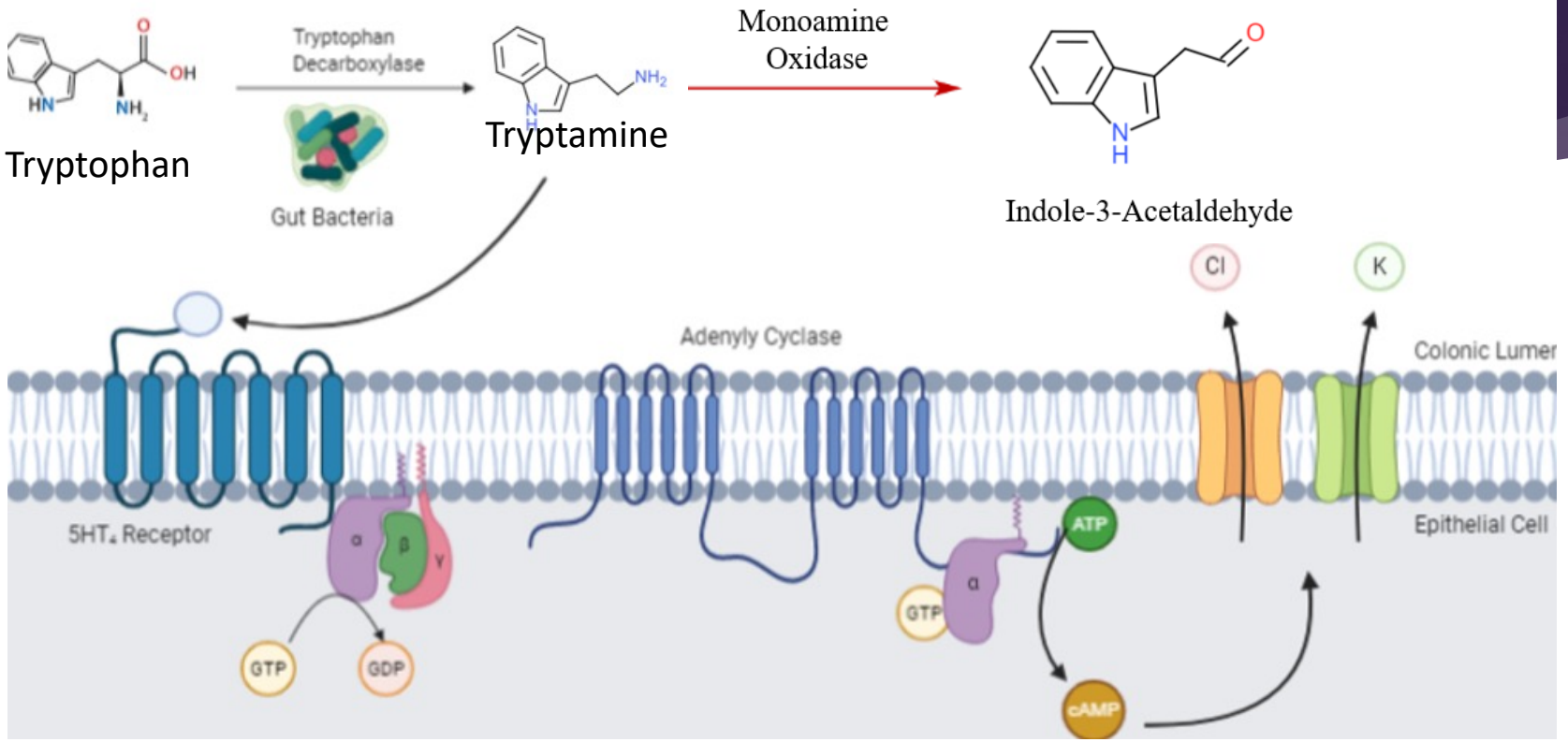
Pathways of Tryptophan Metabolism through 5-HT, Kyn & Indole/AhR Pathways

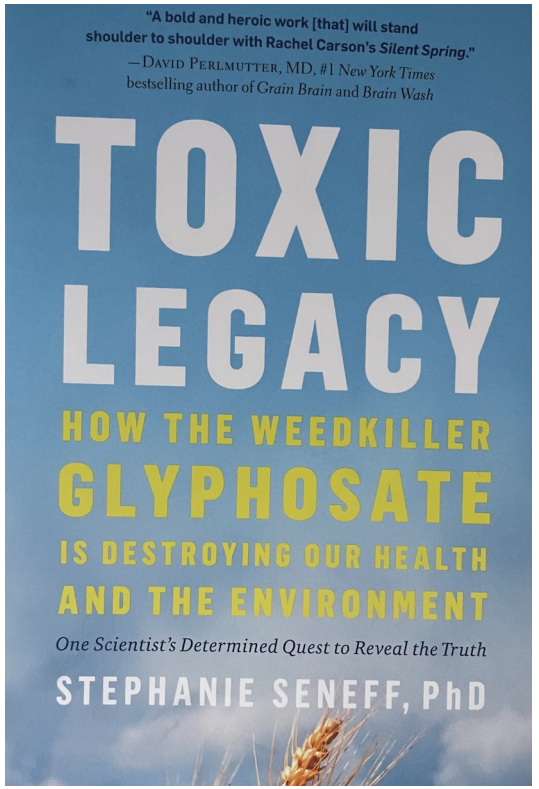


Perturbations to Tryptophan Metabolism in Acquired Immune Disease



GOD GIVEN/Endogenous Microbiota Metabolizes Tryptophan





Cell Host & Microbe

Short Article

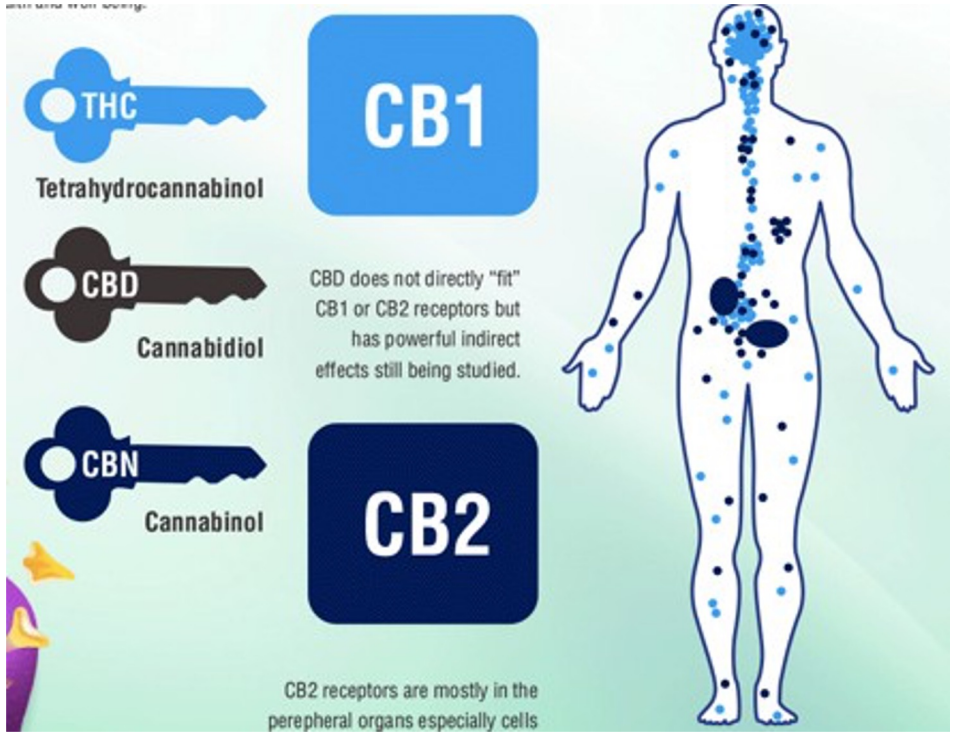
Gut Dysbiosis Promotes M2 Macrophage Polarization and Allergic Airway Inflammation via Fungi-Induced PGE_2

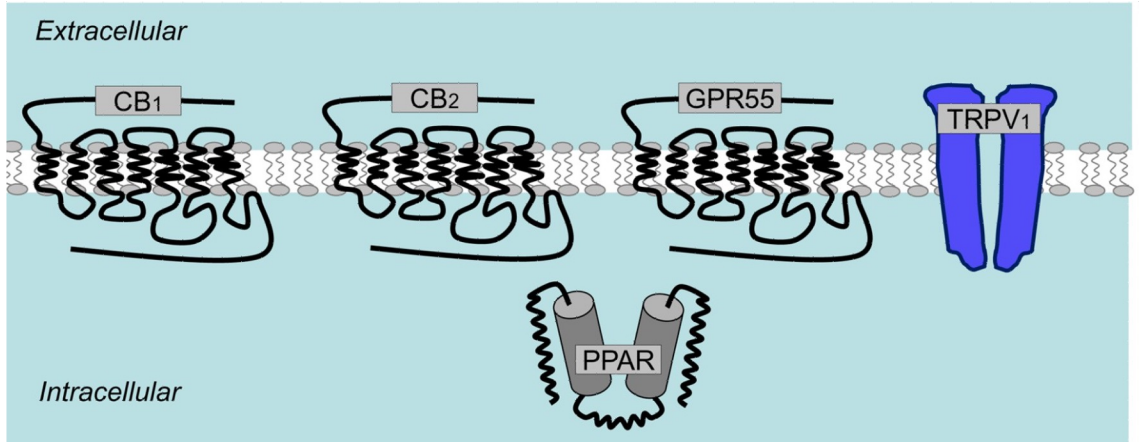
- Only certain antibiotics promote fungal overgrowth in the gut
- Specific commensal bacteria prevent colonization of Candida
- Celebrex

The Human Endocannabinoid System (eCS)
GOD GIVEN DIMMER SWITCH ON INFLAMMATION

A signaling system that helps to modulate all other physiological, behavioral, and energetic processes in the body.

~ Glia. 2010 July ; 58(9): 1017–1030

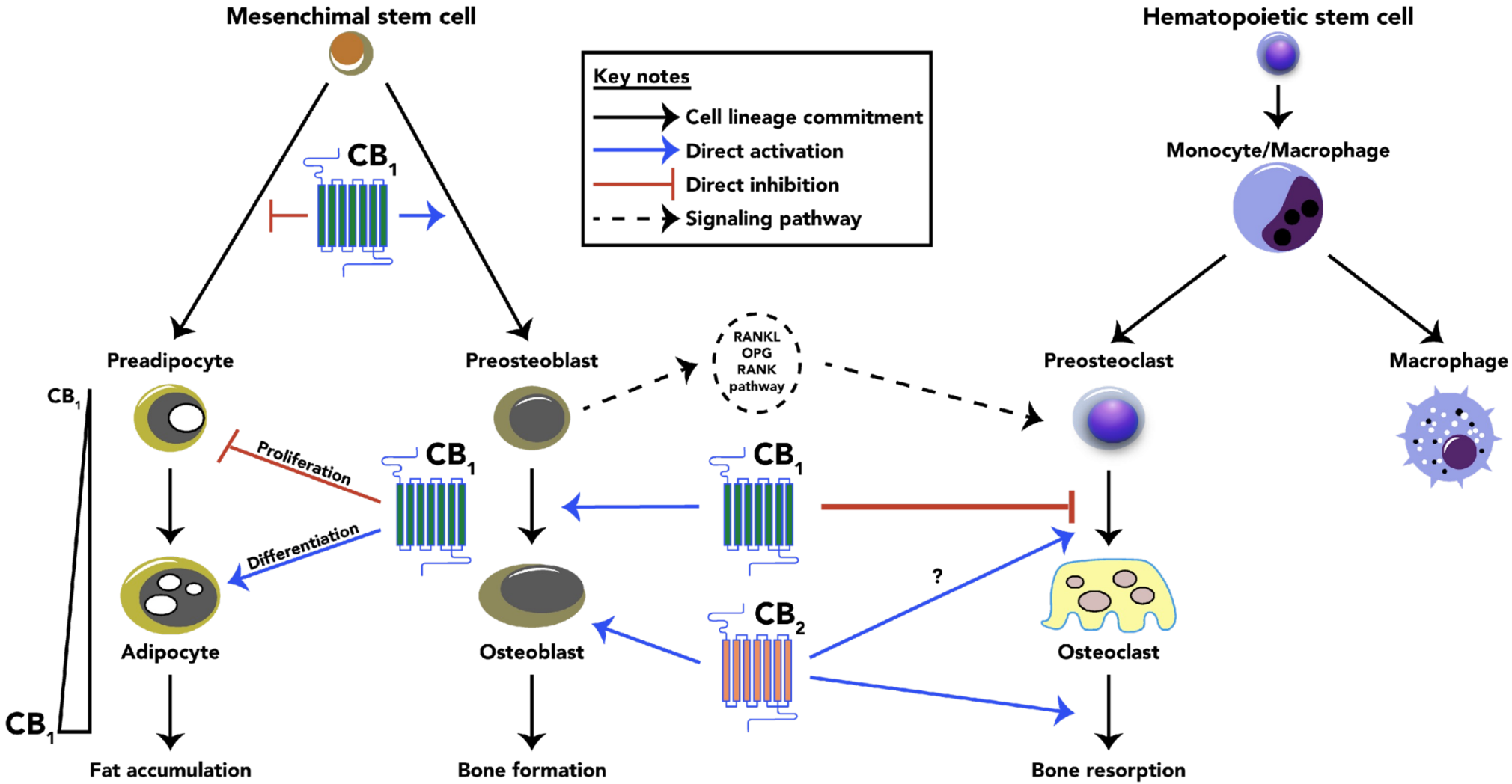




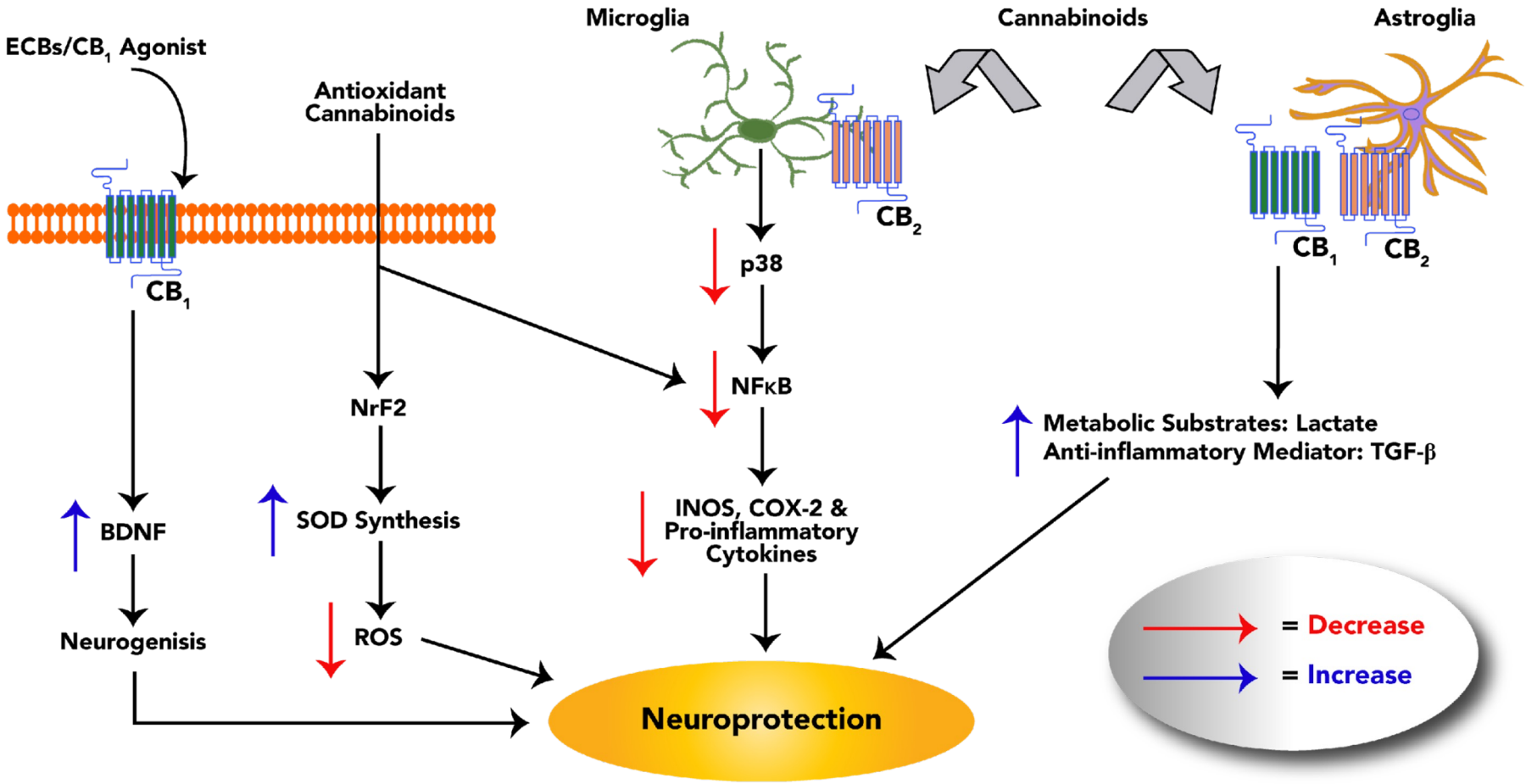
Anxiety ● Depression● Sleep Disorders● Pain ● Itch ● Wound healing

neuroprotection & plasticity ● immunity & inflammation ● apoptosis & carcinogenesis ● pain and emotional memory ● Supports detoxification: repairs Fibrosis and Fatty Liver disease

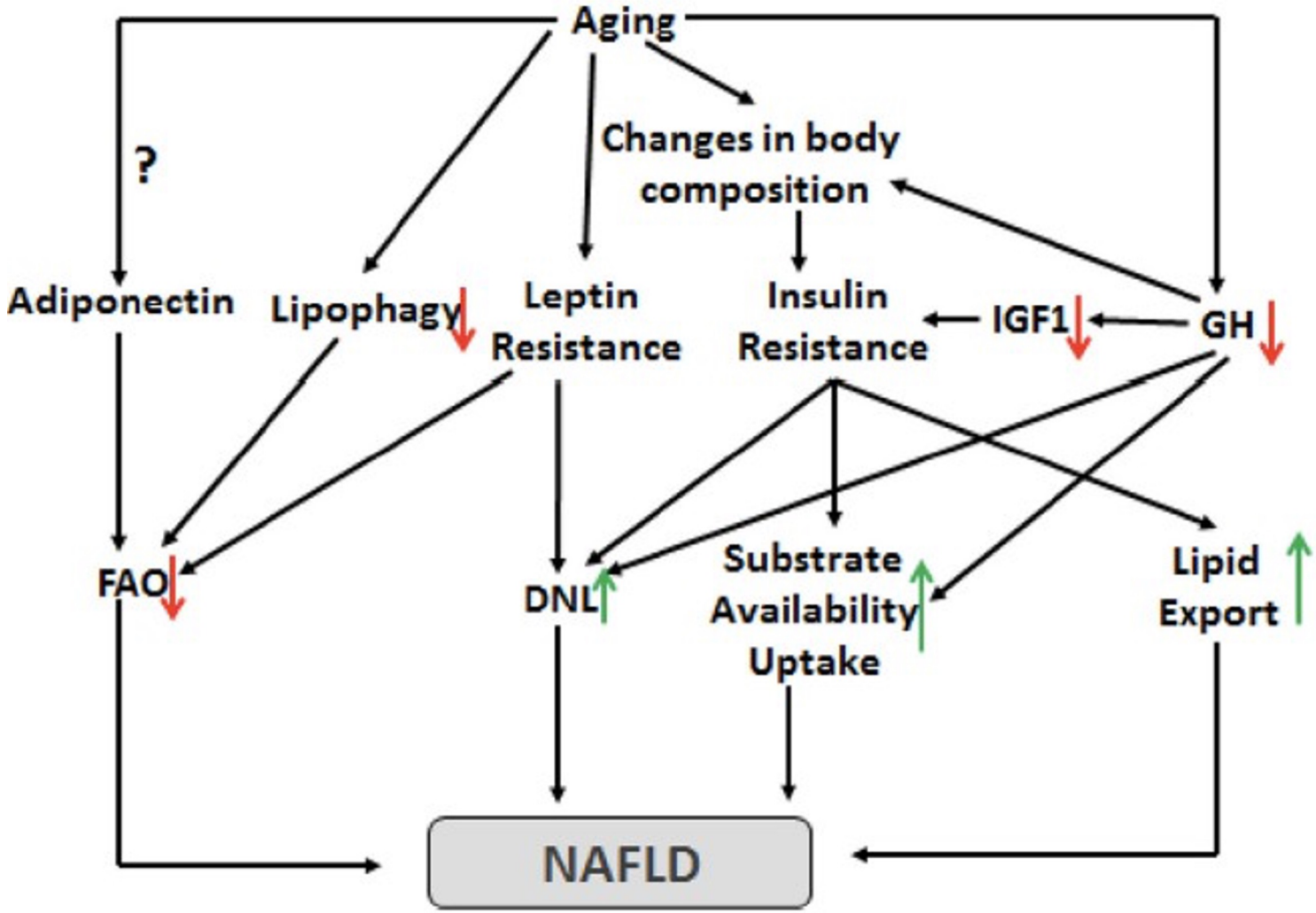
CB2 Is associated with Chronic inflammation of the nervous system Cardiovascular system and Bone Disorders



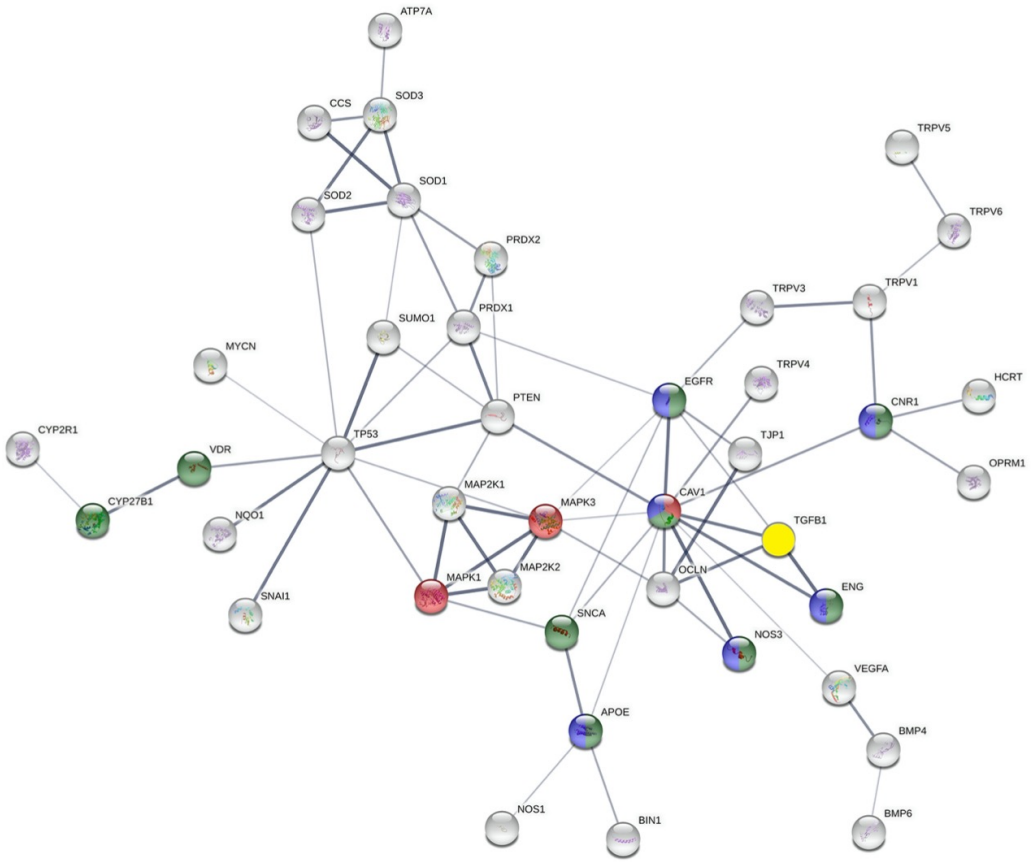
Neuroprotection by Endocannabinoid Modulation in Neurodegenerative Disease



InflamAging is associated with dysregulation of Glucose and lipid metabolism



CardioMiracle: living mineral water
Foundational healing VACCINE AIDS



Regulation of monooxygenase activity

Caveolin-mediated endocytosis

Regulation of nitric-oxide synthase activity

frontiers | Frontiers in Nutrition

TYPE Original Research
PUBLISHED 15 August 2022
DOI 10.3389/fnut.2022.885364

Check for updates

OPEN ACCESS

EDITED BY
Maurizio Muscaritoli,
Sapienza University of Rome, Italy

REVIEWED BY
Simone Potje,
Minas Gerais State University, Brazil
Rridha Oueslati,
University of Carthage, Tunisia

*CORRESPONDENCE
Anton Franz Fliri
anton.fliri@emergentsa.com

SPECIALTY SECTION
This article was submitted to Clinical Nutrition, a section of the journal Frontiers in Nutrition

RECEIVED 07 March 2022
ACCEPTED 14 July 2022
PUBLISHED 15 August 2022

Functional characterization of nutraceuticals using spectral clustering: Centrality of caveolae-mediated endocytosis for management of nitric oxide and vitamin D deficiencies and atherosclerosis

Anton Franz Fliri* and Shama Kajiji

Emergent System Analytics LLC, Clinton, CT, United States

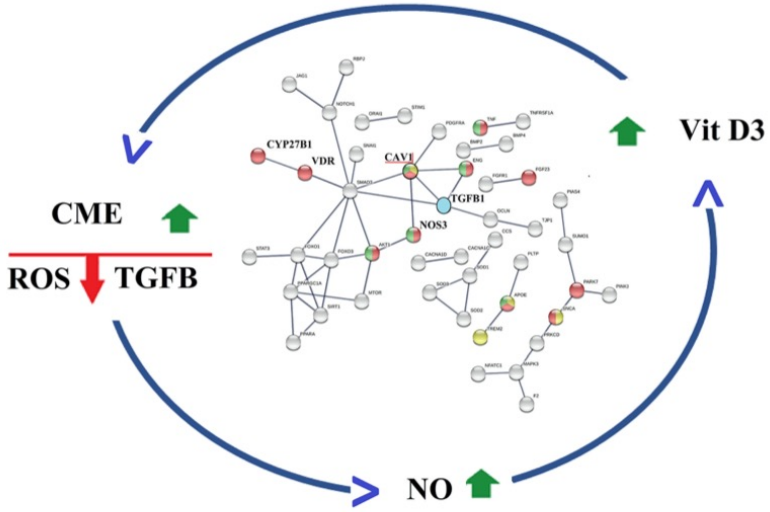


FIGURE 4
Caveola mediated endocytosis (CME) modulates activities of a reciprocal feedback loops that finetunes ROS production, TGF beta activity, Nitric oxide levels O and Calcitriol production.

Hematopoietic Stem Cell : the Orchestrator of the Development of Humans

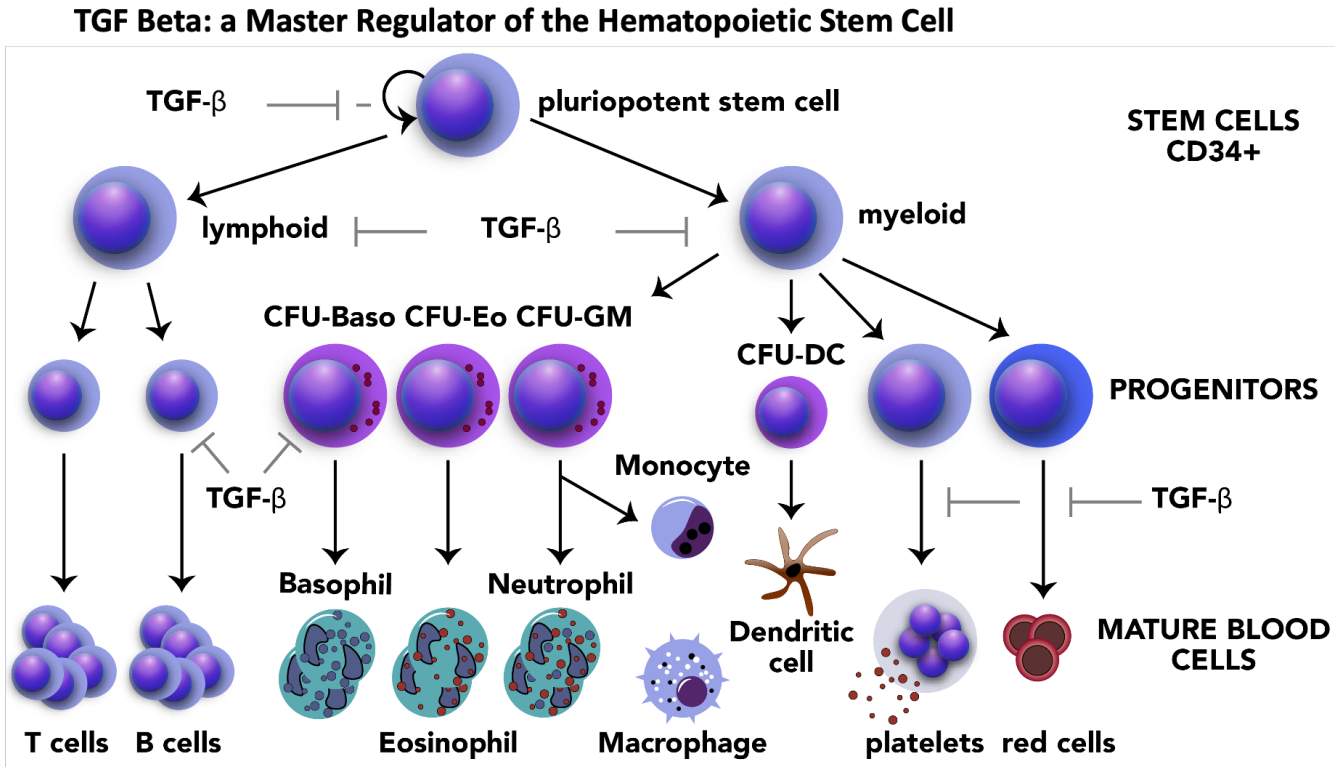
TGFβ: The Conductor of the 1 Billion Blood Cells Produced Each Day

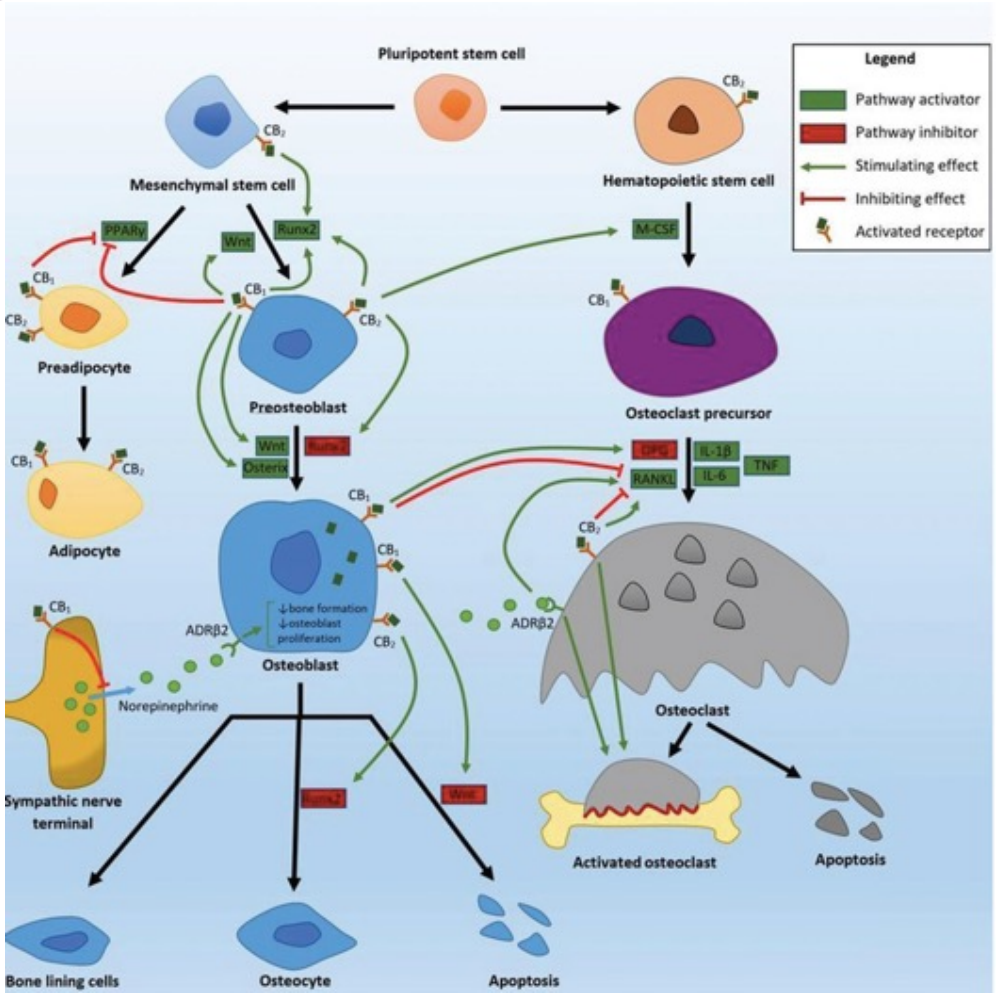
Trends in Neurosciences

Review

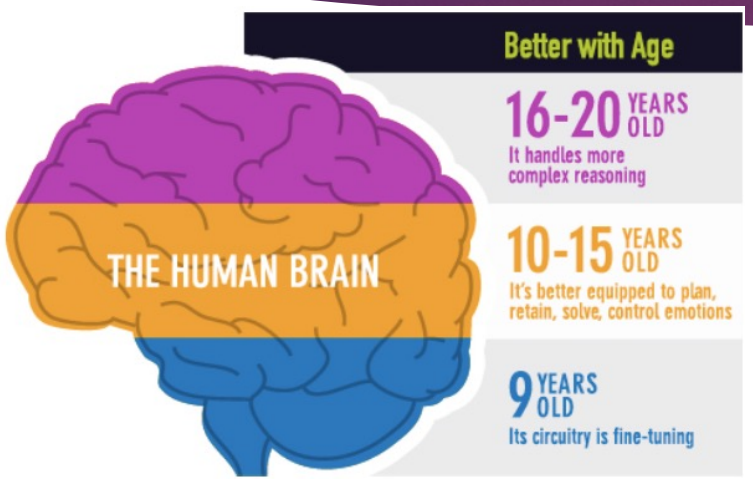
Ion Channel Functions in Early Brain Development

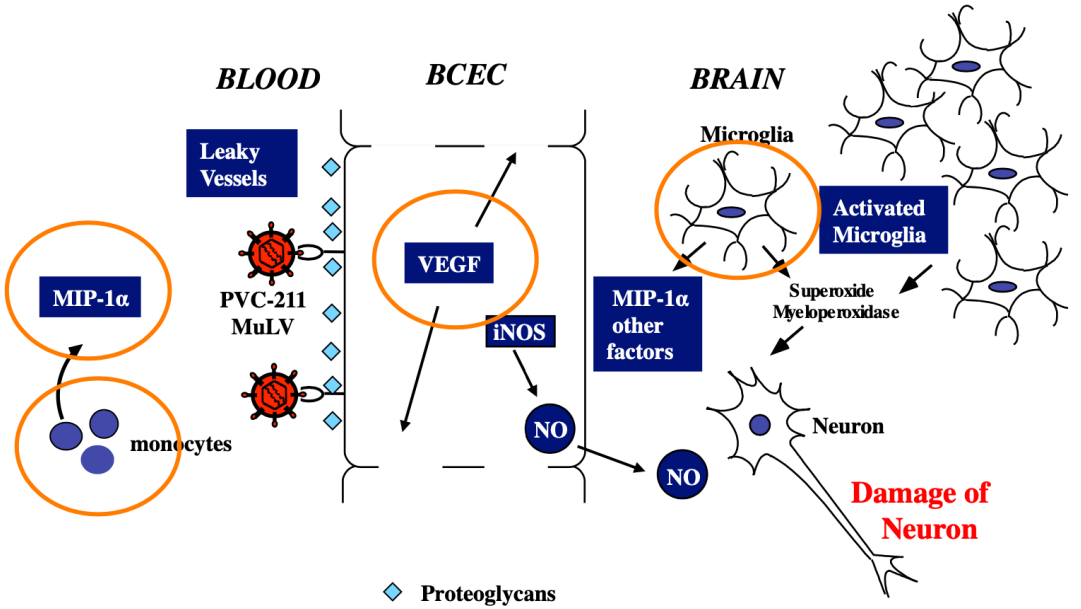
Richard S. Smith[1,*] and Christopher A. Walsh[1,*]

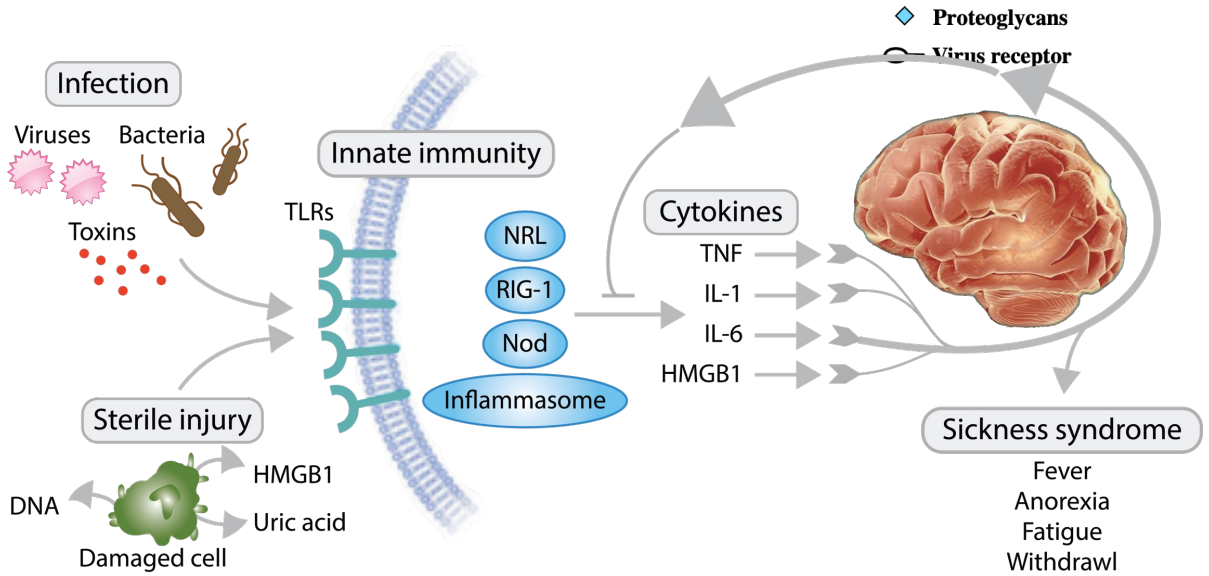




Better With Age: the Immune System Is Not Static It Changes/Refines With Age

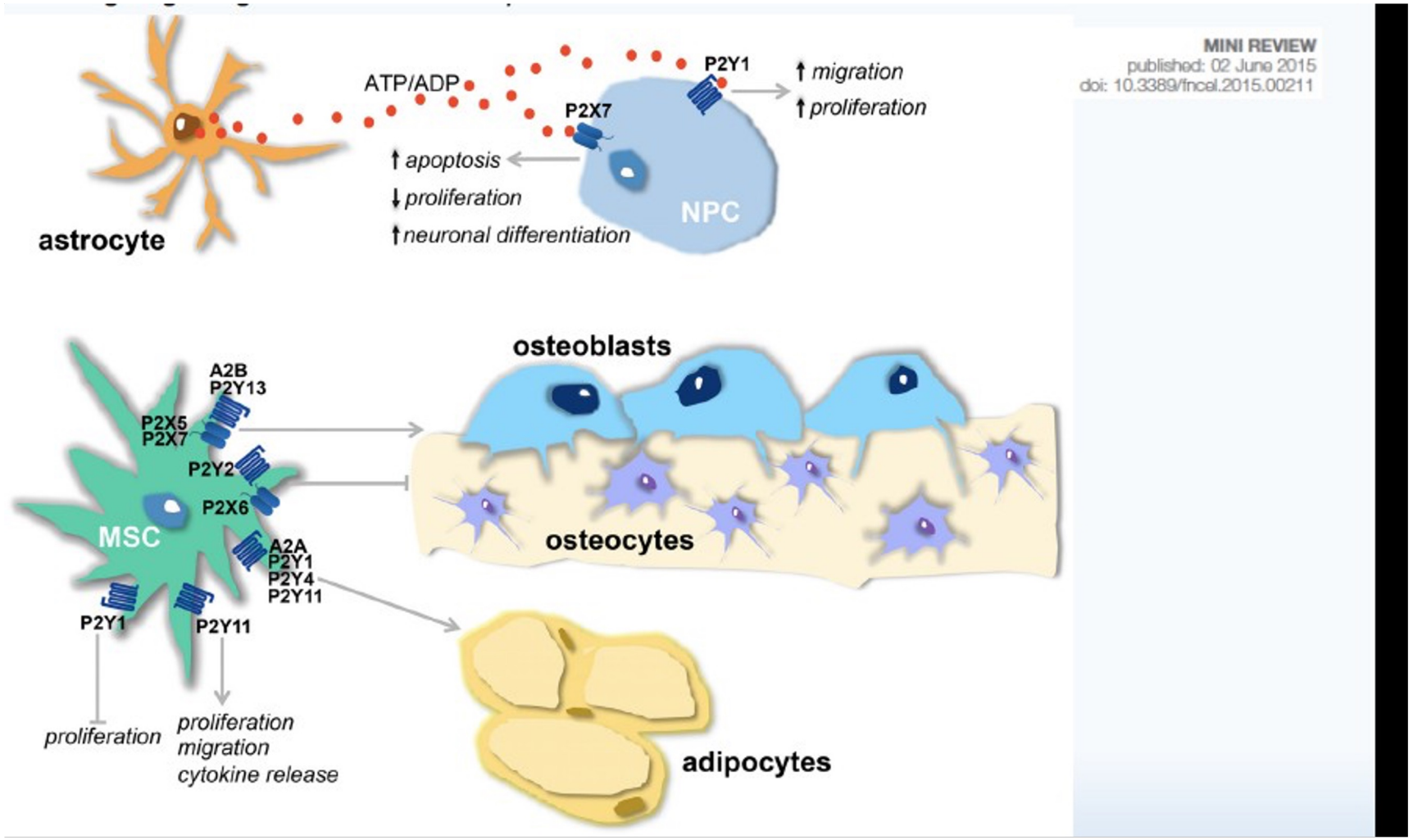






- The Brain cannot tolerate the introduction of antigens without eliciting an inflammatory immune response

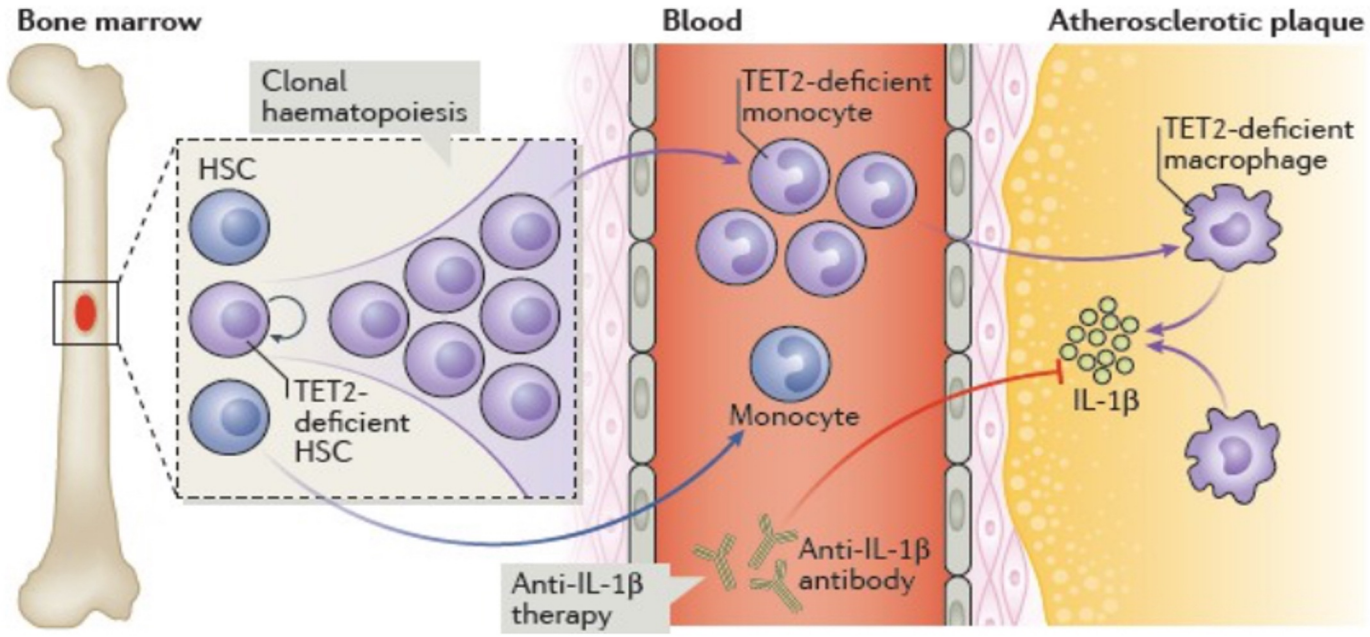
Purinergic Signaling In Neural and Mesenchymal Stem cell maintenance and Differentiation



InflamAging is associated with dysregulation of Glucose and lipid Metabolism

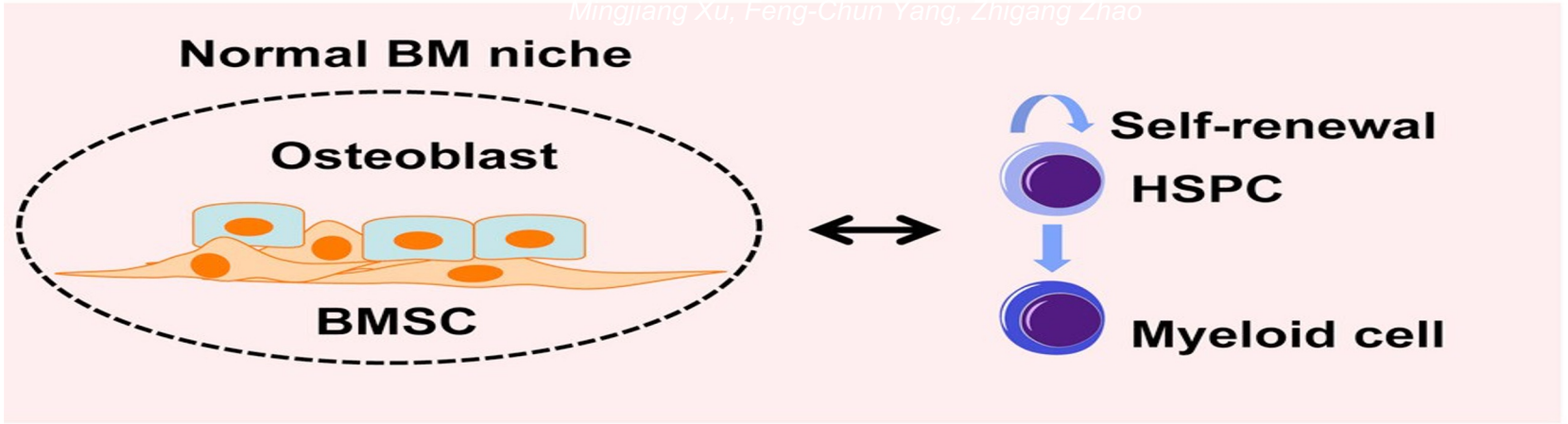
Key advances

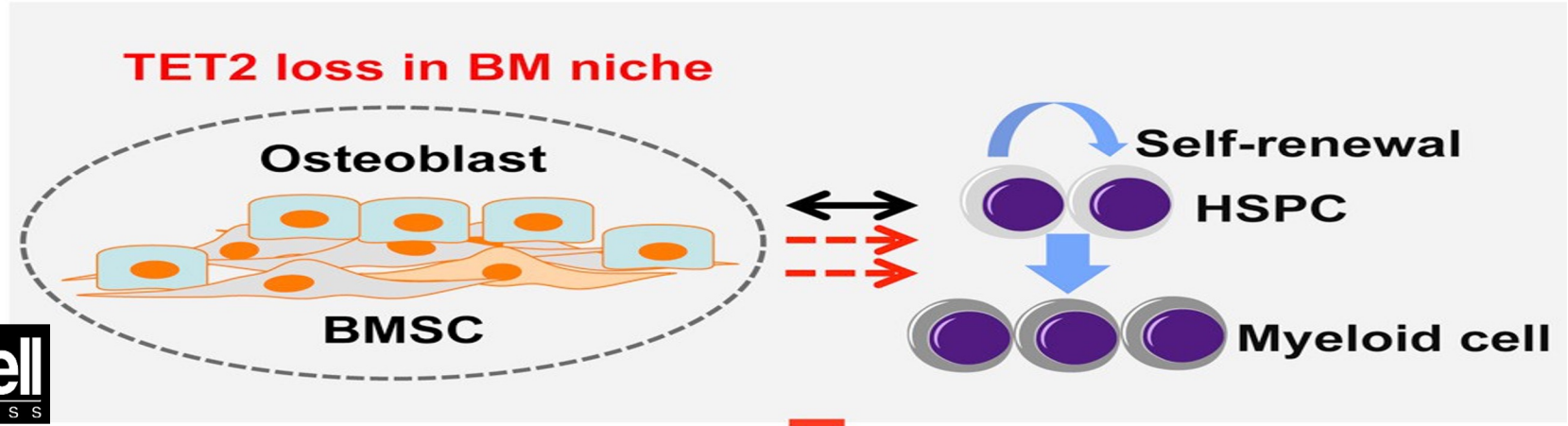
- Methylcytosine dioxygenase 2 (TET2) deficiency leads to clonal haematopoiesis that accelerates atherosclerosis in mice[3]
- In humans, age-associated clonal haematopoiesis predicts cardiovascular events; mice with TET2 deficiency develop accelerated atherosclerosis[4]
- Blocking the inflammatory cytokine IL-1β mitigates cardiovascular disease in patients with a history of myocardial infarction[6]
- Patients whose levels of C-reactive protein in plasma decline in response to IL-1β-blocking treatment have a more dramatic reduction in the incidence of cardiovascular events[7]



TET2 Loss Dysregulates the Behavior of Bone Marrow Mesenchymal Stromal Cells a Accelerates Tet2−/−-Driven Myeloid Malignancy Progression

Mingjiang Xu, Feng-Chun Yang, Zhigang Zhao

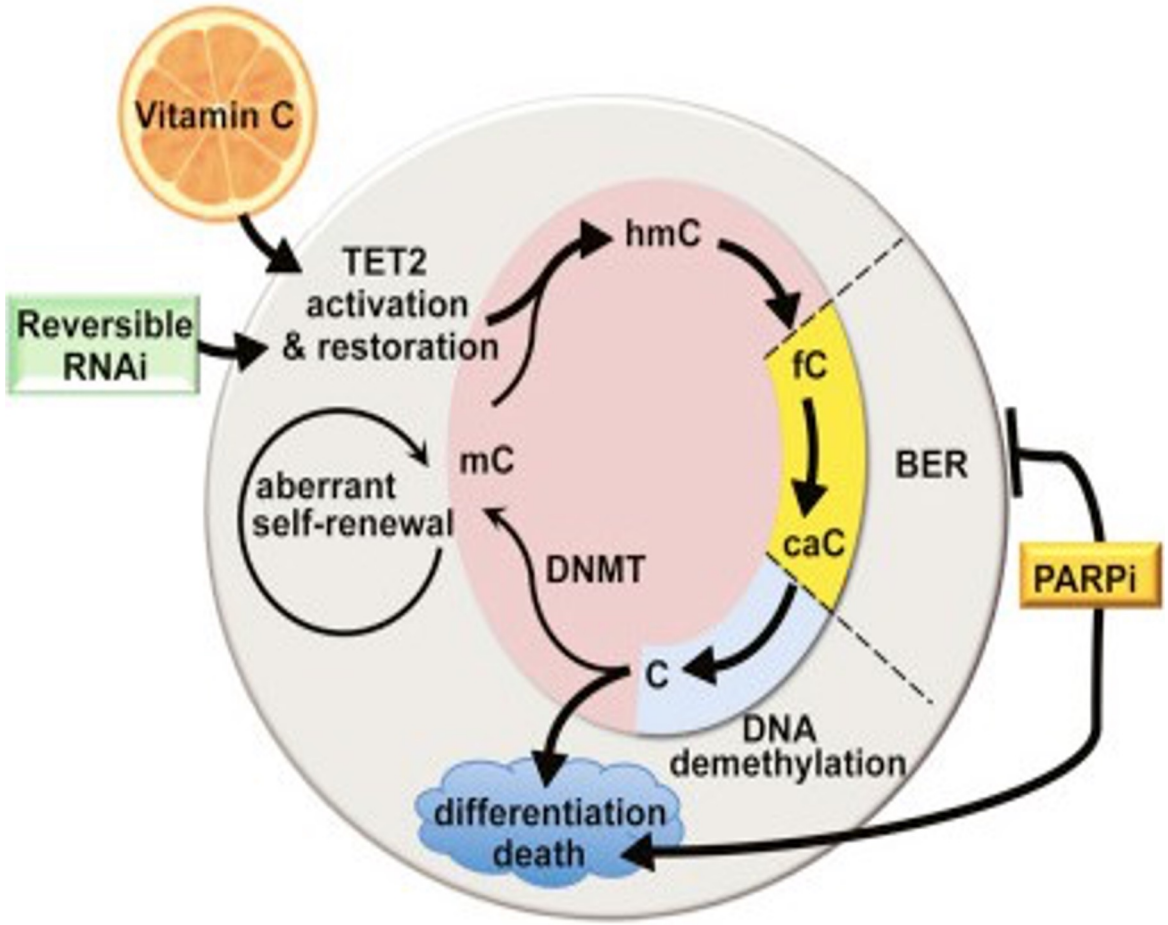




Cell PRESS

Accelerates myeloid malignancy progression

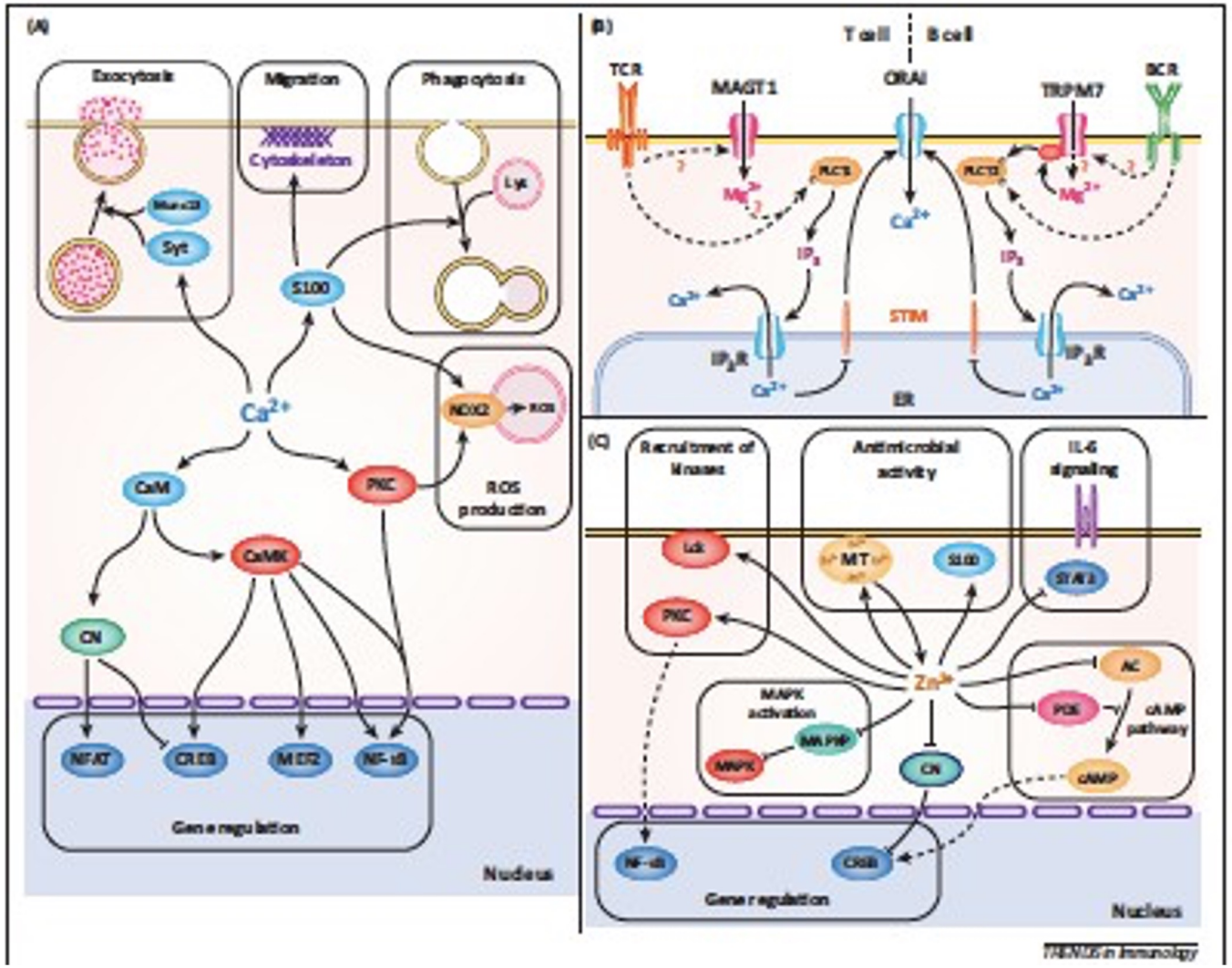
Restoration of TET2 Function Blocks Aberrant Self-Renewal and Leukemia Progression



- Tet2 restoration reverses aberrant self-renewal of Tet2-deficient cells
- Tet2 restoration promotes DNA demethylation, differentiation, and cell death
- Vitamin C treatment mimics Tet2 restoration to block leukemia progression
- Vitamin C treatment in leukemia cells enhances their sensitivity to PARP inhibition

DOI: http://dx.doi.org/10.1016/j.cell.2017.07.032

Dysregulation of Cation Signaling Causes Acquired Immune Deficiency Dysfunction (AIDS)



Review

CellPress

Divalent cation signaling in immune cells

Benjamin Chaigne-Delalande and Michael J. Lenardo

Trends in Immunology July 2014, Vol. 35, No. 7

Divalent cations of two alkaline earth metals Ca2+ and Mg2+ and transitional metal Zn2+ play vital roles in immune Signaling in Immune function. Dysregulation at the heart of retroviral associated disease

Non-selective cationic channels in chemical and physical stress?

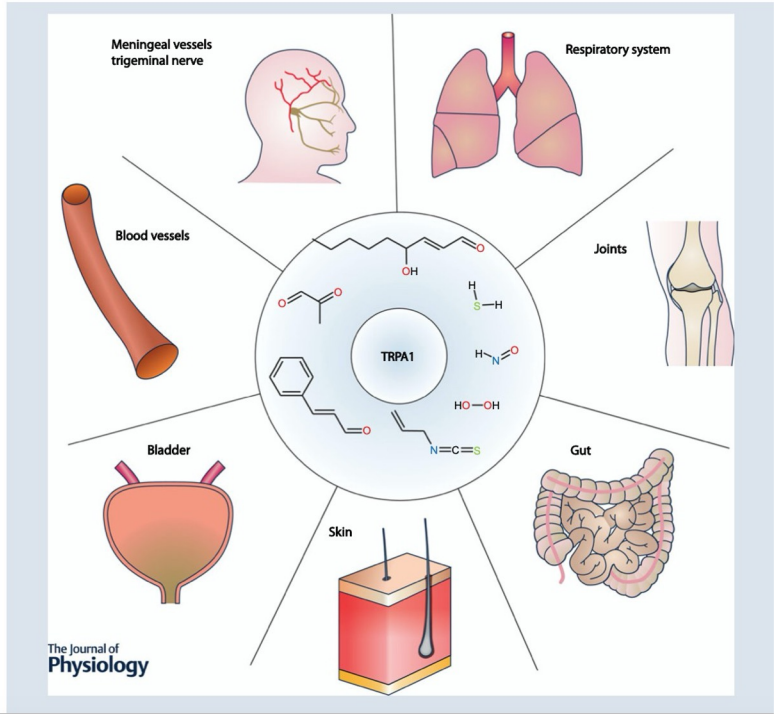
J Physiol 594.15 (2016) pp 4151–4169

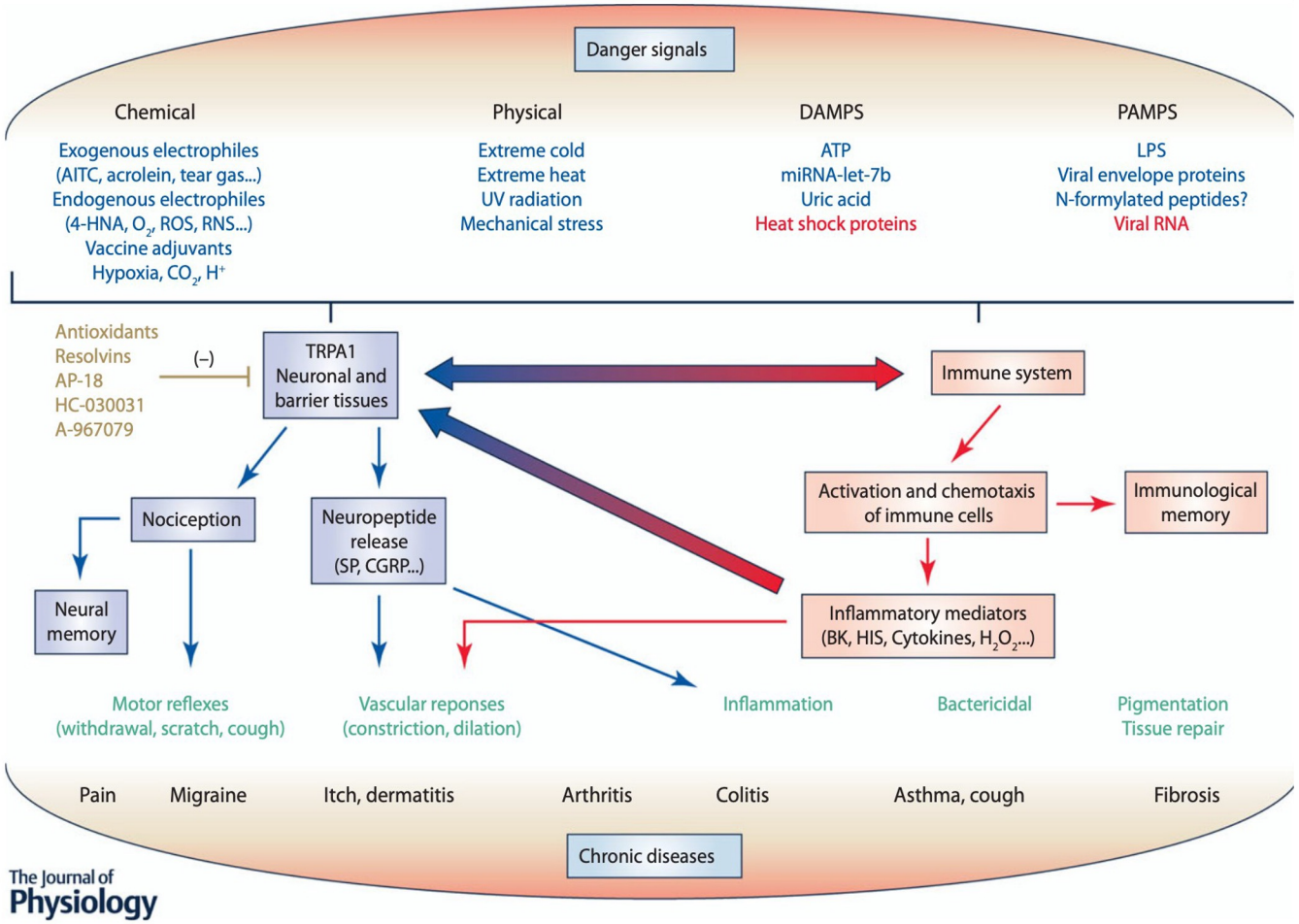
SYMPOSIUM REVIEW

TRPA1 channels: molecular sentinels of cellular stress and tissue damage

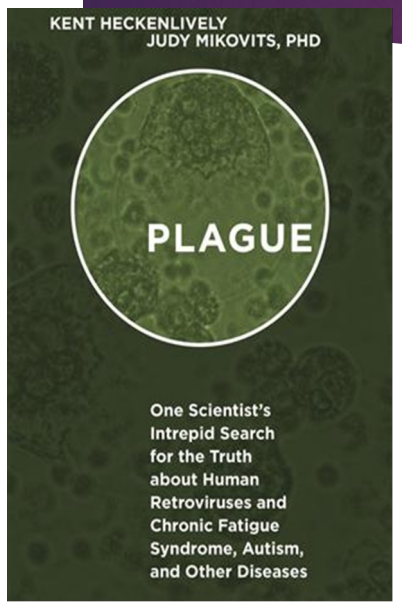
Félix Viana

Instituto de Neurociencias de Alicante, Universidad Miguel Hernández-CSIC, Alicante, Spain

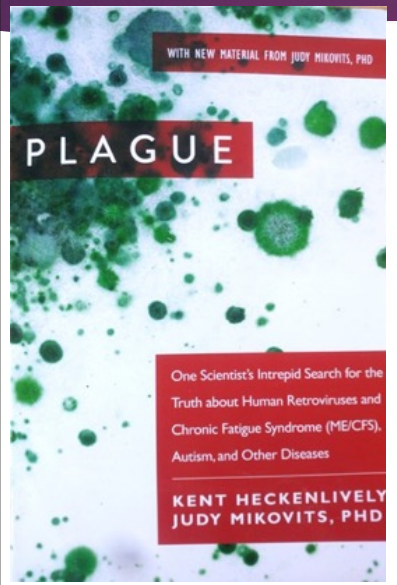




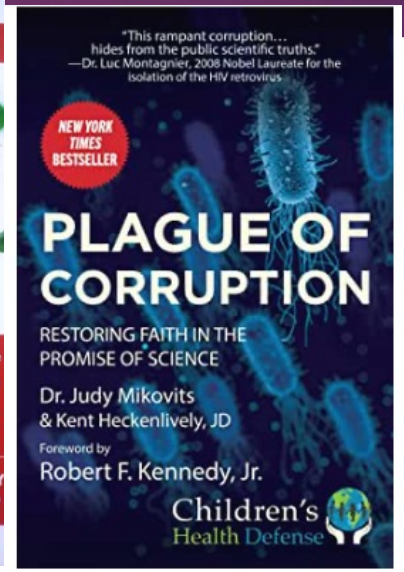
GOD's People are destroyed from lack of Knowledge (Hosea 4:6)
THE FEAR OF THE LORD is the Beginning of Knowledge but Fools Despise Wisdom & Instruction (PROVERBS 1:7)



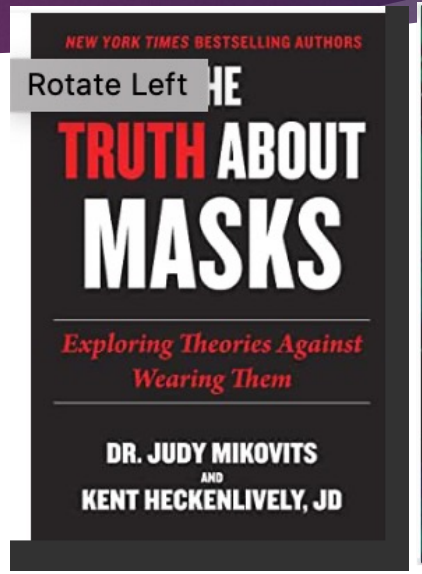
2014 (James 1:19-22)



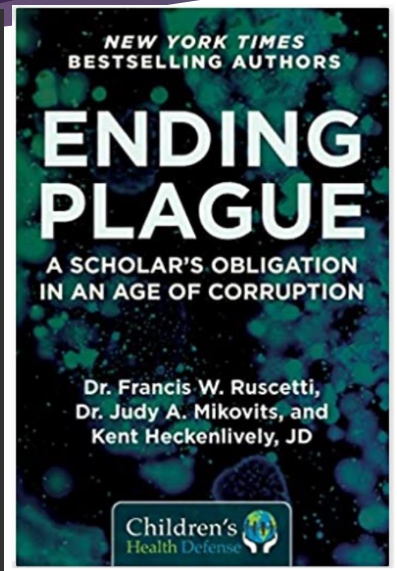
2017



April 2020 Psalm 91



2021(Ephesians 5:11



2021(2 Chronicles 7:14)

DrJudy@TheRealDrJudy.com
Shop.therealdrjudy.com
Text :805-797-6967 (signal)