

New Test Kits and Single Vials - Autumn 2016

New Single Vials:

● **Biofilm Vial: \$11**

Bacteria living in a biofilm usually have significantly different properties from free-floating bacteria of the same species, as the dense and protected environment of the film allows them to cooperate and interact in various ways.

● **T Helper Cells 1 & 2 vials: \$22 for set of 2 vials**

T cells are also known as T lymphocytes. The "T" stands for "thymus", the organ in which these cells mature. They are a type of white blood cell that is of key importance to the immune system and is at the core of adaptive immunity, the system that tailors the body's immune response to specific pathogens. The T cells are like soldiers who search out and destroy the targeted invaders. T cells can produce substances called cytokines such as the interleukins which further stimulate the immune response.

Virus 3 Update (4 vials): \$11 each or \$27 for the set of 4 (or one can purchase the complete Virus 3 kit (\$85) which has now been updated with these 4 vials)

● **Chikungunya** - Causes fever and joint pain; other symptoms may include headache, muscle pain, joint swelling, or rash. Transmitted by mosquito. Outbreaks have occurred in countries in Africa, Asia, Europe, and the Indian and Pacific Oceans and the Caribbean. There is a risk that the virus will be imported to new areas by infected travellers.

● **Herpes 7** - Often acts together with herpes virus 6; can cause a skin condition in infants known as exanthema subitum; also leads to or is associated with a number of other symptoms, including acute febrile respiratory disease, fever, rash, vomiting, diarrhoea, low lymphocyte counts, and febrile seizures, though often no symptoms present at all. Over 95% of adults have been infected and are immune to HHV-7, and over three quarters of those were infected before the age of six.

● **Parvovirus B19** - Causes a mild rash illness called erythema infectiosum or Fifth Disease; more common in children than adults. People with weakened immune systems caused by leukemia, cancer, organ transplants, or HIV infection are at risk for serious complications from fifth disease.

● **Zika virus** - Most common symptoms are fever, rash, joint pain, and conjunctivitis. The illness is usually mild with symptoms lasting from several days to a week. Reports of Guillain-Barré syndrome and pregnant women giving birth to babies with birth defects and poor pregnancy outcomes have been linked to the virus. Outbreaks have occurred in areas of Africa, Southeast Asia, the Pacific Islands and South America. Transmitted by mosquitos.

Vaccination Update Vials:

● **Vaccination 2015/2016 vials: \$13 - 2 vial set**

Two vials containing the 2015/2016 flu vaccine strains covering the two delivery methods:

- an injection, which contains the inactivated form of the virus.

- a nasal spray of live attenuated influenza vaccine, which contains the attenuated or weakened form of the virus. (in the past this has been one vial each year - injection only).

If you have not updated your annual influenza vaccination vial, as above (or as listed as #10 vial in the Vaccination Kit) for some time you can get the:

● **Vaccination 1992 to 2015/2016 update vial: \$9**

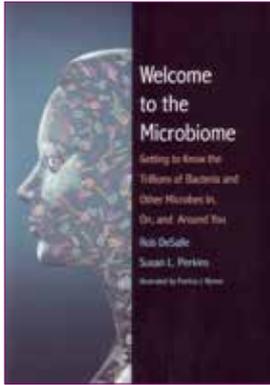
1992 & then 1994 to 2015/2016, including both the injectable and the nasal versions for 2015/2016.

Sale Vials (available until sold out)

Meningitis C (\$5)
Mercury (\$7)
Candida (\$7)
House Dust Mite (\$5)
Tooth (\$3)
Urethra (\$3)
Bartonella Alsaticca (\$3)
HSV1 Virus (\$3)

Cows Milk (\$5)
Platinum (\$3)
Wheat Flour - White (\$5)
Heliobactor Pylori (\$7)
Pneumoccal/Prevenar (\$3)
Progesterone/Testosterone/Oestrogen (\$22 set of 3)
Gardisal & Cervarix: (CC vaccination vials - \$11 set of 2)

Some fascinating & interesting reading.....



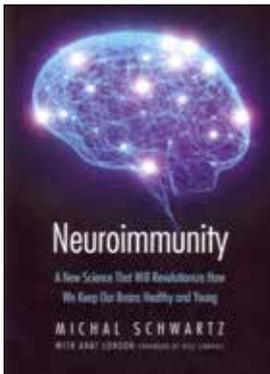
Welcome to the Microbiome by DeSalle & Perkins **\$49 HC**

Getting to Know the Trillions of Bacteria and other Microbes in, on and around you

This thoroughly fascinating and absorbing book explores the paradigm shift from a focus on single pathogenic organisms to understanding communities of organisms living in and on us. It presents the historical perspective and describes recent scientific developments. New molecular genetics techniques have dramatically expanded the number of identifiable microbial species, forcing scientists to reconsider the interactions these species have with each other and with humans. The authors reveal the astounding diversity of species composition that exists across body parts and systems from the skin to the digestive system and across both individuals and groups. As with any complex ecosystem, the human microbiome is composed of species playing varied roles; when a critical species begins to decline, it alters the entire ecosystem. In one striking example, the authors describe the human relationship with *Helicobacter pylori*, the organism largely responsible for peptic ulcers. Researchers have found ways of dramatically reducing the presence of *H. pylori*, but this may have led to increased rates of heartburn, esophageal cancer, and asthma. They also present compelling evidence that obesity can be caused in part by gut-bacteria composition.

"In Welcome to the Microbiome DeSalle and Perkins provide nothing short of a primer to being human, from the perspective of our ancient associations with microscopic species, the species that live in your teeth, ears and colon, the species that are sometimes described as being 'on you,' but as DeSalle and Perkins make clear, really are you. If you want to understand yourself, your flesh, your existence and struggles, what it is that you see and don't see when you stand naked in the mirror, read this book."—Rob Dunn, author of *The Man Who Touched His Own Heart*

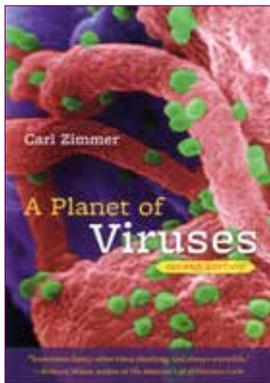
"In, On, and Around You' gets it right—we are specks in the microbial world. We must deeply understand that fact, so we can make smarter decisions about our health."—Martin Blaser, author of *Missing Microbes*



Neuroimmunity by Michal Schwartz **\$49 HC**

A New Science that will Revolutionise how we Keep our Brains Healthy and Young

In the past, the brain was considered an autonomous organ, self-contained and completely separate from the body's immune system. But over the past twenty years, neuroimmunologist Michal Schwartz, together with her research team, not only has overturned this misconception but has brought to light revolutionary new understandings of brain health and repair. In this book Schwartz describes her research journey, her experiments, and the triumphs and setbacks that led to the discovery of connections between immune system and brain. Schwartz also explains the significance of the findings for future treatments of brain disorders and injuries, spinal cord injuries, glaucoma, depression, and other conditions such as brain aging and Alzheimer's and Parkinson's diseases.



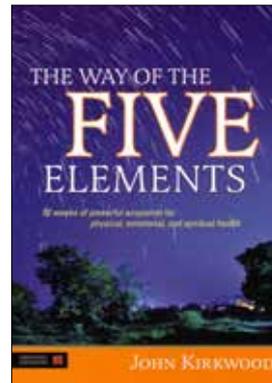
A Planet of Viruses

by Carl Zimmer

\$27 SC

A fascinating tour of a formidable hidden world

A Planet of Viruses is Carl Zimmer's eye-opening look at the hidden world of viruses. This updated edition includes the stories of new outbreaks, such as Ebola, MERS, and chikungunya virus; new scientific discoveries, such as a hundred-million-year-old virus that infected the common ancestor of armadillos, elephants, and humans; and new findings that show why climate change may lead to even deadlier outbreaks. Zimmer's lucid explanations and fascinating stories demonstrate how deeply humans and viruses are intertwined. Viruses helped give rise to the first life-forms, are responsible for many of our most devastating diseases, and will continue to control our fate for centuries.



The Way of the Five Elements

by John Kirkwood

\$45 HC

52 weeks of powerful acupoints for physical, emotional, and spiritual health

Journeying through the seasons of the Five Elements, this book covers 52 acupoints, their functions in the everyday world and their physical, emotional and spiritual associations. It includes images that express the spirit of the season, and clear descriptions and photographs of the point locations.

A very practical and useful book on some of the most important acu points, done so in a manner that many people often seek. **Highly Recommended.**

Protozoa Test Kit

37 vials, \$147

**Protozoa are the simplest, most primitive type of animal, consisting of a single cell.
They are resistant to antibiotics.**

A large number of the vials are unique to this kit, but the kit contains some protozoa that are also in the Fungus 1 Test Kit and Parasite 2 Test Kit. In addition the three most medically significant protozoa from the Lyme Plus test kit are included here.

PZ 01 Acanthamoeba Sp., Trophozoites

Inhabit a variety of air, soil, and water environments; cause granulomatous amoebic encephalitis and amoebic keratitis and have been associated with cutaneous lesions and sinusitis.

PZ 02 Babesia Bigemina

North and South America, Southern Europe, Africa, Asia and Australia. Causes Babesiosis /Piroplasmosis, also known as Texas cattle fever, redwater fever, tick fever, and Nantucket fever. Gives malaria-like symptoms. As a result, malaria is a common misdiagnosis for the disease; for 25% of cases in adults and half of cases in children, the disease is asymptomatic or mild with flu-like symptoms.

PZ 03 Babesia Divergens

Has been found in Turkey, Spain, Canary Islands, Tunisia, Austria, France and Norway. Causes Babesiosis /Piroplasmosis; infections have a much higher fatality rate (42%) than with other strains and present with the most severe symptoms: haemoglobinuria followed by jaundice, a persistently high fever, chills and sweats. If left untreated, can develop into shock-like symptoms with pulmonary oedema and renal failure.

PZ 04 Babesia Microti / Theileria Microti

Common in US; causes Babesiosis /Piroplasmosis; also known as Texas cattle fever, redwater fever, tick fever, and Nantucket fever. For 25% of cases in adults and half of cases in children, the disease is asymptomatic or mild with flu-like symptoms. Symptoms are characterized by irregular fevers, chills, headaches, general lethargy, pain and malaise.

PZ 05 Balantidium Coli, Cysts

Common in the Philippines, but it can be found anywhere in the world, especially among those that are in close contact with pigs - main source of infection usually through water contaminated with their faeces; causes the disease Balantidiasis (diarrhoea, constipation); perforation of the colon may also occur in acute infections which can lead to life-threatening situations;

PZ 06 Balantidium Coli, Trophozoites

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PZ 07 Chilomastix Mesnili, Cysts

Found more frequently in warm climates; medically considered to be non-pathogenic.

PZ 08 Chilomastix Mesnili, Trophozoites

Found more frequently in warm climates; medically considered to be non-pathogenic.

PZ 09 Cryptosporidium Parvum

Causes cryptosporidiosis (primary symptoms are acute, watery, and non-bloody diarrhoea); other symptoms may include anorexia, nausea/vomiting and abdominal pain; other sites include the lung, liver and gall bladder where it causes respiratory cryptosporidiosis, hepatitis and cholecystitis.

PZ 10 Dientamoeba Fragilis, Trophozoites

Causes gastrointestinal upset in some people, but not in others; an important cause of travellers' diarrhoea, chronic diarrhoea, fatigue and failure to thrive in children. No cyst stage.

PZ 11 Endolimax Nana, Cysts

Originally thought to be non-pathogenic, but studies now suggest it can cause intermittent or chronic diarrhoea.

PZ 12 Endolimax Nana, Trophozoites

Originally thought to be non-pathogenic, but studies now suggest it can cause intermittent or chronic diarrhoea.

PZ 13 Entamoeba Coli, Cysts

Commonly found in the lower intestine; can cause liver abscesses, fever, abdominal pain, food poisoning.

PZ 14 Entamoeba Coli, Trophozoites

Commonly found in the lower intestine; can cause liver abscesses, fever, abdominal pain, food poisoning.

PZ 15 Entamoeba Gingivalis

Found near the base of the teeth, and in periodontal pockets in 95% of people with gum disease; rarely found in people with healthy gums; transmission is direct from one person to another by kissing, or by sharing eating utensils. (No known cyst stage).

PZ 16 Entamoeba Hartmanni, Cysts and Trophozoites

Commonly found in the intestinal tract but considered non-pathogenic.

PZ 17 Entamoeba Histolytica, Cysts

Infection can be asymptomatic; symptoms include amoebic dysentery, bloody diarrhoea, weight loss, fatigue, abdominal pain, amoeboma and amoebic liver abscess. Most common in countries with poor sanitation.

PZ 18 Entamoeba Histolytica, Trophozoites

Infection can be asymptomatic; symptoms include amoebic dysentery, bloody diarrhoea, weight loss, fatigue, abdominal pain, amoeboma and amoebic liver abscess. Most common in countries with poor sanitation.

PZ 19 Enterocytozoon Bieneusi

Found in a wide variety of hosts including pigs, humans, and other mammals; an important and rapidly emerging opportunistic disease, occurring mainly, but not exclusively, in severely immunocompromised patients with AIDS, resulting in diarrhoea and acalculous cholecystitis (the main opening to the gallbladder gets blocked).

PZ 20 Giardia Lamblia, Cysts

The most common pathogenic parasitic infection in humans worldwide; one of the most common parasites infecting cats, dogs and birds. Infection can occur through contaminated food, or by the faecal-oral route through poor hygiene practices; symptoms include weakness in the body, loss of appetite, diarrhoea, loose or watery stools, stomach cramps, upset stomach, projectile vomiting, bloating, excessive gas, and burping but may be asymptomatic.

PZ 21 Giardia Lamblia, Trophozoites

The most common pathogenic parasitic infection in humans worldwide; one of the most common parasites infecting cats, dogs and birds. Infection can occur through contaminated food, or by the faecal-oral route through poor hygiene practices; symptoms include weakness in the body, loss of appetite, diarrhoea, loose or watery stools, stomach cramps, upset stomach, projectile vomiting, bloating, excessive gas, and burping but may be asymptomatic.

PZ 22 Iodamoeba Butschlii, Cysts

Found worldwide; often present in large intestine; medically believed to be nonpathogenic.

PZ 23 Iodamoeba Butschlii, Trophozoites

Found worldwide; often present in large intestine; medically believed to be nonpathogenic.

PZ 24 Leishmania Amazonensis, Promastigotes

Found in the Americas; causes Leishmaniasis/ Leishmaniosis (ulcers of the skin, mouth, and nose).

PZ 25 Leishmania Donovanii

Prevalent throughout tropical and temperate regions including Africa (mostly in Sudan), China, India, Nepal, southern Europe, Russia and South America; causes Leishmaniasis/ Leishmaniosis (ulcers of the skin, mouth, and nose).

PZ 26 Leishmania Major

Found only in Northern Africa, the Middle East, Northwestern China, and Northwestern India; causes Leishmaniasis/ Leishmaniosis (ulcers of the skin, mouth, and nose).

PZ 27 Leishmania Tropica Major

Found in Ethiopia, India, European Mediterranean region, Middle East, Kenya and North Africa; causes Leishmaniasis/ Leishmaniosis (ulcers of the skin, mouth, and nose).

PZ 28 Plasmodium Falciparum

Much more prevalent in sub-Saharan Africa than in many other regions of the world; causes the most dangerous form of malaria.

PZ 29 Plasmodium Malariae

Widespread throughout sub-Saharan Africa, much of southeast Asia, Indonesia, on many of the islands of the western Pacific and in areas of the Amazon Basin of South America; causes the least dangerous form of malaria - benign/recurring malaria.

PZ 30 Plasmodium Ovale

Relatively rare compared with other Plasmodium; limited to West Africa, the Philippines, eastern Indonesia, Papua New Guinea, Bangladesh, India, Cambodia, Thailand and Vietnam; causes benign/recurring malaria.

PZ 31 Plasmodium Vivax

Found mainly in Asia and South America; the most frequent and widely distributed cause of benign /recurring malaria.

PZ 32 Toxoplasma Gondii, Cysts

One of the most common human parasites; often from eating undercooked pork; also soil, water and food contaminated with faeces from infected animals (particularly cats); may be sexually transmitted in humans, although not yet proven; up to a third of the global population has been exposed to and may be chronically infected with it, although infection rates differ significantly from country to country; causes toxoplasmosis; acute toxoplasmosis is often asymptomatic in healthy adults, but symptoms may occur and are often influenza-like (swollen lymph nodes, or muscle aches and pains that last for a month or more); may also cause subtle behavioural or personality changes; infection with the parasite associated with attention deficit hyperactivity disorder, obsessive compulsive disorder, schizophrenia and also suicides. This online blog article has a lot of interesting information about Toxoplasma gondii.

PZ 33 Toxoplasma Gondii, Trophozoites

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PZ 34 Trichomonas Vaginalis, Trophozoite

Vaginitis in woman; occasionally in men, affecting urethra, but usually asymptomatic. Usually sexually transmitted.

PZ 35 Trypanosoma Cruzi

Chagas disease in South America and sleeping sickness in Africa.

PZ 36 Trypanosoma Brucei Gambiense

Causes Central African sleeping sickness.

PZ 37 Trypanosoma Brucei Rhodesiense

Causes South African sleeping sickness.

Cytokine & Immune Test Kit

40 vials, \$179

Developed in collaboration with Dr Wally Schmitt, contains cytokines, including fibroblast growth factors, immunoglobulins, interleukins, etc.

NOTE: Do not buy the Interleukin Kit or the Immunoglobulin Kit if buying this kit, as the vials from these kits are included in this one.

CY 01 Amphiregulin/AREG

A member of the epidermal growth factor family. Interacts with the EGF/TGF- α receptor to promote the growth of normal epithelial cells and inhibits the growth of certain aggressive carcinoma cell lines.

CY 02 Epidermal Growth Factor

Stimulates cell growth, proliferation, and differentiation. Can be found in platelets, macrophages, urine, saliva, human milk, and plasma.

CY 03 Fibroblast Growth Factor 1 /FGF-1

Growth factors involved in angiogenesis, wound healing, and embryonic development. Promotes endothelial cell proliferation and the physical organization of endothelial cells into tube-like structures. Stimulate angiogenesis and the proliferation of fibroblasts that give rise to granulation tissue, which fills up a wound space/cavity early in the wound-healing process. Seems to be involved in the regulation of synaptic plasticity and processes attributed to learning and memory, at least in the hippocampus.

CY 04 Fibroblast Growth Factor 2 / FGF-2

Growth factors involved in angiogenesis, wound healing, and embryonic development. Promotes endothelial cell proliferation and the physical organization of endothelial cells into tube-like structures. Stimulate angiogenesis and the proliferation of fibroblasts that give rise to granulation tissue, which fills up a wound space/cavity early in the wound-healing process. Adult neurogenesis within the hippocampus depends greatly on FGF-2. Seems to be involved in the regulation of synaptic plasticity and processes attributed to learning and memory, at least in the hippocampus.

CY 05 Fibroblast Growth Factor 10 / FGF-10

Growth factors involved in angiogenesis, wound healing, and embryonic development.

CY 06 Fibroblast Growth Factor 23 / FGF-23

Main function seems to be regulation of phosphate concentration in plasma. Secreted by osteoblasts and osteoclasts in response to elevated calcitriol. Acts on kidneys, where it decreases the expression of NPT2, a sodium-phosphate cotransporter in the proximal tubule, so decreases the reabsorption and increases excretion of phosphate.

CY 07 Granulocyte Colony-Stimulating Factor / G-CSF

A glycoprotein, growth factor and cytokine produced by a number of different tissues to stimulate the bone marrow to produce granulocytes and stem cells, and then stimulates the bone marrow to release them into the blood. Also stimulates the survival, proliferation, differentiation, and function of neutrophil precursors and mature neutrophils.

CY 08 Granulocyte Macrophage Colony-Stimulating Factor/ GM-CSF

A protein secreted by macrophages, T cells, mast cells, NK cells, endothelial cells and fibroblasts. Functions as a white blood cell growth factor. Stimulates stem cells to produce granulocytes (neutrophils, eosinophils, and basophils) and monocytes.

CY 09 IgA

Found in mucosal areas, such as the gut, respiratory tract and urogenital tract, and prevents colonization by pathogens. Also found in saliva, tears, and breast milk.

CY 10 IgD

Functions mainly as an antigen receptor on B cells that have not been exposed to antigens. Has been shown to activate basophils and mast cells to produce antimicrobial factors.

CY 11 IgE

Binds to allergens and triggers histamine release from mast cells and basophils, and is involved in allergy. Also protects against parasitic worms.

CY 12 IgG

Provides the majority of antibody-based immunity against invading pathogens. The only antibody capable of crossing the placenta to give passive immunity to the fetus.

CY 13 IgM

Eliminates pathogens in the early stages of B cell mediated (humoral) immunity before there is sufficient IgG.

CY 14 Interferon-Alpha

Produced by leukocytes. They are mainly involved in innate immune response against viral infection.

CY 15 Interferon-Gamma

Critical for innate and adaptive immunity against viral and intracellular bacterial infections and for tumor control. An important activator of macrophages. Aberrant IFN- γ expression is associated with a number of auto-inflammatory and auto-immune diseases.

CY 16 Interleukin-1

Stimulates the growth and action of immune system cells that fight disease, by participating in the regulation of immune responses, inflammatory reactions, and hematopoiesis (development of mature blood cells). Also helps leukocytes pass through blood vessel walls to sites of infection and causes fever by affecting areas of the brain that control body temperature.

CY 17 Interleukin-2

Induces the proliferation of responsive T-cells, and acts on some B-cells, via receptor-specific binding, as a growth factor and antibody production stimulant. Linked to pruritus (itching).

CY 18 Interleukin-3

Regulates blood-cell production by controlling the production, differentiation and function of granulocytes and macrophages, so enhances the immune system's ability to fight tumor cells.

CY 19 Interleukin-4

Enhances the immune system's ability to fight tumor cells; has an important function in B-cell responses. A key regulator in humoral and adaptive immunity.

CY 20 Interleukin-5

Regulates eosinophil growth and activation, and thus plays an important role in diseases associated with increased levels of eosinophils, including asthma and allergic rhinitis.

CY 21 Interleukin-6

A biomarker for inflammation and chronic disease. Plays an essential role in the final differentiation of B-cells into IG-secreting cells, as well as inducing myeloma/plasmacytoma growth, nerve cell differentiation, and, in hepatocytes, acute-phase reactants. Involved in diabetes, atherosclerosis, depression Alzheimer's disease, systemic lupus erythematosus, prostate cancer and rheumatoid arthritis.

CY 22 Interleukin-7

Enhances the immune system's ability to fight tumor cells. IL-7 is made by cells in the bone marrow, and can stimulate T cells and B cells to grow. Promotes acute lymphoblastic leukemia, T cell lymphoma. Elevated levels of IL-7 have also been detected in the plasma of HIV-infected patients.

CY 23 Interleukin-8

Induces chemotaxis in target cells, primarily neutrophils but also other granulocytes, causing them to migrate toward the site of infection. Also induces phagocytosis once they have arrived. Known to be a potent promoter of angiogenesis (growth of new blood vessels from existing ones, and necessary for tumours to grow). Often associated with inflammation (e.g. in gingivitis and psoriasis). If a pregnant mother has high levels, there is an increased risk of schizophrenia in her offspring. High levels have also been shown to reduce the likelihood of positive responses to antipsychotic medication in schizophrenia.

CY 24 Interleukin-9

Serves as a growth factor for early lymphoid cells of both B- and T-cell lineages. supports IL-2 independent and IL-4 independent growth of helper T-cells.

CY 25 Interleukin-10

Inhibits the synthesis of a number of cytokines, including IFN-gamma, IL-2, IL-3, TNF, and GM-CSF produced by activated macrophages and by helper T cells. Mice studies suggest it is an essential immuno-regulator in the intestinal tract; may be relevant in Crohn's disease.

CY 26 Interleukin-11

Stimulates megakaryocytopoiesis, resulting in increased production of platelets, as well as activating osteoclasts, inhibiting epithelial cell proliferation and apoptosis, and inhibiting macrophage mediator production. May reduce toxicity to the gastrointestinal system resulting from cancer therapy.

CY 27 Interleukin-12

Enhances the ability of the immune system to kill tumor cells and may interfere with blood flow to the tumor. In-

involved in the stimulation and maintenance of Th1 cellular immune responses, including the normal host defence against various intracellular pathogens, such as Leishmania, Toxoplasma, measles virus, and HIV. Also has an important role in pathological Th1 responses, such as in inflammatory bowel disease and multiple sclerosis. Administration of IL-12 to people suffering from autoimmune diseases was shown to worsen the autoimmune phenomena. This is believed to be due to its key role in induction of Th1 immune responses.

CY 28 Interleukin-17A

A cytokine that acts as a potent mediator in delayed-type reactions by increasing chemokine production in various tissues to recruit monocytes and neutrophils to the site of inflammation, similar to Interferon gamma. Has been shown to have a pro-inflammatory role in asthma.

CY 29 Interleukin-23

Potently enhances the expansion of T helper type 17 cells, so involved in many of the inflammatory autoimmune responses.

CY 30 Lipopolysaccharide / LPS

Found in the outer membrane of Gram-negative bacteria, act as endotoxins and elicit strong immune responses. Produced by gut bacteria, so source of many inflammatory reactions including autoimmunity.

CY 31 Neuregulin 1 / NRG1

Induce the growth and differentiation of epithelial, neuronal, glial, and other types of cells. Essential for the normal development of the nervous system and the heart. Thought to play a role in schizophrenia. Part of the EGF family of proteins.

CY 32 Neuregulin 2 / NRG2

Induces the growth and differentiation of epithelial, neuronal, glial, and other types of cells. Part of the EGF family of proteins.

CY 33 Neuregulin 3 / NRG3

Linked to a susceptibility to schizophrenia and Hirschsprung's disease. Part of the EGF family of proteins.

CY 34 Neuregulin 4 / NRG4

Activates type-1 growth factor receptors to initiate cell-to-cell signaling through tyrosine phosphorylation. Loss of expression of NRG4 is frequently seen in advanced bladder cancer while increased NRG4 expression correlates to better survival.

CY 35 Platelet-Derived Growth Factor / PDGF-R

Plays a significant role in blood vessel formation (angiogenesis), the growth of blood vessels from already-existing blood vessel tissue. Uncontrolled angiogenesis is a characteristic of cancer.

CY 36 Transforming Growth Factor-Alpha / TGF Alpha

Seems to play a role in mediation of cell-cell adhesion and in juxtacrine stimulation of adjacent cells. Expression of TGF-alpha is widespread in tumors and transformed cells. TGF-alpha is also expressed in normal tissues during embryogenesis and in adult tissues, including pituitary, brain, keratinocytes and macrophages.

CY 37 Transforming Growth Factor-Beta / TGF-Beta

A protein that controls proliferation, cellular differentiation, and other functions in most cells. A type of cytokine which plays a role in immunity, cancer, bronchial asthma, heart disease, diabetes, Marfan syndrome, Loeys–Dietz syndrome, Parkinson's disease and AIDS. May also be involved in allergic reactions.

CY 38 Tumor Necrosis Factor-Alpha

Produced by macrophages, which engulf and destroy bacteria, viruses, and other foreign substances; role in regulating inflammatory and immune responses throughout the body and particularly in relation to some parasites. Implicated in arthritis, rheumatoid arthritis, AIDS, multiple sclerosis, cancer; may be involved in septicemia, and the weight loss associated with parasitic infection or cancer.

CY 39 Combined IL2 plus TGF-Beta

Screening for T Regulatory cell issues; helps direct T Regulatory synthesis.

CY 40 Combined IL23 plus TGF-Beta

Screening for Autoimmune issues.

Parasite 3 Test Kit

28 vials, \$105

More parasites, including different life stages of parasites in other kits.

PA3 67 Ancylostoma Duodenale / Old World Hookworm, Eggs

Lives in the small intestine of hosts such as humans, cats and dogs; abundant throughout the world, including in the following areas: southern Europe, north Africa, India, China, southeast Asia, some areas in the United States, the Caribbean, and South America.

PA3 68 Brugia Malayi / Brugian Filariasis, Microfilaria

A nematode (roundworm), one of the three causative agents of lymphatic filariasis (elephantiasis) in humans; restricted to South and South East Asia.

PA3 69 Capillaria Hepatica / Hepaticola Hepatica / Calodium Hepaticum, Eggs

Causes hepatic capillariasis; found in rats, a wide variety of other wild and domestic mammals, and occasionally humans; has been found in temperate and tropical zones on every continent.

PA3 70 Dicrocoelium Dendriticum / Sheep Liver Fluke

Usually infects the bile duct; in heavier infections, bile ducts and the biliary epithelium may become enlarged in addition to the generation of fibrous tissue surrounding the ducts, and as a result, causing an enlarged liver (hepatomegaly) or inflammation of the liver (cirrhosis); worldwide distribution particularly in grazing land near forest areas (good for molluscs) and dry pastures with little other biodiversity (good for the ants) both increased parasite prevalence (molluscs and ants are hosts). Humans can become hosts after accidentally ingesting infected ants.

PA3 71 Diphylobothrium Latum, Immature Proglottid

Tapeworm causing Diphylobothriasis in humans through consumption of raw or undercooked fish; native to Scandinavia, western Russia, and the Baltics, though it is now also present in North America, especially the Pacific Northwest.

PA3 72 Diphylobothrium Latum, Mature Proglottid

Tapeworm causing Diphylobothriasis in humans through consumption of raw or undercooked fish; native to Scandinavia, western Russia, and the Baltics, though it is now also present in North America, especially the Pacific Northwest.

PA3 73 Dipylidium Caninum, Eggs

Infects organisms afflicted with fleas and canine chewing lice, including dogs, cats, and sometimes human pet-owners, especially children; most infections are asymptomatic, but sometimes mild diarrhoea, abdominal colic, anorexia, restlessness, constipation, rectal itching and pain due to emerging proglottids through the anal cavity.

PA3 74 Dipylidium Caninum, Immature Proglottid

Infects organisms afflicted with fleas and canine chewing lice, including dogs, cats, and sometimes human pet-owners, especially children; most infections are asymptomatic, but sometimes mild diarrhoea, abdominal colic, anorexia, restlessness, constipation, rectal itching and pain due to emerging proglottids through the anal cavity.

PA3 75 Dipylidium Caninum, Mature Proglottid

Infects organisms afflicted with fleas and canine chewing lice, including dogs, cats, and sometimes human pet-owners, especially children; most infections are asymptomatic, but sometimes mild diarrhoea, abdominal colic, anorexia, restlessness, constipation, rectal itching and pain due to emerging proglottids through the anus.

PA3 76 Dirofilaria Immitis, Microfilariae

A parasitic roundworm that is spread from host to host through the bites of mosquitoes; definitive host is the dog, but it can also infect cats, wolves, coyotes, foxes and other animals and under very rare circumstances, humans. (Microfilariae are live young that circulate in the bloodstream for as long as two years, waiting for the next stage in their life cycles in the gut of a bloodsucking mosquito.)

PA3 77 Echinococcus Granulosus / Hydatid Worm / Hyper Tapeworm / Dog Tapeworm, Cyst

First document in Alaska but is distributed world-wide; especially prevalent in parts of Eurasia, north and east Africa, Australia, and South America. Most prevalent in sheep farming communities.

PA3 78 Fasciola Hepatica / Common Liver Fluke, Eggs

Infects the livers of various mammals, including humans; human infections occur in parts of Europe, northern Iran, northern Africa, Cuba, South America, especially the Altiplano regions of the Peruvian and Bolivian Andes; also an emerging problem in Vietnam and Cambodia.

PA3 79 Hymenolepis Nana / Vampirolepis Nana / Dwarf Tapeworm

One of the most common intestinal worms infecting humans, especially children; common in temperate zones.

Most people who are infected do not have any symptoms. Those who have symptoms may experience nausea, weakness, loss of appetite, diarrhea, and abdominal pain. Young children, especially those with a heavy infection, may develop a headache, itchy bottom, or have difficulty sleeping. Sometimes infection is misdiagnosed as a pinworm infection.

PA3 80 Loa Loa / Eye Worm

Found in Africa and India; travels from the entry site through subcutaneous tissues, causing inflammation in the skin wherever they travel.

PA3 81 Macracanthorhynchus Hirudinaceus, Eggs

Lives in the intestines of pigs, and very occasionally in humans or dogs. It causes enteritis, gastritis or peritonitis.

PA3 82 Macracanthorhynchus Hirudinaceus, Eggs

Found in Africa and tropical Americas, spread by biting midges or blackflies; usually asymptomatic.

PA3 83 Schistosoma Japonicum, Cercaria

Found in China, but now eradicated in Japan; often asymptomatic, but may experience fever, cough, abdominal pain, diarrhoea, hepatosplenomegaly, and eosinophilia. Occasionally central nervous system lesions occur: cerebral granulomatous disease may be caused by ectopic *S. japonicum* eggs in the brain.

PA3 84 Schistosoma Japonicum, Female

Found in China, but now eradicated in Japan; often asymptomatic, but may experience fever, cough, abdominal pain, diarrhoea, hepatosplenomegaly, and eosinophilia.

PA3 85 Schistosoma Japonicum, Miracidium

Found in China, but now eradicated in Japan; often asymptomatic, but may experience fever, cough, abdominal pain, diarrhoea, hepatosplenomegaly, and eosinophilia.

PA3 86 Schistosoma Japonicum, Sporocyst

Found in China, but now eradicated in Japan; often asymptomatic, but may experience fever, cough, abdominal pain, diarrhoea, hepatosplenomegaly, and eosinophilia.

PA3 87 Schistosoma Mansoni, Male

Causes intestinal schistosomiasis; present in many countries, predominantly in South America and the Caribbean, Africa including Madagascar, and the Middle East.

PA3 88 Spirometra Mansoni, Egg

Occurs worldwide in distribution, although most human cases of sparganosis are recorded from southeast Asian countries. Sparganosis is endemic in animals throughout North America, although human cases from this area are rare.

PA3 89 Spirometra Mansoni, Immature Proglottid

Occurs worldwide in distribution, although most human cases of sparganosis are recorded from southeast Asian countries. Sparganosis is endemic in animals throughout North America, although human cases from this area are rare.

PA3 90 Spirometra Mansoni, Mature Proglottid

Occurs worldwide in distribution, although most human cases of sparganosis are recorded from southeast Asian countries. Sparganosis is endemic in animals throughout North America, although human cases from this area are rare.

PA3 91 Taenia Saginata / Beef Tapeworm, Immature Proglottid

Cattle are the intermediate hosts, where larval development occurs, while humans are definitive hosts harbouring the adult worms; found globally and most prevalently where cattle are raised and beef is consumed. It is relatively common in Africa, some parts of Eastern Europe, Southeast Asia, South Asia, and Latin America.

PA3 92 Taenia Solium / Pork Tapeworm, Eggs

Found throughout the world, and is most prevalent in countries where pork is eaten; usually asymptomatic, but in severe cases leads to intestinal irritation, anaemia, and indigestion.

PA3 93 Toxocara Canis / Dog Roundworm

Humans can be infected just by stroking an infected dog's fur and accidentally ingesting infective eggs that may be present on the dog's fur; results in hepatomegaly, myocarditis, respiratory failure and vision problems.

PA3 94 Tunga Penetrans / Chigoe Flea / Jigger

Native to Central and South America, but now also found sub-Saharan Africa; breeding females burrow into exposed skin on the feet and remain there for two weeks while developing eggs, during which time they swell dramatically, sometimes causing intense irritation; if the flea is left within the skin, dangerous complications can occur including secondary infections, loss of nails, and toe deformation.

SIBO Test Kit

(Small Intestinal Bacterial Overgrowth)

25 vials, \$85

(NOTE: All these vials (except for the mixed vial) are available in Bacteria 1 and Bacteria 2. They have been brought together into this kit for convenience for practitioners working in this field).

Small intestinal bacterial overgrowth (SIBO) refers to a condition in which abnormally large numbers of bacteria are present in the small intestine, and the types of bacteria found in the small intestine are more like the bacteria found in the colon. Also known as small bowel bacterial overgrowth syndrome (SBBOS).

Causes include diverticulitis (where the pockets allow the build-up of bacteria), scarring from abdominal surgery (interfering with the proper movement of food and bacteria through the small intestine), Crohn's disease, scleroderma and diabetes mellitus.

Symptoms include flatulence, diarrhoea, constipation and abdominal bloating and abdominal pain. May experience body aches and/or fatigue. If the condition is severe or long-lasting, it may interfere with the proper absorption of vitamins and minerals. Weight loss may also be a problem. Symptoms occur because the bacteria produce gas, compete with their human host for the food in the small intestine, may produce toxic by-products that irritate the small intestine.

SIBO 01 Bacteroides Fragilis

Involved in 90% of anaerobic peritoneal infections of the abdominal cavity.

SIBO 02 Clostridium Botulinum

Botulism, muscle paralysis, vomiting, tiredness, food poisoning.

SIBO 03 Clostridium Difficile

Diarrhoea, colitis, peritonitis. Often a problem after normal gut flora is eradicated by the use of antibiotics; infection often occurs in hospital and in nursing homes; some adults have low numbers of the bacteria without any symptoms; common in the intestine of babies and infants, but does not cause disease because its toxins do not damage their immature intestinal cells.

SIBO 04 Clostridium Perfringens

Pneumonia. Widely distributed in the environment and frequently occurs in the intestines of humans and many domestic and feral animals.

SIBO 05 Clostridium Septicum

Causes gangrene. Generally associated with gastro-intestinal or hematologic malignancies. An association exists with colon carcinoma.

SIBO 06 Clostridium Tetani

Muscle rigidity followed by spasmodic muscle contraction with pallor and sweating. Found in soil.

SIBO 07 Clostridium Welchii

Cellulitis.

SIBO 08 Enterococcus Faecalis / Streptococcus Faecalis

Can cause life-threatening infections in humans, especially in the hospital environment. Frequently found in root canal-treated teeth. Can cause endocarditis and bacteremia, urinary tract infections, meningitis, and other infections. Among the main constituents of some probiotic food supplements.

SIBO 09 Enterococcus Faecium

Can be commensal in the human intestine, but it may also be pathogenic, causing diseases such as neonatal meningitis.

SIBO 10 Escherichia Coli / E Coli

Causes meningitis in babies, diarrhoea, liver abscess, fever, abdominal pain, urinary tract infection. Commensal of human intestine; found in raw and undercooked meat, raw vegetables and unpasteurised milk.

SIBO 11 Group A Streptococcus / GAS

Often found in the throat and on the skin. Illnesses include strep throat and occasionally invasive GAS disease. People may be carriers and experience no health problems themselves.

SIBO 12 Group B Streptococcus / GBS

In new-borns most commonly causes sepsis (infection of the blood), pneumonia and sometimes meningitis. In adults causes bloodstream infections, pneumonia, skin and soft tissue infections, and bone and joint infections.

SIBO 13 Klebsiella Pneumoniae

Pneumonia and urinary tract infections; tends to affect people with underlying diseases, particularly in hospital.

SIBO 14 Staphylococcus Aureus

Respiratory symptoms, conjunctivitis, styes, difficulty in breathing, otitis media, pus in lungs, pneumonia, childhood pneumonia, breathlessness, chest pain, endocarditis, meningitis in elderly, brain abscess, cellulitis, food poisoning, liver abscess, fever, abdominal pain, urinary tract infection. Common skin commensal; some strains are now becoming antibiotic resistant.

SIBO 15 Staphylococcus Epidermitis

Breathlessness, chest pain, endocarditis, urinary tract infection.

SIBO 16 Staphylococcus Saprophyticus

Often implicated in urinary tract infections and cystitis.

SIBO 17 Streptococcus Agalactiae

Neonatal infection, septicaemia, meningitis, nosocomial infection. Commensal in intestine and female genital tract.

SIBO 18 Streptococcus Lactis

Found commonly as a contaminant in milk and dairy products; a common cause of souring and coagulation of milk; some strains produce nisin, a powerful antibiotic that inhibits growth of many other gram-positive organisms.

SIBO 19 Streptococcus Mitis

Part of the normal mammal flora; found in mouth, throat, and nasopharynx. Can cause endocarditis.

SIBO 20 Streptococcus Mutans

Dental caries.

SIBO 21 Streptococcus Pneumoniae

Conjunctivitis, difficulty in breathing, sinusitis, otitis media, pus in lungs, pneumonia, childhood pneumonia, meningitis, meningitis in elderly and children, brain abscess; associated with increased risk of fatal heart complications including heart failure and heart attacks. Commensal of human upper respiratory tract.

SIBO 22 Streptococcus Pyogenes

Sore throat, tonsillitis/ pharyngitis, difficulty in breathing, sinusitis, otitis media, pus in lungs, lung abscess, pneumonia, rheumatic fever, scarlet fever, impetigo, cellulitis, liver abscess, fever, abdominal pain, toxic shock, septicaemia.

SIBO 23 Streptococcus Salivarius

The principal commensal bacterium of the oral cavity and a normal inhabitant of the upper respiratory tract. The first bacterium that colonises dental plaque, creating favourable conditions for other bacteria.

SIBO 24 Streptococcus Viridians Breathlessness, chest pain, endocarditis.

SIBO 25 Mixed SIBO

One vial containing all of the above.

More information can be found here: <http://www.webmd.boots.com/digestive-disorders/small-intestinal-bacteria-sibo>

Snake Venom Test Kit

20 vials, \$67

Snake Venom from various parts of the world

Please Note: This kit includes only one venomous snake from Australia - we will not keep this kit in stock, but it can still be ordered. Please allow 2-3 weeks for delivery.

SV 01 Banded Krait / Striped Bungarus

Bungarus fasciatus

Indian Subcontinent and in Southeast Asia.

SV 02 Black Mamba

Dendroaspis polylepis

Endemic to sub-Saharan Africa.

SV 03 Blue-Banded Sea Snake / Annulated Sea Snake

Hydrophis cyanocinctus

Found in the Indian Ocean (From the Persian Gulf, Iran, Pakistan, India, Sri Lanka, Bangladesh, Myanmar, Thailand, Malaysia, Philippines: Visayan Sea, Panay, etc.) and the marine waters around Korea, Japan, Solomon Islands, South China Sea (including Hainan), East China Sea (including Taiwan), coastal regions of Shandong and Liaoning (China) coasts of Persian Gulf (Oman, United Arab Emirates), east through South Asia until New Guinea.

SV 04 Brazilian Rattlesnake

Crotalus durissus cascavella

Native of northeastern Brazil.

SV 05 Bushmaster Snake

Lachesis mutus

Found in South America (including the island of Trinidad in the Republic of Trinidad and Tobago).

SV 06 Coastal Taipan / Common Taipan

Oxyuranus scutellatus

Native to the coastal regions of northern and eastern Australia and the island of New Guinea.

SV 07 Cobra

Naja tripudians Widespread across South and South East Asia

SV 08 Common Lancehead

Bothrops atrox

Tropical lowlands of northern South America east of the Andes.

SV 09 Coral Snake

Elaps corallinus / *Micrurus corallinus*

Brazil, NE Argentina and Paraguay

SV 10 European Adder

Vipera berus

Extremely widespread and can be found throughout most of Western Europe and as far as East Asia.

SV 11 European Viper

Vipera aspis

Southwestern Europe.

SV 12 Horned Viper / Saharan Horned Viper

Cerastes cerastes Native to the deserts of Northern Africa and parts of the Middle East.

SV 13 Inland Taipan / Western Taipan

Oxyuranus microlepidotus

Endemic to semi-arid regions of central east Australia.

SV 14 Martinican Pit Viper

Bothrops lanceolatus
Found in Martinique.

SV 15 Pit Viper

Trimeresurus purpureomaculatus
Endemic to India and Southeast Asia.

SV 16 Puff Adder

Bitis arietans
Found in savannah and grasslands from Morocco and western Arabia throughout Africa except for the Sahara and rain forest regions.

SV 17 Southern Copperhead Snake

Agkistrodon contortrix / Crotalus contortrix
Found in Southern United States.

SV 18 Timber Rattlesnake / Canebrake Rattlesnake / Banded Rattlesnake

Crotalus horridus
Found in Eastern United States.

SV 19 Water Moccasin Snake

Agkistrodon piscivorus / Toxicophis pugnax
Found in the southeastern United States.

SV 20 Western Green Mamba / West African Green Mamba / Hallowell's Green Mamba

Dendroaspis viridis
Native to West Africa; can be found in Benin, Cote d'Ivoire (Ivory Coast), Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Senegal, Sierra Leone, and Togo

Japan Pollens Test Kit

3 vials, \$27

Pollen vials specific to Japan.

Please Note: We will not keep this kit in stock, but it can still be ordered. Please allow 2-3 weeks for delivery.

Japanese Cedar Pollen / Sugi Pollen

Japanese Cypress Pollen / Hiroki Pollen

Japanese Mixed Pollen

Japanese Red Pine (Akamatsu), Tall Chrysanthemum (Akino Kirinso), Chrysanthemum (Kiru), Mulberry (Kanamugura), Orchard Grass (Kamogaya), Japanese Black Pine (Kuromatsu), Japanese Cedar (Sugi), Japanese Cypress (Hiroki), Reed Mace (Himegama), Hogweed (Butakusa), Spinach (Horenso)