

Precision Preventive Medicine for Mycoplasma Infectious Diseases (MID)

— Proposing paradigm transformation to remove real cause in the field of autoimmune disease, collagen disease, incredible immune disease, allergic disease

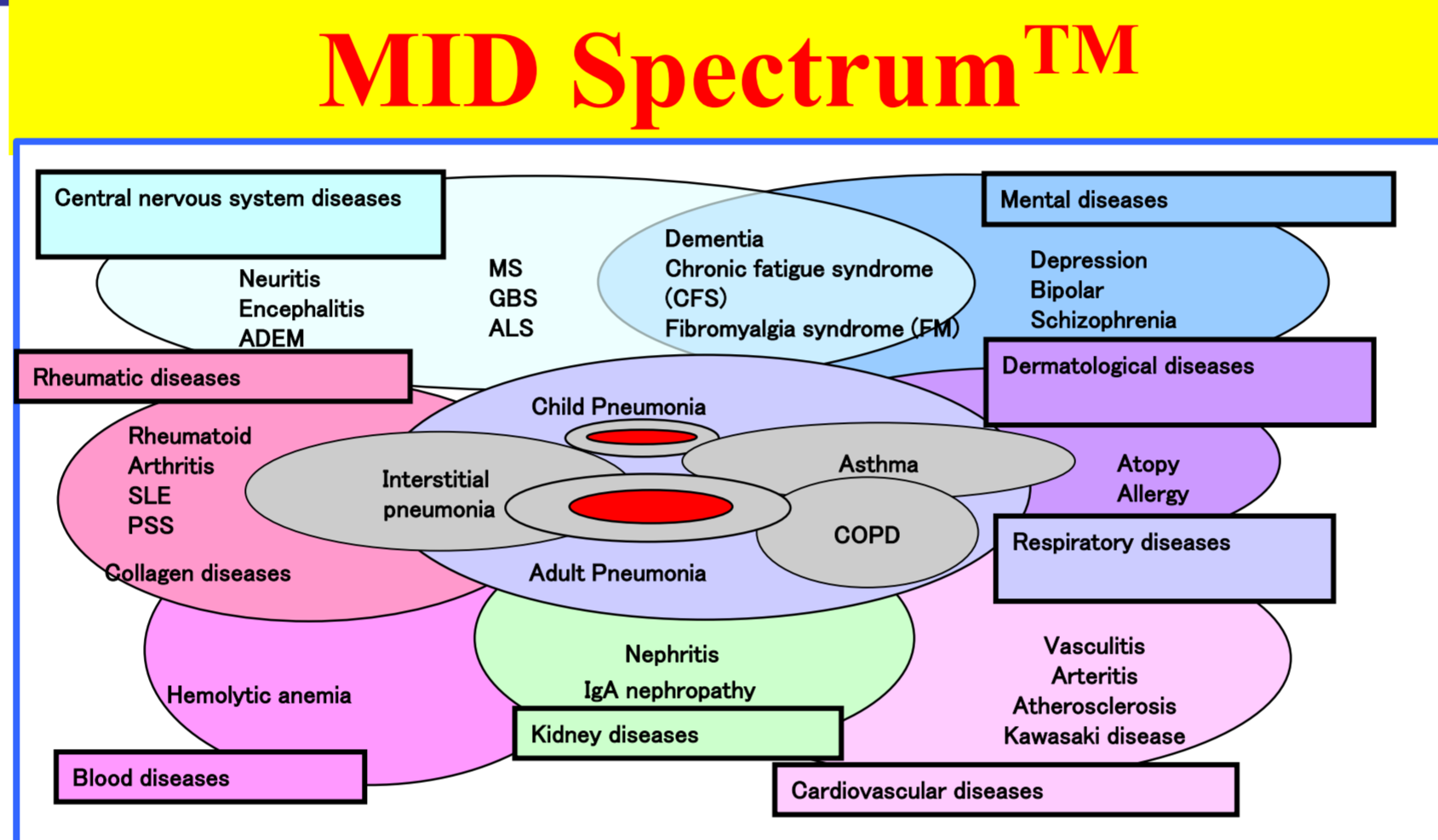
M Bio Technology is a leading company focused on the development of innovative diagnostics (MID Prism), therapeutics (MID Medicine) including vaccines (MID Vaccines) and therapeutic antibodies (MID Antibodies) based on the platform technology (MID Platform), for Mycoplasma Infectious Diseases (MID).

Proposal of novel concept for MID

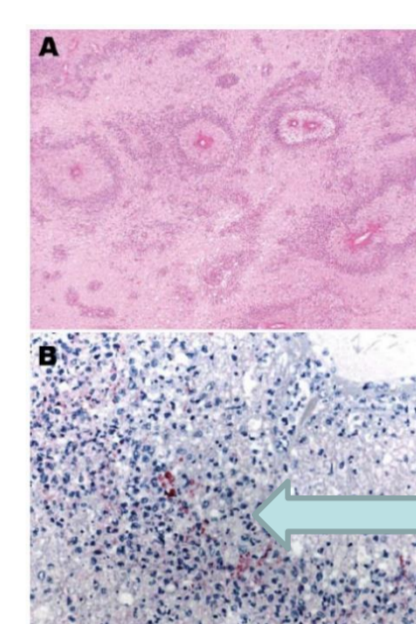
MID is systemic vasculitis/neuritis, which had been made it extremely difficult to diagnose and treat.

MID Spectrum™
 — MID Spectrum™ is the concept including pneumonia, asthma, COPD, fibrosis and other various autoimmune diseases (SJS:Stevens-Johnson syndrome), Kawasaki disease, SHP:IgA nephritis, RA:rheumatoid arthritis) and neurological diseases (CIDP:chronic inflammatory degenerative polyneuropathy), GBS, CFS/FM), also stroke. Common pathological mechanism of MID is inflammation/fibrosis around blood vessel and nerves throughout the entire body caused by mycoplasma.

A novel therapeutic strategy for mycoplasma infectious diseases
 Kazuhiro Matsuda,
 Personalized Medicine Universe 2015 4:32-39



Systemic Vasculitis/neuritis



Neuroinvasion by Mycoplasma pneumoniae in Acute Disseminated Encephalomyelitis
 Bernhard Stamm, Michael Moschopoulos, Hansjörg Hungerbuehler, Jeannette Guarnier, Gillian L. Genrich,† and Sherif R. Zakit

Invaded mycoplasma

ADEM

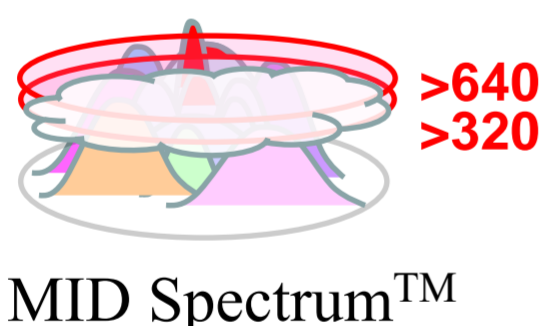
Figure A) Subcortical cerebral white matter with numerous perivascular foci of demyelination and necrosis (hematoxylin and eosin stain, original magnification ×40). B) Immunohistochemical evidence of Mycoplasma pneumoniae antigen inside macrophages present in the perivascular inflammatory infiltrate (immunohistochemical assay performed by using the monoclonal anti-M. pneumoniae antibody and naphthol fast red as counterstain, original magnification ×50).
 Emerging Infectious Diseases • www.cdc.gov/eid • Vol. 14, No. 4, April 2008

Presage (ME-BYO) medicine based on precision diagnostics (MID Prism™)

Stress, suppression, dementia Unknown fever, pain, skin eruption
 Symptoms of Autoimmune diseases, collagen diseases, allergy diseases, CFS/FMS

It is extremely difficult to see MID Spectrum™

Conventional Method



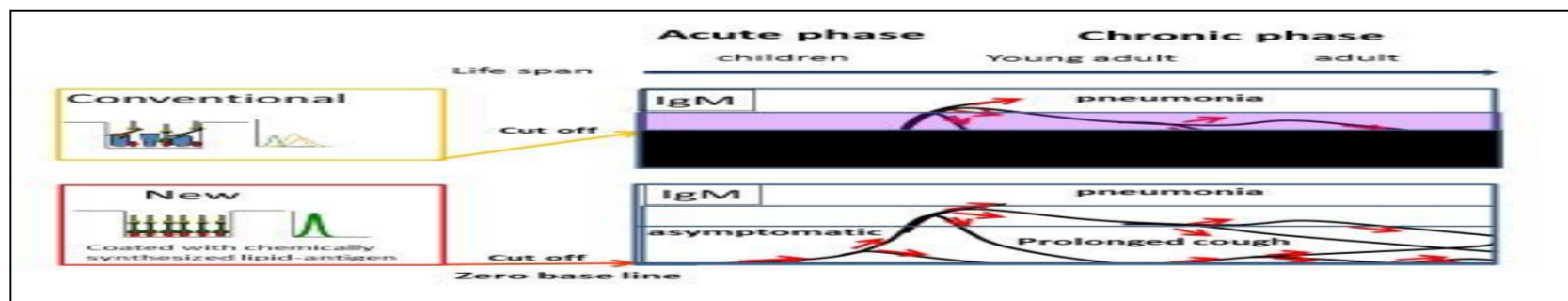
MID Spectrum™

MID Prism™

pioneering cutting-edge technology in the field of immunology



- Anti-Mycoplasma pneumonie-specific lipid-antigen IgM antibodies
- Anti-Mycoplasma pneumonie-specific lipid-antigen IgG antibodies
- Anti-Mycoplasma pneumonie-specific lipid-antigen IgA antibodies
- Anti-Mycoplasma fermentans-specific lipid-antigen IgM antibodies
- Anti-Mycoplasma fermentans-specific lipid-antigen IgG antibodies
- Anti-Mycoplasma fermentans-specific lipid-antigen IgA antibodies



MID Navigator™

— Would like to create Global Medical Network for MID Medicine

- new drugs - Vaccines, Therapeutic antibodies, Cellular immunotherapy, small molecular, Re-positioning)
- Precision Preventive Medicine (ME-BYO)
- MID infection surveillance for public health
- Healthy ageing
- ICT/AI
- full support system for MID Medicine

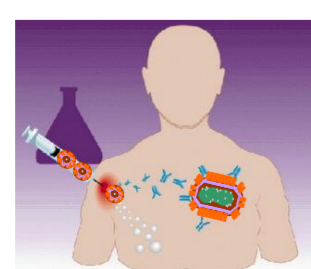
MID Vaccine™, MID Therapeutic antibody™

Vaccine induce specific antibodies and suppressed mycoplasma proliferation

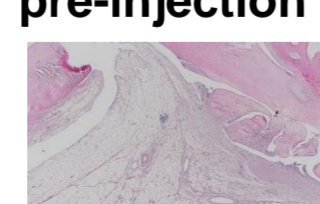
Structural analysis, complete chemical-synthesis of glycolipid-antigens of pathogenic microorganism

mycoplasma

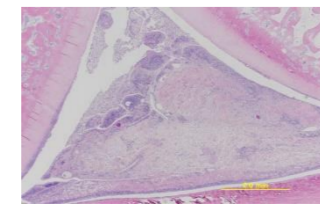
particles



Lipid-antigen pre-injection



Saline pre-injection

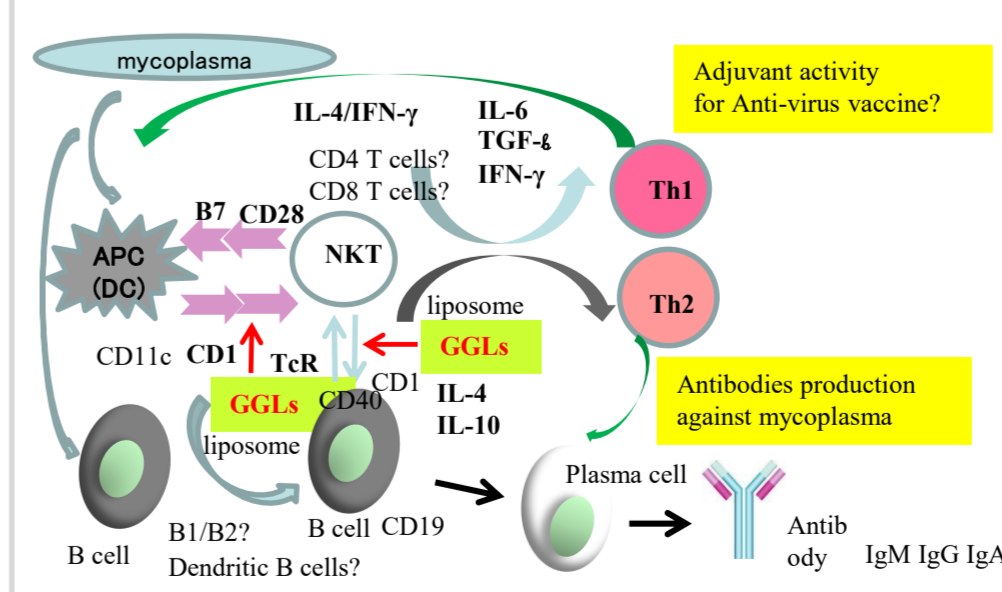


Pre-injection	challenge	Systemic lymphoid follicle formation	Systemic lymphoid follicle formation	Systemic lymphoid follicle formation	Systemic lymphoid follicle formation	Systemic lymphoid follicle formation	Systemic lymphoid follicle formation	Systemic lymphoid follicle formation	Systemic lymphoid follicle formation	Systemic lymphoid follicle formation
Saline	A4	+	+	+	+	+	+	+	+	5.7
liposome	A4	-	-	-	-	-	-	-	-	2.6

Formation of lymphoid follicle in the knee joint after M. fermentans inoculation was reduced with pre-injection

Collaboration: Yuko Sasaki, Yoshichika Arakawa (National Institute of Infectious Diseases)

APC-NKT-B cell pathway



United States Patent, and also worldwide: US 9,539,209 B2 Jan. 10, 2017 VACCINE FOR MYCOPLASMA INFECTION

Antigen

Scanning electron micrograph of Mycoplasma-infected cell
 immune electron micrograph (TEM) of Mycoplasma-infected cell

LPS/LTA : Anti-cancer effect, Adjuvant activities
 Antigens: Lipids Kazuhiro Matsuda, Encyclopedia of Life Sciences. John Wiley & Sons, Ltd
<http://www.eis.net>



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