

Biomarker Testing & Precision Medicine Beyond Cancer: *Autoimmunity*

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Autoinflammatory** Arthritis (**AiArthritis**)



INTERNATIONAL FOUNDATION FOR
AUTOIMMUNE & AUTOINFLAMMATORY ARTHRITIS
(AIARTHRTIS)

About The International Foundation for **Autoimmune & Autoinflammatory Arthritis (AiArthritis)**

100+ “AUTO” Diseases, but only just under two dozen also include inflammatory arthritis as a major clinical component. These are the diseases we represent.

- We improve lives with our patient inspired projects, resources, and opportunities for all people affected by **AiArthritis** diseases to improve their health and have a voice to impact change.
 - This is done by working with other stakeholders, as equals, so together we can solve problems and develop solutions.
- Leaders in precision medicine education, advocacy, and research.
- As a person living with these diseases myself, I understand the importance of precision medicine, biomarker testing, and access to it.

Examples: Rheumatoid Arthritis, Psoriatic Arthritis, Spondyloarthritis, Sjogren’s Syndrome, Lupus, Juvenile Arthritis, Still’s Disease, Sarcoidosis, Behcet’s Disease, Crohn’s Disease, Systemic Scleritis (Scleroderma)



Biomarker Testing Promise Beyond Cancer

Broad Benefits of Biomarkers/Precision Medicine

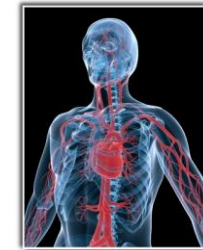
- In diseases that are heterogeneous, connecting the patient to the right treatment at the right time for their individual needs is vital to:
 - Increase remission potential
 - Improve QOL (ability to remain active part of society)
 - Lower healthcare costs (patient and system)

What is the “right time”?

- 3 to 6 months from onset for ideal outcomes
- Any missed window of opportunity can lead to lessened QOL, unnecessary disability = increased costs

The promise of biomarker testing can give hope for improved QOL and lower rates of disability.

Fraenkel L, et al. 2021 ACR Guideline for Treatment of Rheumatoid Arthritis. Arthritis Care Res (Hoboken) 2021 Jul;73(7):924-939. doi: 10.1002/acr.24596.
Boteanu AL, Briones-Figueroa A, Calvo-Sanz L, Suárez ÁA, García-Fernández A. Early start of biological treatment in juvenile idiopathic arthritis: does a therapeutic window exist in real life? Presented at: ACR Convergence 2020; November 5-9, 2020. Abstract 0710.



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AiArthritis Diagnostic Challenges

- Overlap (AUTO + Arthritis) – proper diagnosis matters
- Biomarkers expedite proper diagnosis

AiArthritis Treatment Challenges

- Exhaustive trial and error process
- Efficacy observation 3 to 6 months
- 40% efficacy rate (general population) – years to find the right treatment
- Cost (Average \$60k annually/biologics) – 1/4 of drug spend (no generics)
- Biomarkers can expedite treatment, potential remission, lower healthcare costs

The promise of biomarker panel testing for different markers can help pinpoint the diagnosis and the therapeutic target.



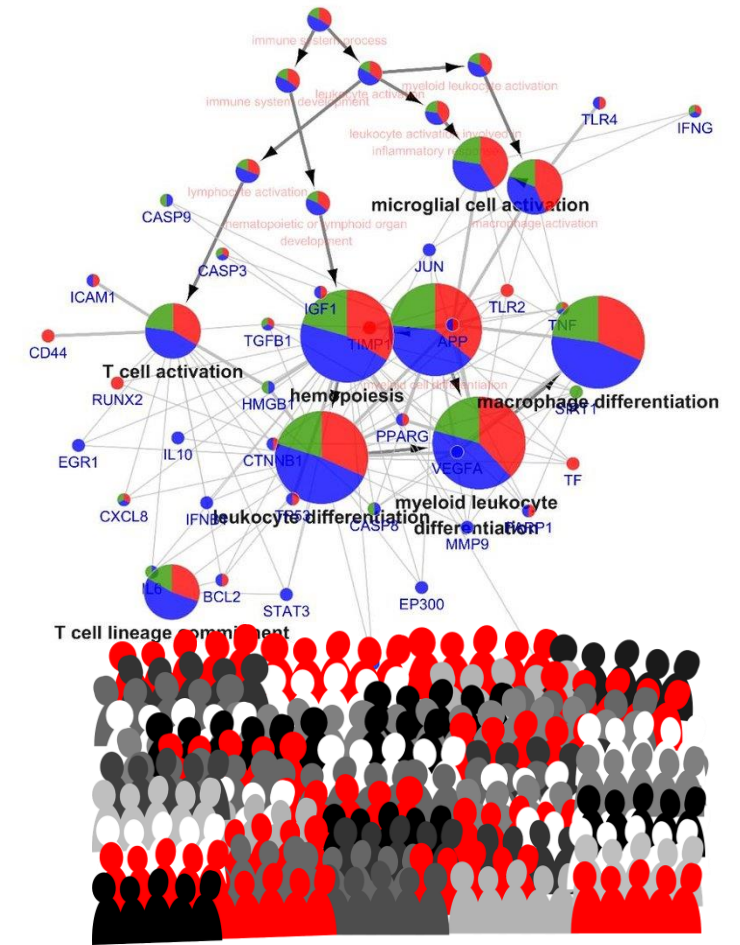
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Biomarker Research in **Ai**Arthritis Diseases

Biomarker research in 'AUTO' diseases It's EVERYWHERE!

- Biomarkers already identified: Rheumatoid Arthritis for diagnosis, worse disease prediction (aggressive treatment required)
- Early Diagnosis *and Prevention* ?!
- Who will progress to more serious disease?
- Who will respond better to certain therapies?
- Who will have a better chance to achieve remission?

Data is showing certain patient subgroups with specific biomarkers are responding better to specific drugs. The promise of access to biomarker testing is a significant step towards advancing this research.



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Promise of Biomarkers Testing in **Ai**Arthritis Diseases

- Research is underway – treatment strategies
 - Pharmacologic (Psoriatic Arthritis, Lupus, Juvenile Arthritis, etc.)
 - NON-Pharmacologic
- Current Applications

*Will testing be available when we need access to it? Can **Ai**Arthritis disease patients hold on to hope for better outcomes?*

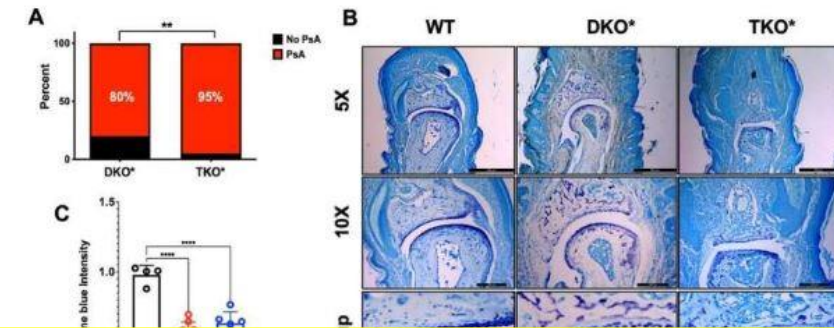
The promise of biomarker testing provides hope to 1 of 10 people who deserve the best chance to lead a high quality of life and the opportunity to achieve remission.

Liliana F Mellor et al, Keratinocyte-derived S100A9 modulates neutrophil infiltration and affects psoriasis-like skin and joint disease, Annals of the Rheumatic Diseases (2022). DOI: 10.1136/annrheumdis-2022-222229

🕒 JULY 6, 2022

Study lays foundation for new psoriasis treatment strategy

by Medical University of Vienna



Complementary medicine: The hunt for lupus biomarkers

July 12, 2018

Health & Medicine

Article Detail Download PDF

Systemic lupus erythematosus (SLE) is a chronic autoimmune and potentially fatal disease that can affect every organ in the body. SLE typically manifests in waves with flare-ups followed by periods of remission. However, existing biomarkers that evaluate disease activity are ineffective. By focusing on a vital part of the immune system known as the complement system, Dr Alfred Kim, Assistant Professor of Medicine and Pathology & Immunology and Co-Director of the Lupus Clinic at Washington University School of Medicine, and collaborators aim to develop and test biomarkers that could be crucial to improving patient care.



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Thank you for your time!

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