



University of
Zurich ^{UZH}



UniversitätsSpital
Zürich

Finding Key Mechanisms of the Destructive Process in Joints of Patients with Rheumatoid Arthritis

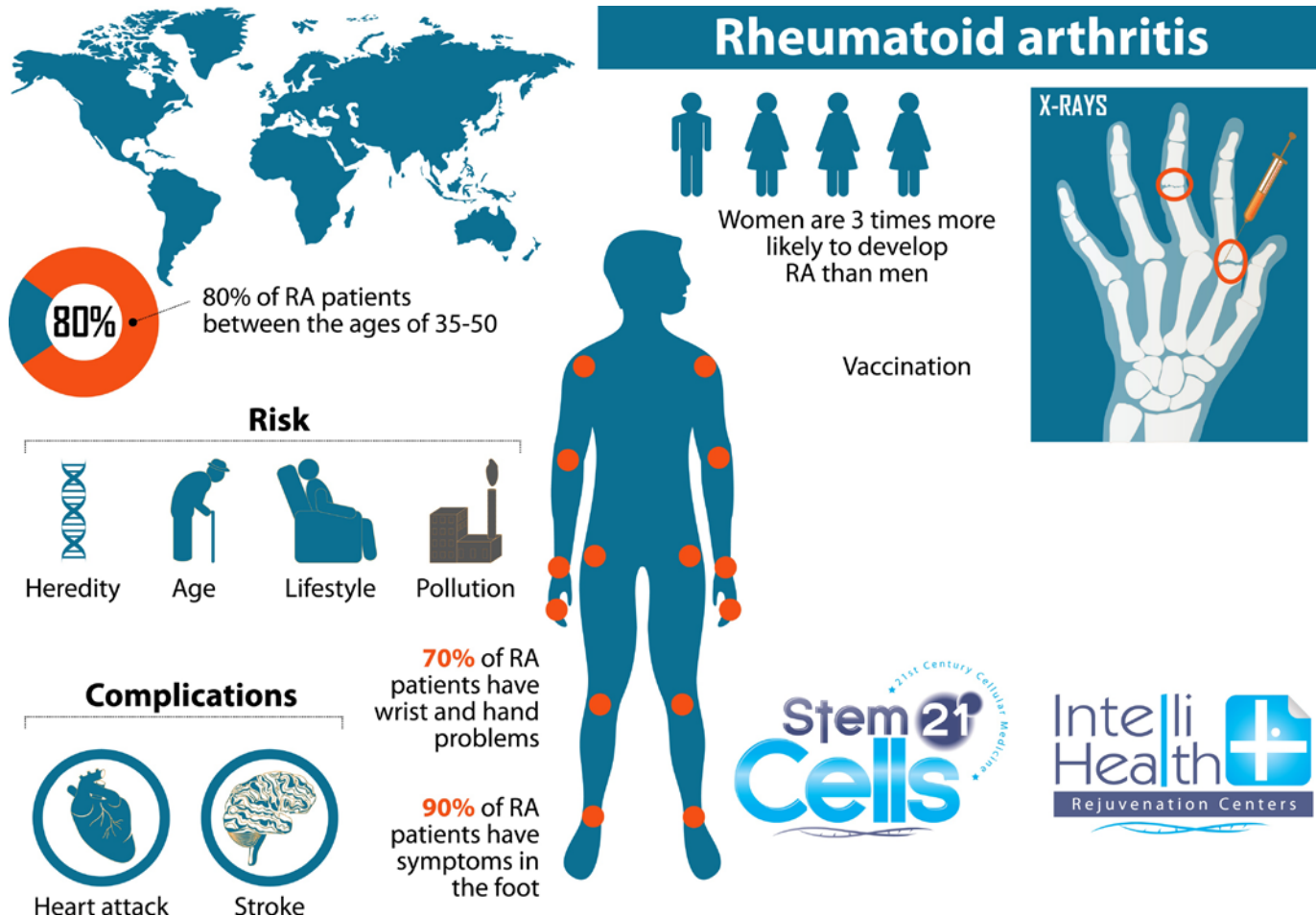
Anthony J. Ciarla

Department of Experimental Rheumatology



The EuroScholars Program
A European Academic Research Experience
www.euroscholars.eu

Rheumatology/Epigenetics



Rheumatoid Arthritis Morbidity Statistics⁵

RA Inflammation

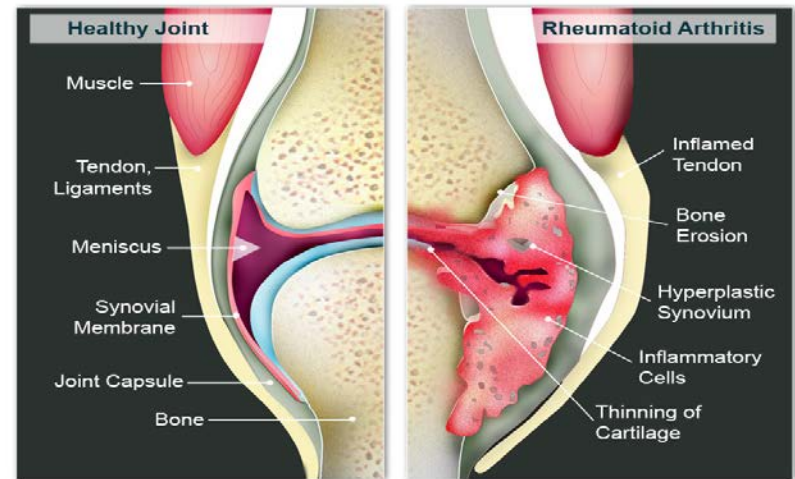
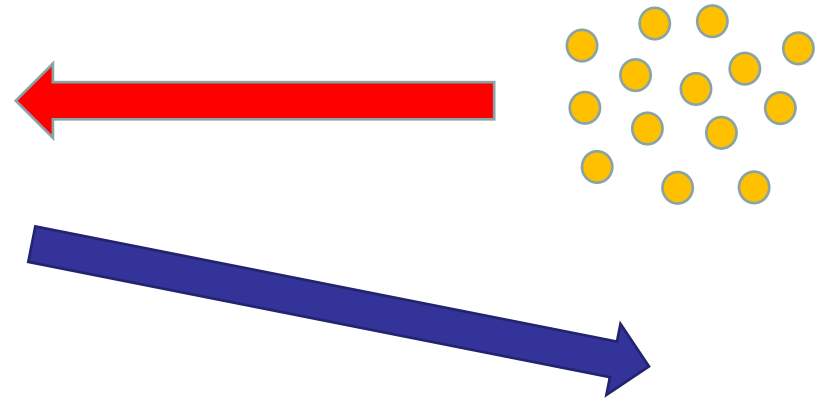
Pro-Inflammatory Cytokines



Macrophage

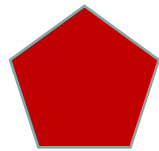
Research Questions

- Can activation of macrophages be down-regulated by addition of PODO?
- What is the optimal concentration to minimize toxicity in vivo and maximize anti-inflammatory effects?

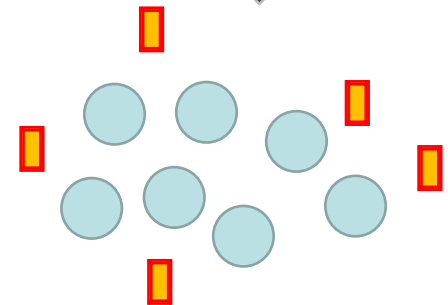
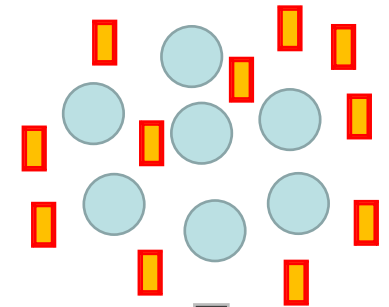


Juxtaposition of a Healthy and RA joint⁷


Inhibition of Inflammation



Podophyllotoxin



- Addition of multiple concentrations of podophyllotoxin
- Incubation
- Harvesting of RNA
- RNA Isolation and Purification
- Reverse Transcription
- Quantitative PCR
 - Illustration displays my preliminary findings

 Leukemic Monocyte

 TET-1

References

1. “Acute Myelomonocytic Leukemia.” *Acute Myelomonocytic Leukemia - an Overview | ScienceDirect Topics*, www.sciencedirect.com/topics/medicine-and-dentistry/acute-myelomonocytic-leukemia.
2. *Flag and Seal of New Hampshire*. Concord, New Hampshire.
3. Porvair Filtration Group. “Ten-Eleven Translocation (Tet) Enzymes.” *EpiGenie | Epigenetics, Stem Cell, and Synthetic Biology News*, 1 May 2014, epigenie.com/key-epigenetic-players/important-dna-methylation-factors/ten-eleven-translocation-tet-enzymes/.
4. “Rheumatoid Arthritis.” *Mayo Clinic*, Mayo Foundation for Medical Education and Research, 9 Aug. 2017, www.mayoclinic.org/diseases-conditions/rheumatoid-arthritis/symptoms-causes/syc-20353648.
5. “Rheumatoid Arthritis Treatment.” *Adult Stem Cell Therapy Abroad, Stem Cell Clinic in Thailand*, stemcells21.com/immune-disorders/rheumatoid-arthritis-stem-cell-therapy/sc21-osteo/.
6. “What Is Rheumatoid Arthritis (RA)? - Arthritis (Rheumatoid).” *Arthritis (Rheumatoid) - MedBroadcast.com*, www.medbroadcast.com/channel/arthritis-rheumatoid/about-rheumatoid-arthritis-ra/what-is-rheumatoid-arthritis-ra.
7. “Normal Joint Versus Joint Affected by Rheumatoid Arthritis.” *National Institute of Arthritis and Musculoskeletal and Skin Diseases*, U.S. Department of Health and Human Services, www.niams.nih.gov/file/813.