

# Chemo-& Immunoprevention

30<sup>th</sup> Annual Cancer Progress Conference, May 2019

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University Hospitals of Cleveland / Case Comprehensive Cancer Center



# ***Conflicts***

Scientific Advisor: **Triterpenoid Therapeutics**,  
developing novel synthetic triterpenoids for use in  
chemoprevention of cancer and inflammatory  
disease.

Co-Founder: **Celloram**, developing novel dendritic  
cell-based therapeutics for use in the treatment of  
cancer, autoimmune and inflammatory disease



# Chemo- & Immunoprevention

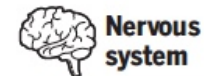
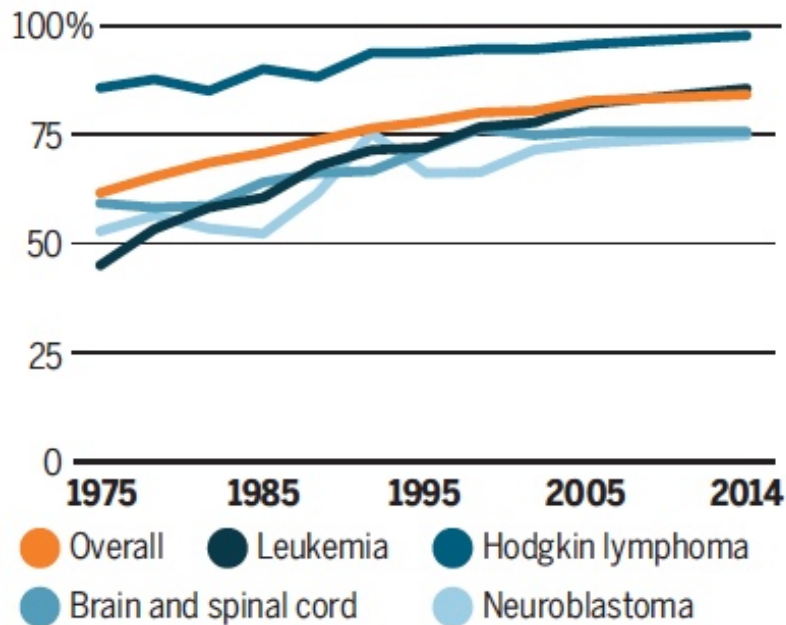
- **Critical Need for Cancer and Rare Disease.**
- A 'case in point': Survivors of Childhood Cancer
  - 83% of childhood cancer patients become long-term survivors
  - 500,000 survivors of childhood cancer in the US by 2020
  - Roughly one third will develop a second cancer by age 50
  - 80% have at least one serious, disabling or life threatening condition by age 45



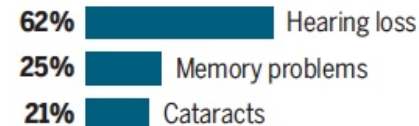
# An Emerging Challenge

- An expanding population of survivors at risk.

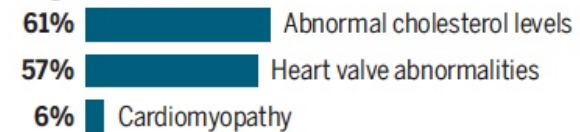
## Survival 5 years after cancer



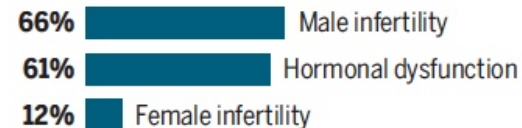
### Nervous system



### Cardiovascular system



### Endocrine system



### Pulmonary system



*Science* Vol. 363 Issue 6432 (15 March, 2019)



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Rainbow Babies  
& Children's Hospital

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5/28/2019

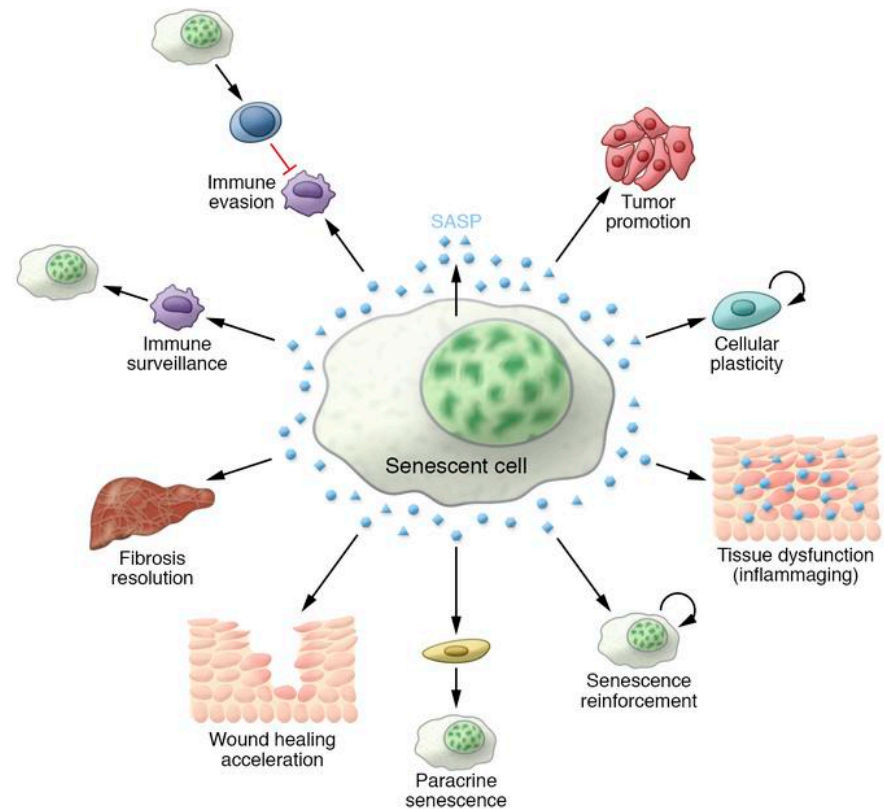
# Tackling Therapy-Induced Risk

New Science, New Targets....is it time for a New Approach?

**Therapy-induced senescence of normal cells a driver of premature aging, cancer progression, and relapse**

*Cancer Discov*; 7(2); 165–76.

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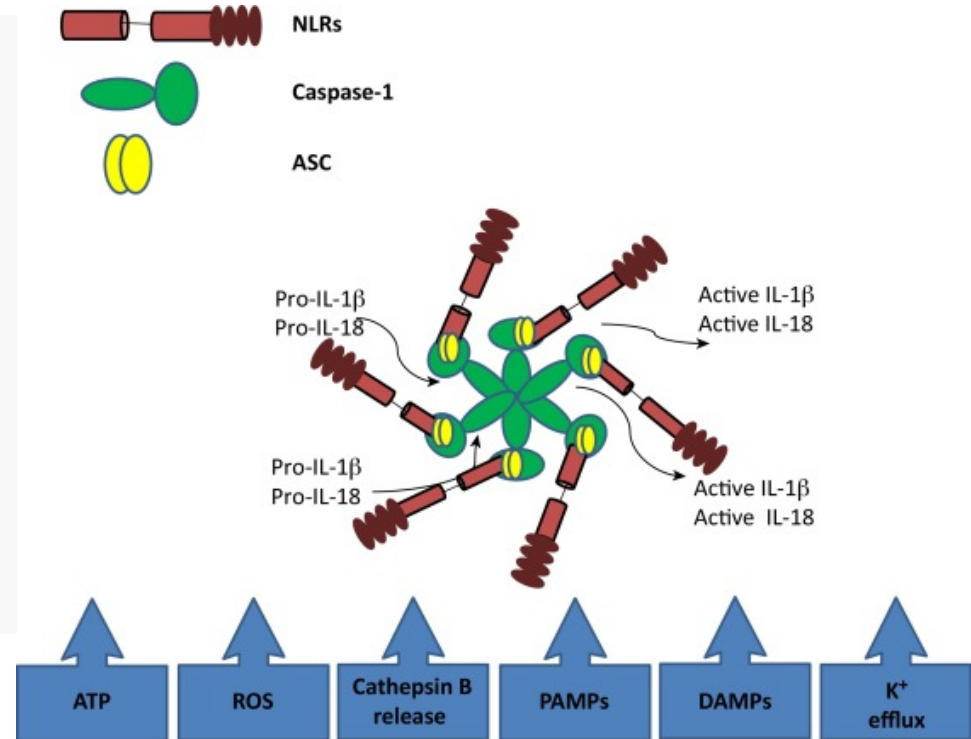


*J Clin Invest* DOI: 10.1172/JCI95148

# Tackling Therapy-Induced Risk

## New Science, New Targets....The Inflammasome

**Therapy-induced inflammasome activity** a driver of toxicity in response to chemotherapy, radiation and to CAR-T therapy



Trends in Endocrinology & Metabolism

*Trends in Endocrinology and Metabolism* [VOLUME 29, ISSUE 1](#), P8-17, JANUARY 01, 2018



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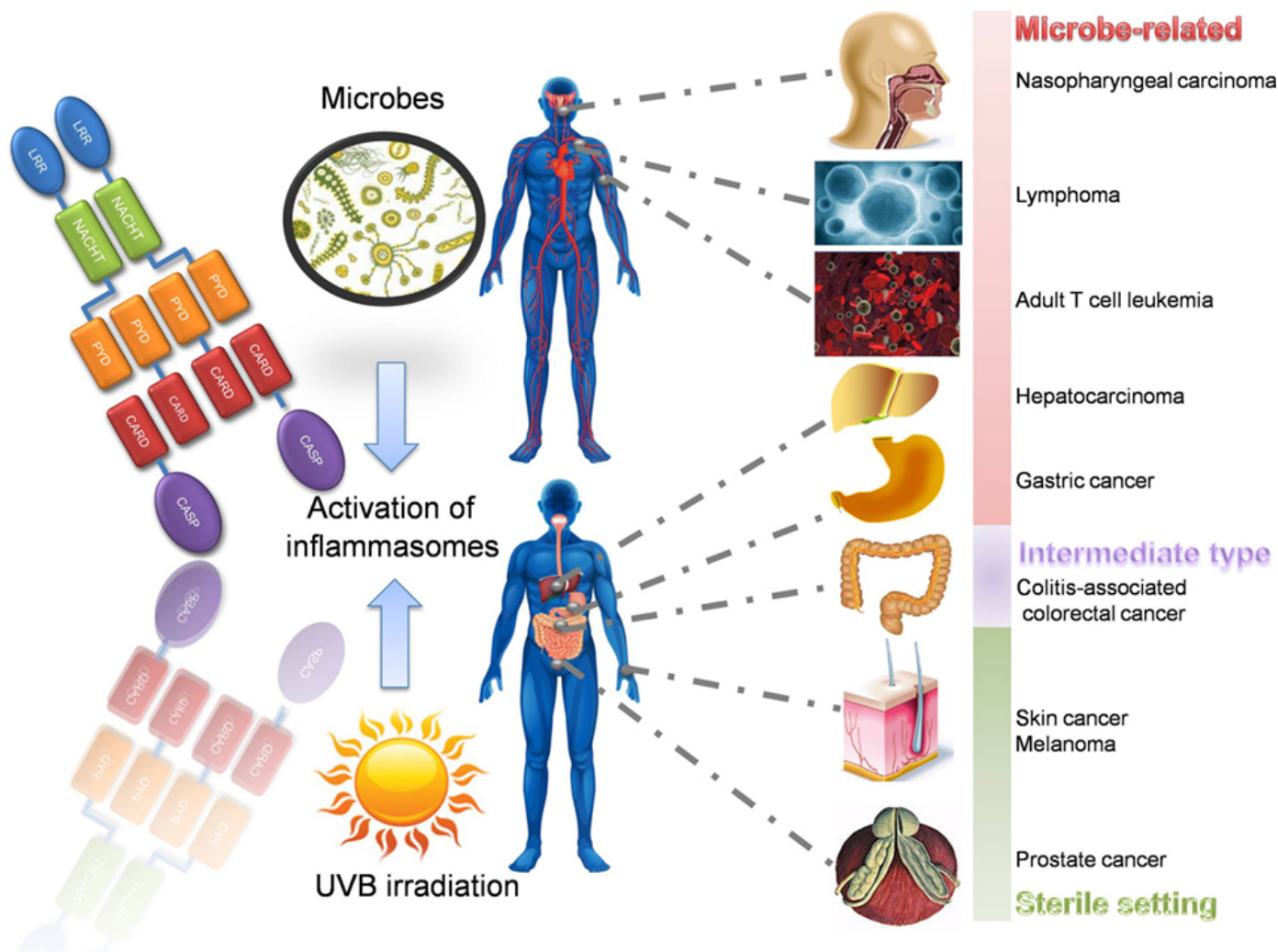
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# Reducing Inflammation-Induced Risk



Front. Immunol., 15 March 2017 |

# Risk Reduction – Creating a Brighter Future



- **Emerging Strategies:**
  - Immunoprevention: cancer vaccines; neo-antigen + dendritic cell vaccine
  - Chemoprevention of immune-related toxicities incorporated *up front* into treatment regimens
  - Immunoprevention of disease recurrence and therapy related toxicities





# THANK YOU

