The framework of host immunological pathways and their relation to programmed cell death. Apoptosis is related to host anti-virus eradicable THαβ immunity. Autophagy is related to host anti-virus tolerable TH3 immunity. Pyroptosis is related to host anti-intracellular micro-organism eradicable TH1 immunity. Ferroptosis is related to host anti-intracellular micro-organism tolerable TH1-like immunity. Necroptosis is related to host anti-extracellular micro-organism eradicable TH22 immunity. NETosis is related to host anti-extracellular micro-organism tolerable TH17 immunity. Credit: 2024 Lu et al.
A new review was published as the cover paper of Aging, titled "Types of cell death and their relations to host immunological pathways."

Various immune pathways in the host, such as TH1, TH2, TH3, TH9, TH17, TH22, TH1-like, and THαβ, have been identified. While TH2 and TH9 responses primarily target multicellular parasites, host immune pathways against viruses, intracellular microorganisms (like bacteria, protozoa, and fungi), and extracellular microorganisms utilize programmed cell death mechanisms to initiate immune responses and effectively eliminate pathogens.

In their review, researchers Kuo-Cheng Lu, Kuo-Wang Tsai, Yu-Kuen Wang, and Wan-Chung Hu from Taipei Tzu Chi Hospital, Fu Jen Catholic University, Taoyuan Armed Forces General Hospital, Tri-Service General Hospital and Ming Chuan University, reviewed these cell death pathways associated with the host immunological pathways.

"These relationships can help us understand the host defense mechanisms against invading pathogens and provide new insights for developing better therapeutic strategies against infections or autoimmune disorders," explain the researchers.

**More information:** Kuo-Cheng Lu et al, Types of cell death and their relations to host immunological pathways, Aging (2024). DOI: 10.18632/aging.206035

Provided by Impact Journals LLC

Citation: Cell death types and their relations to host immune pathways (2024, August 16) retrieved 20 August 2024 from https://medicalxpress.com/news/2024-08-cell-death-host-immune-