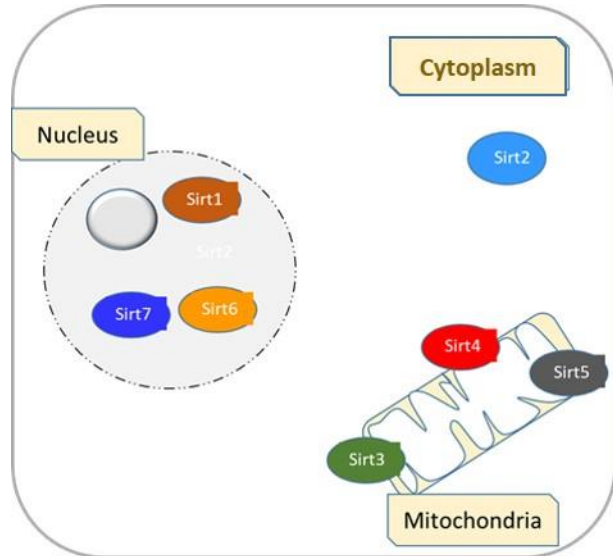


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1. Molecular mechanisms of stress and aging



The sea urchin, a *proxy to humans* model, to explore new roles of Sirtuins, a class of NAD⁺-dependent protein deacetylases and ADP ribosyltransferases. We focus on their expression in immune cells exposed to oxidative or genotoxic stress induced by biotic or abiotic agents. Sea urchin immune cells are part of the complex innate immune system of this invertebrate.

The sea urchin sirtuins are here investigated as molecular biosensors of experimentally-induced stress in a straightforward biological system able to overcome any ethical issue.

Maria Di Bernardo, Letizia Anello in collaboration with UniPa
(AM Puglia, T. Faddetta) and CNR IBBR (F. Carimi and D. Pacifico.)

2. Endophytes in grain



Exploiting the potential of microbes isolated from seeds of old Sicilian durum wheat landraces, as bio-inoculants. The goal of this project is the characterization of seed-associated microbiota, testing their ability to modulate plant fitness during growth or induce resistance to drought, salt or pathogens. *The selection of microorganisms will be oriented to non-pathogenic, safe and eco-friendly genera to be used in agricultural practices as specific fertilizers.*