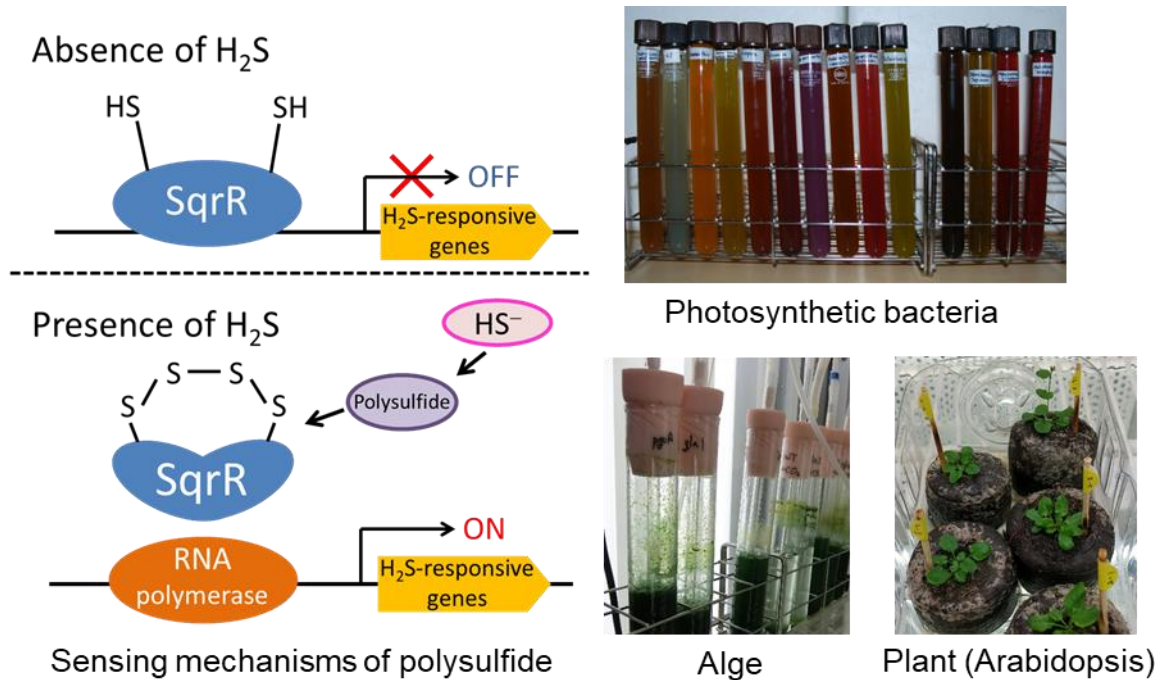


Understanding Life through Novel Signal Regulation

Mechanisms Involving “Polysulfide”

Takayuki SHIMIZU [Biological Sciences Course]



All living organisms sustain their lives through redox (oxidation and reduction) reactions.

Our laboratory focuses on “*polysulfide*”, a class of highly redox-active sulfur species, to gain a deeper understanding of biological phenomena.

Using photosynthetic organisms as model systems, we investigate how these molecules are produced, sensed, and utilized within cells, employing a variety of analytical approaches in collaboration with research institutes in Japan and abroad.

Our ultimate goal is to uncover the unique functions of polysulfide and explore their potential applications in developing novel therapeutic strategies for human diseases and improving crop productivity.

Keywords: transcriptional regulation, sulfur metabolites, cysteine modification, chloroplast biogenesis