Thioredoxin

Thioredoxin is a class of small redox proteins known to be present in all organisms. It plays a role in many important biological processes, including redox signaling. In humans, thioredoxins are encoded by TXN and TXN2 genes.

Loss-of-function mutation of either of the two human thioredoxin genes is lethal at the four-cell stage of the developing embryo. Although not entirely understood, thioredoxin plays a central role in humans and is increasingly linked to medicine through their response to reactive oxygen species (ROS). In plants, thioredoxins regulate a spectrum of critical functions, ranging from photosynthesis to growth, flowering and the development and germination of seeds. It has also recently been found to play a role in cell-to-cell communication.

see Thioredoxin interacting protein.