

ПЛЕНАРНЫЕ ВЫСТУПЛЕНИЯ/ PLENARY REPORTS

ANTIOXIDATIVE AND CYTOPROTECTIVE PROPERTIES OF SULFANE SULFUR SPECIES

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Recently sulfane sulfur species (hydropersulfides and polysulfides) have been found to be formed naturally inside mitochondria and to exhibit powerful antioxidative and cytoprotective properties. But the chemical and biochemical mechanisms behind these effects are not yet understood.

The present study aims to understand how various sulfane sulfur species interact with oxidants, electrophiles and radicals, with a special interest in the idea that sulfane sulfur species may catalyze the reduction of oxidants, rather than merely being consumed in the process.

For this purpose, we synthesized sulfane sulfur derivatives of cysteine and glutathione (cysteine trisulfide and glutathione trisulfide). Glutathione reductase is found to convert glutathione trisulfide to glutathione hydropersulfide which may act as a scavenger for oxidants, electrophiles and radicals.