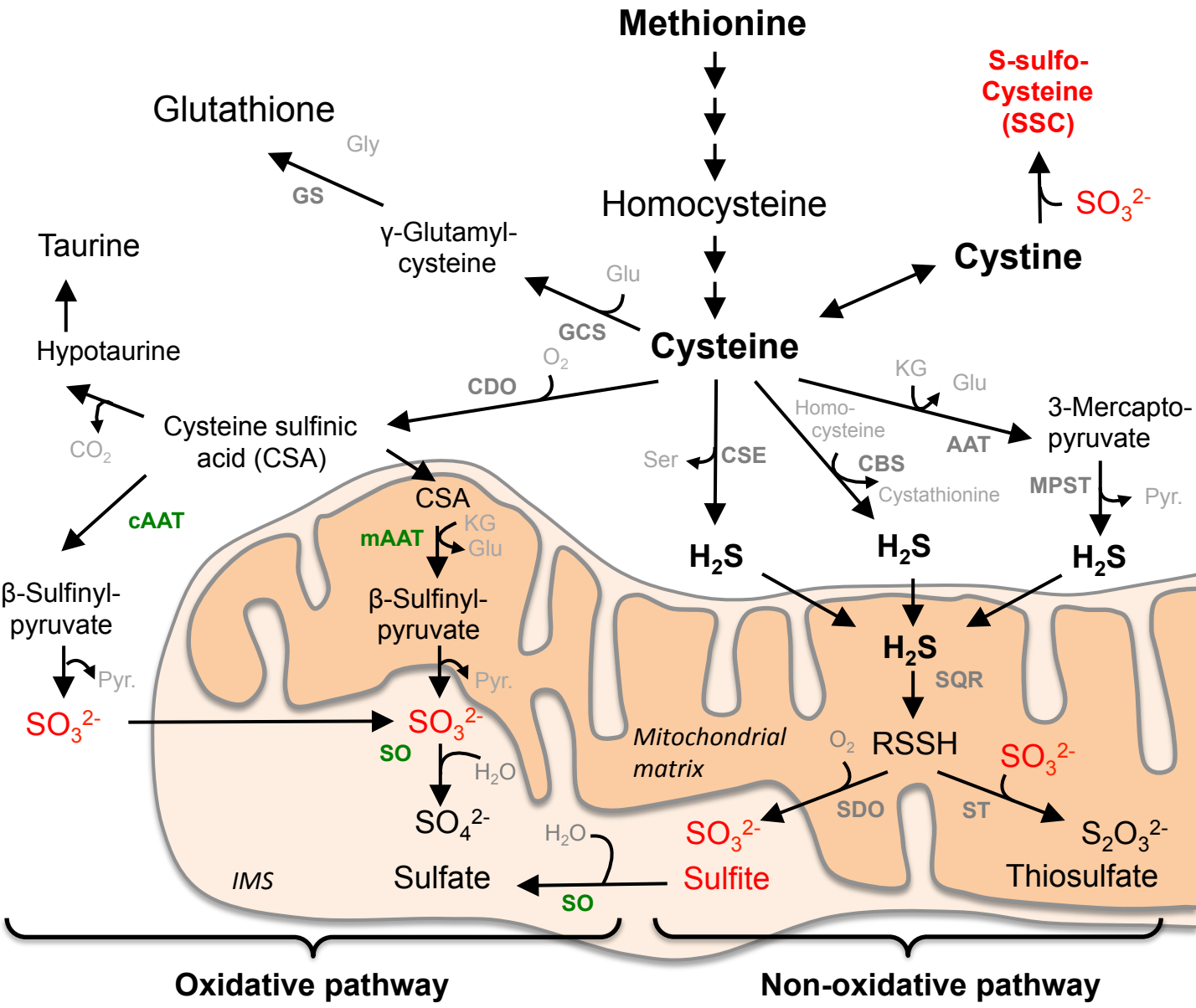

Cysteine can be absorbed from the diet or synthesized from methionine through several intermediates of the transmethylation and transsulfuration pathway. Cysteine is the precursor of glutathione (GSH), which is synthesized γ-glutamylcysteine synthetase (GCS) and glutathione synthetase (GS). The catabolism of cysteine follows two major routes: an oxidative pathway leading to the formation of sulfate and taurine as sulfur-containing endproducts. The sulfite oxidase reaction takes place in the mitochondrial intermembrane space (IMS), Secondly, a non-oxidative pathway leads to hydrogen sulfide formation, which is further converted to sulphite and thiosulfate within mitochondria.

The enzyme abbreviations used are: CBS, cystathionine β-synthase; CSE, cystathionine γ-lyase (cystathionase); CDO, cysteine dioxygenase; CSD, cysteinesulfinate decarboxylase; AAT, aspartate aminotransferase; SO, sulfite oxidase; MPST, 3-mercaptopyruvate sulfurtransferase; SQR, quinone oxidoreductase; SDO, sulfur dioxygenase; ST, sulfur transferase.

Schwarz, Figure 4