
C16**Glutathione and Glutathione-Related Enzymes during
Dictyostelium Development**

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Glutathione (GSH) is most prevalent reducing thiols in eukaryotic cells and known that participates in many cellular processes. It was found that total amount of glutathione and the ratio of reduced to oxidized glutathione during development of *Dictyostelium discoideum* increase at the initial stage of the aggregation of amoeba. Total glutathione level increased between 4 hours and 10 hours of development and slowly decreased after 12 hours. Γ -glutamylcysteine synthetase mRNA accumulated during first 6 hours of development and decreased between 8 hours and 20 hours. Glutathione reductase activity and mRNA level were similar with Γ -glutamylcysteine synthetase mRNA level. Glutaredoxin was the enzyme reduced by GSH, which of mRNA level and activity similarly increased in accordance with GSH level. These results suggest that GSH and GSH-metabolic enzymes may play a role in the aggregation stage of development in *D. discoideum*