



REGIONAL CENTRE FOR BIOTECHNOLOGY
Eukaryotic Model Organisms Workshop Seminar

**Glutathione Degradation : Discovering new
pathways from yeast**

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Workshop Seminar

Abstract

Glutathione is an essential metabolite for almost all eukaryotes, from yeasts to man. Glutathione plays a key role in maintaining redox homeostasis in living cells, and disruption of this homeostasis is observed in many disease conditions. Glutathione homeostasis is controlled and determined by different processes. One of the key processes in glutathione homeostasis is glutathione degradation. Since 1970, the only enzyme known to be responsible for glutathione degradation has been g-glutamyl transpeptidase, an enzyme of the g-glutamyl cycle of glutathione metabolism proposed by Meister.

In this lecture, I will describe how using the yeast *Saccharomyces cerevisiae* we have discovered 2 new pathways of glutathione degradation. One of these pathways is unique to yeasts and fungi, while the other is present from *E.coli* to man. The discoveries were made using different approaches, and is an example of how the yeast model continues to be a powerful discovery tool in biology.
