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Molecular Nutrition Food Research

MNF Interview: The health risk of nitrosamines

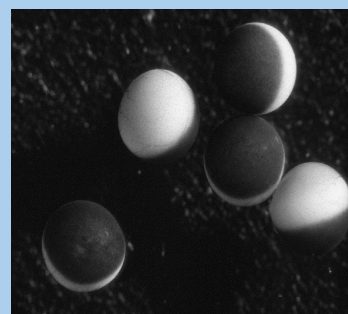
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MNF Education:

The *Xenopus* oocyte: System for the study of functional expression and modulation of proteins

Erwin Sigel and Frédéric Minier

The oocyte from the South African clawed frog *Xenopus laevis* provides a convenient experimental system to investigate function and modulation of proteins. Specifically of interest here is the possibility to characterize the influence of nutritional components or their breakdown products on specific protein targets. In addition the oocyte can be used to study transport systems for these nutrition-derived molecules. This can be achieved by microinjection of genetic information coding for the protein in question, usually in the form of mRNA, into *Xenopus* oocytes. This leads to expression of the corresponding protein. The system is especially suited for the study of ion channel and trans-membrane transport systems. In the oocyte the function and modulation of these newly expressed proteins can be described. This is facilitated by the fact that experimental conditions as membrane potential and composition of the medium can easily be controlled and rapidly changed. We review here the practical procedures used, the detection of newly expressed protein, the uses and limitations of this expression system. 228



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