

12.15 – 12.45 hrs.

## Stress and Immunity: Implications for animal welfare

*Prof.dr. Robert Dantzer*

*University of Bordeaux, France*

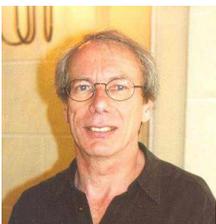
### Summary

Studies on the influence of stress on immunity have concentrated on the description of the effects of various acute and chronic psychosocial and physical stressors on immune responses and on the mechanisms by which these effects are mediated, including the neuroendocrine and the neural pathways. It has been now amply demonstrated that changes in innate and acquired immunity can be used as indicators of well-being, in conjunction with behavioral and neuroendocrine indicators. In comparison to usual indicators of welfare, immune indicators have the advantage of integrating over time the influence of various biological functions that can be altered during exposure to stress, and they have pathophysiological relevance since the alterations in immunocompetence can be at the origin of disturbances in sensitivity to various infections.

Soluble mediators released by activated innate immune cells can also have profound influences on brain functions and in particular be at the source of sickness behaviour. The molecular and cellular mechanisms that mediate the expression and action of cytokines in the brain have been elucidated during the last ten years. There is now evidence that this system can be activated by non immune stressors as well as immune stressors, which opens important new avenues for our understanding of the biological basis of well-being.

### CV

#### Robert Dantzer



Robert Dantzer was born on 1944 in Saint-Etienne, France. He got his Doctorate in Veterinary Medicine on 1968, his PhD on 1972, and his Doctorate es-Sciences on 1977. He is presently Director of Research at the French National Institute for Agronomic Research and the Director of the Laboratory of Integrative Neurobiology at Bordeaux, France, an operation funded by the French National Institute for Health and Medical Research, the French National Institute of Agronomic Research and the University of Bordeaux 2. Eleven scientists and 12 technicians work in this laboratory on various aspects of the expression and action of cytokines in the brain and their pathological consequences.

Robert Dantzer has worked for many years on the psychobiology of stress, the influence of neuropeptides on behavior, and the interactions between the immune system and the brain. His current research aims at understanding the mechanisms of cytokine-induced sickness behavior, and the possible involvement of cytokines in symptoms of depression. He has authored and co-authored more than 300 original research papers and 90 book chapters on stress, anxiety, neuropeptides and psychoneuroimmunology. He is also the author or the editor of several books on stress in intensive husbandry, emotions, psychosomatics, and cytokines. He is the Editor-in-Chief of Psychoneuroendocrinology (Elsevier), the Associate Editor of Brain, Behavior and Immunity (Academic Press/Elsevier), and the current President of the Psychoneuroimmunology Research Society.