

## **Free Radical Involvement in Pain: Some Basic Concepts**

Christine Winterbourn

*Free Radical Research Group, Department of Pathology, University of Otago Christchurch*

There is a considerable literature discussing the possible involvement of free radicals in pain and interest in the possibility that drugs with antioxidant activity could be beneficial in this respect. I will discuss some of the basic biology of free radicals that lies behind these concepts, considering both how they are produced and what they might do in relation to pain and inflammation. I will consider both the damaging effects of reactive oxidants and emerging evidence that these species have more subtle, but nevertheless far reaching effects as regulators of cell signalling pathways. Antioxidants are traditionally thought of as compounds that act primarily by neutralizing free radicals. I will also discuss how this is not always the case and we need to be careful about attributing the effects of “antioxidant” drugs and nutrients to their radical scavenging properties.