

**Name:** Barry Halliwell

**Current Position:**

Tan Chin Tuan Centennial Professor

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**Major Research Interests:**

Research in my laboratory concentrates on two major areas (1) the molecular mechanisms of free radical (including nitric oxide) –induced damage, how it can be affected by endogenous and diet-derived antioxidants and the significance of this for human disease and nutrition and (2) molecular mechanisms of neurodegeneration. Current topics include:

- Cellular mechanisms of toxicity by abnormal proteins in neurodegenerative disease.
- Elucidation of the role of iron in the development of atherosclerosis.
- Mechanisms of sulphite toxicity in the brain.
- The role of lipid peroxidation as a possible prognostic factor for the development of diabetes.
- Oxidative DNA damage in the nuclear and mitochondrial genomes, its molecular relationship to mutation and cancer, and its possible modulation ageing by diet.
- Isolating, purifying, testing in vivo, and examining the mechanisms of action of antioxidants from regional foods and traditional Chinese medicines.

**Six Representative Publications:**

- Halliwell B, and Gutteridge JMC. (2007) Free Radicals in Biology and Medicine. Clarendon Press, Oxford (fourth edition), UK.
- Jenner A, Ren M, Rajendran R, Ning P, Huat BT, Watt F and Halliwell B. (2007) Zinc supplementation inhibits lipid peroxidation and the development of atherosclerosis in rabbits fed a high cholesterol diet. Free Radic Biol Med. 42: 559-566.
- Halliwell B, (2006) Oxidative stress and neurodegeneration: where are we now? J Neurochem. 97: 1634-1658.
- Lim KS, Jenner A and Halliwell B. (2006) Quantitative gas chromatography mass spectrometric analysis of 2'-deoxyinosine in tissue DNA. Nature Protocols. 1: 1995-2002.

- Whiteman M, Hooper DC, Scott GS, Koprowski H and Halliwell B. (2002) Inhibition of hypochlorous acid-induced cellular toxicity by nitrite. *Proc. Natl. Acad. Sci. USA.* 99: 12061-12066.
- McNaught K St P, Olanow CW, Halliwell B, Isacson O and Jenner P. (2001) Failure of the ubiquitin – proteasome system in Parkinson`s disease. *Nature Rev. Neurosci.* 2: 589-594.