

# Applications of electron spin resonance and spin trapping in tropical parasitic diseases

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Free radicals may be reaction intermediates in biological systems in more situations than are presently recognized. However, progress in detecting such species by Electron Spin Resonance (ESR) has been relatively slow. ESR is a very sensitive technique for free radical detection and characterization. It can be used to investigate very low concentrations of radicals provided that they are stable enough for their presence to be detected. For unstable radicals special techniques have to be employed. One of these methods is called Spin Trapping. Parasitic diseases in tropical and subtropical areas constitute a major health and economic problem. The range of antiparasitic drugs varies widely in structural complexity and action at the subcellular and molecular levels. However, a number of these drugs are thought to exert their action by generating free radicals. Most of the free radical producing drugs used against parasites are: quinones, naphtoquinones, quinone-imines, aminoquinolines, N-o