

Immunological Identification of the Heart Myoglobin Radical Specifically Formed by Hydrogen Peroxide

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This study reports the detection of protein free radicals using the specific free radical reactivity of nitron spin traps in conjunction with nitron-antibody specificity. Polyclonal antibodies were developed that bind to protein adducts of the nitron spin-trap 5,5-dimethyl-1-pyrroline N-oxide (DMPO). The antibodies were used to detect DMPO protein adducts produced on horse myoglobin resulting from self-peroxidation. Western blot analysis demonstrates that myoglobin forms the predominant radical-derived nitron adduct in rat heart supernatant.