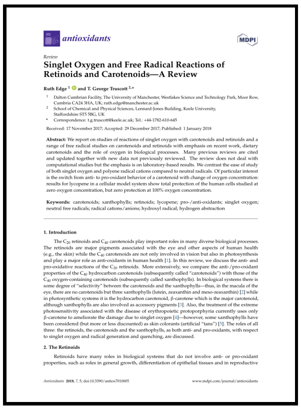
Investigation of hydrogen abstraction reactions by stable free radicals from amino-acids and model compounds.

University of Salford - Hydroxyl free radical reactions with amino acids and proteins studied by electron spin resonance spectroscopy and spin


antioxidants

MDPI

Review

Singlet Oxygen and Free Radical Reactions of Retinoids and Carotenoids—A Review

Description: -

-investigation of hydrogen abstraction reactions by stable free radicals from amino-acids and model compounds.

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Notes: MSc thesis, Chemistry.

This edition was published in 1972

Filesize: 48.13 MB

Tags: #Protein #oxidation #and #peroxidation

Free

Protein hydroperoxides as intermediaries in the development of biological damage initiated by ROS In 1992, it was reported 61 that protein hydroperoxides POOH can consume key cellular reductants. The early stage radiolysis reactions in dry biological powders and crystals have been identified by electron paramagnetic resonance EPR. Approximately twenty scans are used as described above for the determination the starting scan number, except the peak is approached from the tailing side; the ending scan number is the scan number where the calculated average intensity at two percent of the maximum drops one scan.

Degradation of Glycine and Alanine on Irradiated Quartz

We gradually understand that it is not a single molecule that hydrogen treatment takes effect on, but a network of intricate signal transduction pathways. In EPR studies, a hydrogen atom abstractor, such as hydroxyl radical, is used to generate the carbon-centered radical of the molecule of interest. Nuclear magnetic resonance NMR : a technique for determining molecular structures based on the interactions of magnetic nuclei with an external magnetic field.

Molecular hydrogen: current knowledge on mechanism in alleviating free radical damage and diseases

We discussed the antioxidative, anti-inflammatory, and anti-apoptosis effects of hydrogen, as well as its protection on mitochondria and the endoplasmic reticulum, regulation of intracellular signaling pathways, and balancing of the immune cell subtypes. The hydroperoxides generated when amino acids, peptides and proteins are exposed to radicals in the presence of O 2 are stable in the absence of exogenous catalysts e. Biochim Biophys Acta 2001; 1504: 196—219.

IONISING RADIATION

The reaction was found to have an induction period of about 12 minutes after the start of irradiation, but it was almost completely eliminated when the reaction was carried out under nitrogen atmosphere; under oxygen-free conditions a significant increase in the rate of the light-catalyzed decomposition of N-haloamines was reported. The life span of such insulation is about 50 years.

Degradation of Glycine and Alanine on Irradiated Quartz

The gyromagnetic ratio of the electron is about 2000 times higher than that of protons, neutrons, and magnetic nuclei.

Hofmann

Evaluation of DFT methods to study reactions of benzene with OH radical. Isotope Ratio Measurements Using ESI-MS. Chem Res Toxicol 2013; 26: 67—77.

Methods for carbon

The cancer cells in the core of a solid tumor have a lower oxygen concentration than well-oxygenated normal tissues which limits the radiation dose.

Computational investigation of hydrogen abstraction from 2

The hydrogen abstraction by thiyl radicals from the side group or C-H bonds in model peptides 37 and proteins 38, 39 has been a matter of increasing interest in recent years owing to the biological significance of these kinds of reactions.

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