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EXPLORING THE ROLE OF NITRIC OXIDE IN MODULATING PEROXYL RADICALS-INDUCED DNA DAMAGE: AN LC-MS/MS STUDY

Par : Ommay Habiba

DIRECTION DE RECHERCHE:

PR RICHARD J. WAGNER &

PR JEAN-PAUL JAY-GERIN

PRÉSENTATION ÉTUDIANTE:

ÉLODIE GILLARD

NITRIC OXIDE IS A KEY SIGNALLING MOLECULE IN VARIOUS PHYSIOLOGICAL AND PATHOLOGICAL PROCESSES INCLUDING VASODILATION, IMMUNE RESPONSE, NEUROTRANSMISSION, AND REGULATION OF OXIDATIVE STRESS. IN THIS STUDY, WE INVESTIGATED THE INFLUENCE OF NITRIC OXIDE IN MODULATING PEROXYL RADICALS-INDUCED DNA DAMAGE USING THYMIDINE AS A MODEL SYSTEM. THYMIDINE WAS EXPOSED TO GAMMA IRRADIATION IN PRESENCE AND ABSENCE OF DEA NONOATES AS A NITRIC OXIDE DONOR. THE SAMPLES WERE ANALYZED USING LIQUID CHROMATOGRAPHY-TANDEM MASS SPECTROMETRY (LC-MS/MS) TO DETECT OXIDATIVE DNA LESIONS. THE RESULTS REVEALED AN EFFECTIVE DECREASE IN PEROXYL REDICALS-INDUCED DAMAGE IN THE PRESENCE OF NITRIC OXIDE. THESE FINDINGS PROVIDE NEW INSIGHTS INTO THE POTENTIAL PROTECTIVE EFFECTS OF NITRIC OXIDE AGAINST OXIDATIVE DNA DAMAGE, MEDIATED BY PEROXYL RADICALS.

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