

EPR studies on nitric oxide generation in the ascitic form of murine lymphoma

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Electron paramagnetic resonance (EPR) spectroscopy is a useful tool for monitoring nitric oxide synthesis during defense reactions of immunological system. A characteristic EPR “triplet” signal of nitrosyl-heme complexes can be detected both in rejecting allografts and in *in situ* growing solid tumors. Its intensity is, however, very poor in ascitic fluid. This paper describes three ways towards improving the detectability of such a signal in murine ascitic lymphoma L5178Y-R: (1) by using Swiss mice as a typical, allogeneic outbred hosts of the ascites, (2) by maintaining strictly anaerobic conditions during all laboratory procedures, and (3) by increasing the level of the spin trap (hemoglobin) in the intraperitoneal cavity of the host. Moreover, the paper shows the changes in the intensity of ESR “triplet” signals in subsequent days of progression of ascitic lymphoma in Swiss mice. The kinetics reveals a strong maximum on day 8, which resembles the behavior of EPR “triplets” detected in solid tumors of L5178Y-R lymphoma, Cloudman S91 melanoma and in rejecting allografts.