

ESR signals detectable in the tumors of murine L5178Y-R lymphoma

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Two types of ESR signals detectable in L5178Y-R lymphoma tumors – the signals of nitrosyl-heme complexes and of nonheme-iron nitrosyl complexes originate from various forms of iron which react with nitric oxide, produced during immunological anti-tumor defense processes of the host. The studies took advantage of the fact that strong “triplet” signals are detectable in tumors with good blood supply, growing in host of high immunoreactivity against neoplastic tissue. The experiments revealed that the intensity of the ESR “triplet” signals detected in lymphoma tumors are correlated with their growth in different type of hosts. In the natural, syngeneic host (DBA/2), in which the tumors grew quickly and killed the animals, the triplets were weak and decreased after reaching the maximum on day 11. Strong ESR “triplets” were detectable in tumors from allogeneic C57BL/6 mice and in this case lymphoma regressed totally. Big tumors obtained from allogeneic outbreed hosts (Swiss mice) revealed the strongest ESR “triplets”, but in the initial phase of their growth the signals were weaker as compared to those detectable in tumors from C57BL/6 mice. The results obtained upon use of ESR spectroscopy demonstrated that the anti-tumor defense against L5178Y-R lymphoma differs in various host strains and changes during the growth of tumors.