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20S Proteasome Intratumoral Delivery Effect on Lifespan of Melanoma-Bearing Mice

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The ubiquitin-proteasome system is involved in the regulation of most major intracellular processes, and disruptions in the functioning of this system lead to various pathologies. The proteolytic core of this system, 20S proteasome, was found in the physiological fluids of both healthy people and patients suffering from various inflammatory, autoimmune and oncological diseases. It has been observed that the concentration of extracellular proteasomes correlates with the severity of the disease, however, the function of proteasomes in extracellular space is still unknown. To understand the function of proteasomes in extracellular space, we evaluated the effect of intratumoral administration of the exogenous pool of 20S proteasomes purified from cells on a mouse model of melanoma. We showed that intratumoral administration of 20S proteasomes led to a small (slightly less than 20%) increase in the lifespan of experimental animals.

Keywords: xenograft, melanoma, proteasome, proteolysis