EFFEROCYTOSIS FACTOR ADMINISTRATION LIMITS CANCER PROGRESSION BY IMPROVING ANTI-TUMOR IMMUNE RESPONSE

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Cancers are the consequences of a cellular dysfunction characterized by an abnormal cellular multiplication and proliferation, which at least lead to metastasis formation. The main and natural defense against cancer cells is the inflammatory reaction, with immune cell recruitment. However, this inflammatory environment also favors cancer cell progression, their evasion from immune surveillance leading to cancer development. Current therapeutic strategies intend to enhance natural immune response in order to increase immunosurveillance, control and rejection of the tumor. However, these approaches represent a source of inflammatory mediators that can be used by cancer cells to grow, differentiate and migrate, encouraging metastasis formation. In consequence, limiting inflammation appears to be an innovative strategy to avoid the escape of cancer cells and potentially enhance the efficacy of antitumor therapies.

Consequently, our studies aim to explore the control of tumor-associated inflammation by the administration of pro-resolutive factors on tumor progression.

We have used an inflammatory experimental cancer model with peritoneal cancer cell injection expressing luciferase. We have assessed cancer progression by bioluminescence quantification using luciferin (Promega) administration.

We have observed that pro-resolving mediators, issued from apoptotic cell efferocytosis by macrophages, injected in tumor bearing mice allowed the control of peritoneal cancer cell progression and dissemination to the blood and mesenteric lymph nodes. This was associated with macrophage mobilization at the tumor site and draining lymph nodes, with a specific phenotype related to IFN-g tumor-specific CD4 and CD8 T-cell response.

Altogether, these results show that controlling tumor-associated inflammation represent an innovative opportunity to enhance cancer immunosurveillance.