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regulates the tumor micromilieu and thus its establishment and growth. The participation of mast cells (MCs) on ovarian tumor pathophysiology and tumor angiogenesis is poorly understood.

Objectives As MCs possess both anti-tumorigenic and pro-tumorigenic capabilities we aimed to understand their effect on tumor cell proliferation and tumor growth employing *in vitro* and *in vivo* approaches.

Materials and methods Wound healing assays using human (OVCAR-3 and SK-OV-3) and murine tumor cell lines (ID8 and ID8 F3) were conducted. Mast cells (human: HMC-1; murine: MC/9) were given directly to the tumor cells or a transwell system was employed to determine the effect of MC-derived soluble factors.

$5x10^6$ ID8 cells or ID8 F3 cells (deletion of p53) were injected subcutaneously into the flanks of 8-10 weeks old female C57BL6/J mice as well as mast cell-deficient B6.Cg-KitW-sh/HNihrJaeBsmJ mice (C57BL/6J background; $Kit^{W\text{-}sh}$). Control mice received 0.1 ml PBS. The tumor development was recorded weekly by high frequency ultrasound. The mice were sacrificed 14 weeks after tumor application.

Results We observed a diminished proliferation of human ovarian tumor cells upon cell-cell contact with HMC-1 mast cells or their supernatant. The *in vivo* application of ID8 cells into mast cell-deficient $Kit^{W\text{-}sh}$ resulted in significantly increased tumor growth when compared to C57BL6/J mast cell sufficient mice.

Conclusion Our *in vitro* results suggest that mast cells have a direct influence on ovarian tumor cell proliferation. *In vivo*, we indeed confirmed that the absence of host MCs is related to abnormally rapid tumor growth of ovarian cancer cells. We are currently investigating possible MC-derived mediators of this important effect. We suggest that MCs have a negative effect on ovarian tumor growth and may serve as a new therapeutic target.

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Phenotype of tumor-associated macrophages can be used in predictions of metastasis of prostate cancer

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TAMs (tumor-associated macrophages) are innate immune cells, which are present in prostate cancer (PC) tissue. TAMs play major role in tumor progression, invasion, neoangiogenesis, metastasis and resistance to therapy. Prostate cancer patients often have long time periods between curative intent surgery or radiation therapy until the time of biochemical recurrence or metastatic relapse is detectable but the disease at this stage can be incurable with the current treatment options. We believe that correctly identifying the phenotype of TAMs and the corresponding molecular biomarkers can predict the aggressiveness of PC, response to chemotherapy and development of postoperative metastasis. Tumor tissue samples were obtained from 40 PC patients who underwent radical prostatectomy. The samples were assessed by immunohistochemistry techniques followed by confocal microscopy. We have available data from the immunohistological analysis of several biomarkers, such as, CD68+, known as a pro-inflammatory marker in macrophages and Stabilin, which is a receptor protein with multiple functions such as receptor scavenging or angiogenesis.

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Role of γδ T cells in inflammatory bowel disease and colitis-associated cancer

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Inflammatory bowel disease is a complex chronic inflammatory disease of the human gut with no clear etiology. Colitis-associated cancer (CAC) is a CRC subtype that is associated with inflammatory bowel disease (IBD); it is difficult to treat and has high mortality.

