Séminaire

Département des sciences de l'imagerie médicale et des radiations

ENHANCING RADIOTHERAPY RESPONSE BY TARGETING IMMUNOSUPPRESSIVE CELLS IN HEAD AND NECK CANCER

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Radiotherapy (RT) remains a cornerstone treatment for head and neck squamous cell carcinoma (HNSCC), yet nearly 40% of patients experience recurrence due to treatment resistance. Increasing evidence suggests that immunosuppressive cells, including regulatory T cells (Tregs) and M2-like tumor-associated macrophages (TAMs) contribute to this resistance. My PhD project aims to elucidate how these cells are modulated by RT and to identify therapeutic strategies that enhance anti-tumor immunity. In this seminar, I will focus on the CCL2–CCR2 axis and its role in macrophage recruitment and polarization which we identified as a key mediator of radioresistance. Our findings show that RT induces tumor-derived CCL2 expression, promoting macrophage recruitment and immunosuppressive remodeling of the tumor microenvironment (TME). Blocking CCL2 enhances RT efficacy and promotes anti-tumor immune activation. These results highlight CCL2 as a promising target to overcome RT resistance and provide a foundation for future studies combining CCL2 blockade with immunotherapy.