BIOLOGICAL CHARACTERIZATION AND NON INVASIVE PET IMAGING: EXPLORATIONS OF LYMPHATIC DISSEMINATION IN A HUMAN MESENCHYME MODEL

Olivier DUCHAMP1, Raphaël BOISGARD2, Bertrand TAVITIAN3, Philippe GENNE1 and Nicolas GUILBAUD1

INTRODUCTION

The major cause of death from melanoma is related to metastasis development, these secondary tumours being resistant to conventional therapies. Determining the metastatic spread of melanoma cells to the regional lymph nodes is essential in the assessment of prognosis and treatment options. Several human melanoma cell lines have been tested in nude rats for the establishment of xenograft models. However, only a limited number of cell lines metastasize in more than 50% of the cases, and only a few xenografts develop in a regional lymph node. Therefore, the development of a novel human xenograft model in immunodeficient rodents (mice and rats) involving metastasis formation in multiple organs is a challenge.

METHODS

Immunocytochemistry analysis of the CMEL-5 cell line

Immunocytochemistry analysis of the CMEL-5 cell line were performed on nude rats using a panel of antibodies to evaluate the metastatic spread of melanoma cells. The CMEL-5 cell line was obtained by in vivo selection for its high capacity to lymph nodes tropism when injected IV to nude mice.

RESULTS

CMEL-5 xenograft in nude rats

CMEL-5 xenografts in nude rats recapitulate the metastatic spreading observed in the human pathology. Only ovarian and bone lesions could be diagnosed with FDG-PET system. These results are in accordance with some clinical literature.

CONCLUSION

CMEL-5 is a novel and well-characterized melanoma xenograft model.

RESULTS

CMEL-5 xenografts in nude rats

CMEL-5 xenografts in nude rats and xenografts of several other melanoma cell lines were established in nude rats. FDG-PET imaging was performed to diagnose and monitor metastasis formation in nude rats.

DISCUSSION

FDG-PET imaging was used to investigate the efficacy of novel therapies in the CMEL-5 melanoma model.

REFERENCES