

Abstract

Development and Characterization of an Ex Vivo Human Skin Model for Melanoma Studies [†]

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Introduction: The development of ex vivo skin tumor models represents a relevant alternative to animal use, allowing the investigation of melanoma progression under physiological conditions closer to human skin. Thus, the aim of this study was to establish a melanoma model based on ex vivo human skin (hOSEC). **Methodology:** SK-MEL-28 melanoma cells (5×10^5) were injected into the superficial dermis of human skin fragments using a 31G needle. After 96 h of incubation, the fragments were fixed, processed, and subjected to H&E staining and immunohistochemistry for the HMB45 and Ki67 markers. Immunodetection was performed using a standard protocol, including albumin blocking, incubation with primary antibodies, followed by peroxidase-conjugated secondary antibody and chromogenic revelation, with evaluation performed by a pathology specialist. **Results:** The ex vivo melanoma model was successfully established, as evidenced by the presence of tumor cells positive for HMB45 and Ki67 in human skin. These findings confirm the integration of tumor cells into the tissue and the maintenance of proliferative activity during the evaluated period. **Conclusions:** It was possible to develop and characterize an ex vivo cutaneous tumor model based on hOSEC, validated by histological and immunohistochemical analyses, representing a promising tool for future studies of human melanoma under conditions closer to skin physiology.



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