COLON CANCER STEM CELLS IMMUNOLOCALIZATION

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INTRODUCTION

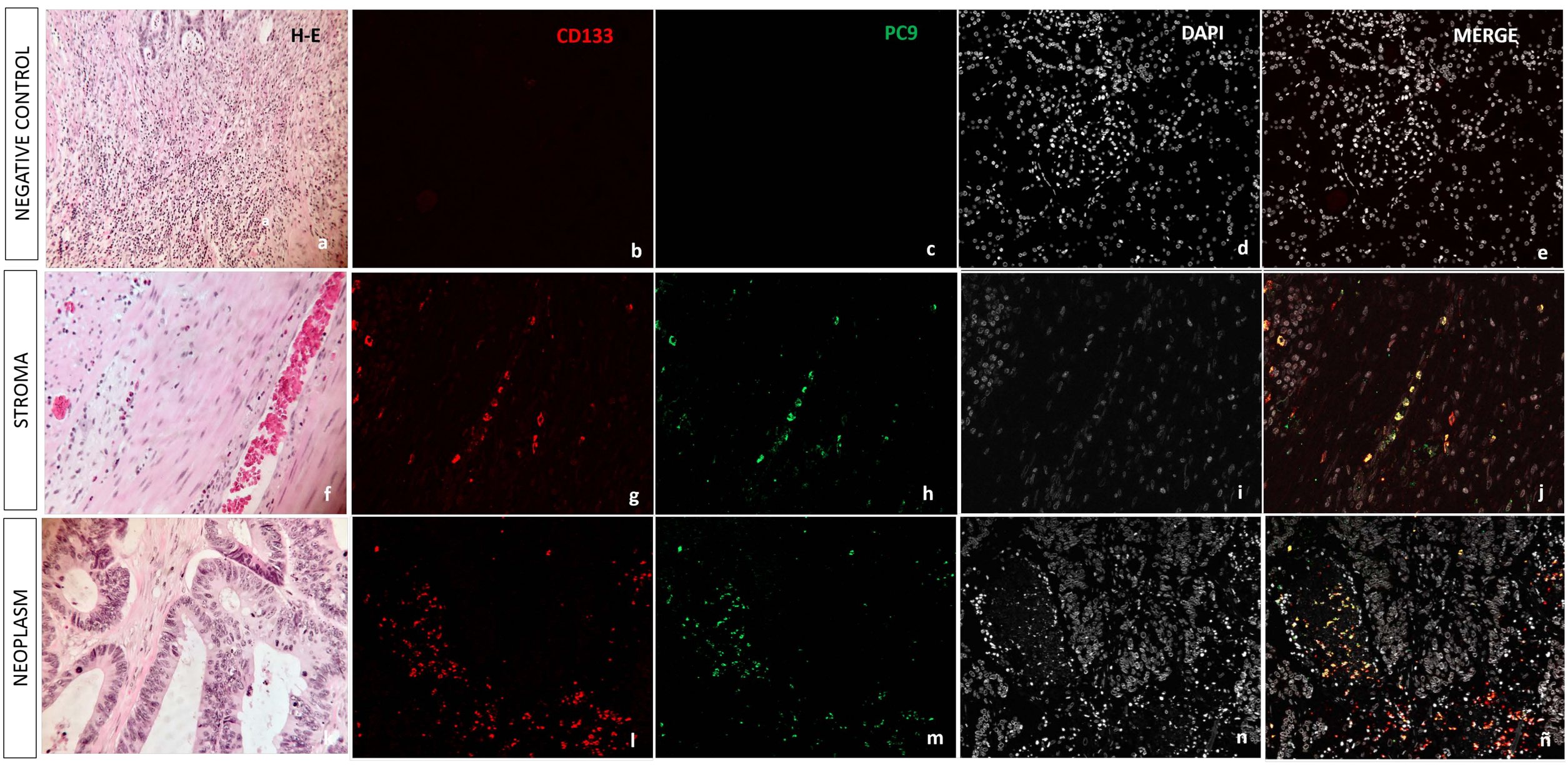
involved in limited proteolysis of secretory protein precursors that are involved in various biological functions, such as development, reproduction, immune response , and in numerous pathologies, including neurological disorders, infectious diseases, dyslipidemias and even cancer. Overexpression of this convertase 9 protein is known to lead to the dysregulation of numerous pathways including those that regulate the cell cycle, apoptosis, and inflammation (1, 2). However, its role in tumor progression is yet to be elucidated.

In this work, we have tracked the expression of PC9 and CD133 the stem cell marker in colon biopsies and liver metastases, in order to know its possible involvement in tumor malignancy.

MATERIAL AND METHODS

Para el estudio llevado a cabo se utilizaron muestras humanas preservadas en parafina a las que se les realizó la técnica de inmunofluorescencia (IF) doble con anticuerpos primarios Cabra anti PC 9 (ab28770) y Conejo anti CD133 (ab19898) y secundarios Burro anti Cabra 488 y Burro anti Conejo 568. Las imágenes a 20 y 40 aumentos fueron obtenidas con el microscopio fluorescente Zeiss Apotome gestionado por software Zen. Se utilizó el software Fiji para cuantificar la señal de IF en imágenes.

RESULTS



Immunohistochemistry images on colon cancer biopsies against PC9 and CD133 (tumor stem cells marker).

(a-e) Negative control for the studied markers on peritumoral fibroinflammatory $_{stroma}$ in the invasion front of the tumor. The HE shows a marked lymphocytic and eosinophilic inflammatory component that attenuates the invasive epithelial border.

(f) HE image of the perilesional collagenic stroma. In it, a small neural tract and venous blood vessel are identified. Marking of (g) CD133 + tumor stem cells is observed, which in turn are marked (h) in green against PC9, these cells colored in yellow by colocalization in the montage image (j) are immersed in a vascular structure due to the edge of surrounding flattened endothelial cells.

(k) Invasive neoplastic glandular conglomerate with marked features of stratification and nuclear atypia as well as occasional mitotic figures. Presence of interstitial-induced collagenic stroma. (l-ñ) Positivity is observed in both markers (m) PC9 and (l) CD133. Note that the number of PC9 + cells in green is a population of the total CD133 + tumor stem cells, since they do not colocalize 100%. Therefore, in the (ñ) montage image, there are cells colored in red and others in yellow where both markers are located

CONCLUSION

The results obtained demonstrate the colocalization of the PC9 protein in CD133 + cells, a marker of tumor stem cells or cells that start new tumors, which are related to the invasiveness of new tissues.In this way, the identification of PC9 as a new marker opens a new path for the investigation of this therapeutic target in cancer treatment.