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A new human uterine cervical mesenchymal stem cell line with potent breast tumor growth-inhibiting properties

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The role of mesenchymal stem cells (MSCs) in tumorigenesis has been widely studied. However, contradictory results r L have been described regarding induced pro- or anti-tumor effects. The present study uses a newly discovered source of MSCs to study breast cancer. MSCs have been isolated from normal human uterine cervix (human uterine cervical stem cells, hUCESCs) by means of routine Pap cervical smears. This method of obtaining hUCESCs provides several advantages. It is much less invasive and painful that those used to obtain other MSCs (i.e. from bone marrow or adipose tissue). In addition, cells can be obtained throughout life, unlike placenta or umbilical cord MSCs, and be isolated in high quantities with a high proliferation rate. After administering hUCESC-conditioned medium (CM) to a highly invasive breast cancer MDA-MB-231 cell line, is obtained a reduced cell proliferation, a modified cell cycle, induced apoptosis, and decreased invasion. Moreover, in a xenograft mouse tumor model, intratumoral administration of hUCESC-CM reduced tumor growth and increased overall survival. These data suggest that hUCESCs could be used in research as to experimental or clinical applications in cancer therapy.

Biography

Noemí Eiró has studied her Bachelor's degree in Biochemistry and Genomic in France and has completed her PhD at the age of 28 years from Oviedo University (Spain). She has worked in the Functional Genomic Unit of the Institut Gustave Roussy (France) and in the Department of Immunology and Oncology of Centro Nacional de Biotecnología (Spain). Currently, she is a Researcher of the Research Unit of the Fundación Hospital de Jove. She is a co-author of 2 patents and has published 19 papers in reputed journals

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