

Full text open access online (Since 2001)

©  Kamla-Raj IJHG 2024

PRINT: ISSN 0972-3757 ONLINE: ISSN 2456-6330

Int J Hum Genet, 24(4): 361-370 (2024)

DOI: 10.31901/24566322.2024/24.04.872

## **Role of the miR-93-5p/SRGN Axis in Proliferation, Invasion and Apoptosis of HER2-positive Breast Cancer Cells**

**Jun Li<sup>1</sup>, Renyuan Ma<sup>2</sup>, Xiaolong Zhang<sup>1</sup>, Yao Jia<sup>1</sup>, Jing Ma<sup>1</sup>,  
Kena Bu<sup>1</sup> and Jianguo Sun<sup>3\*</sup>**

*<sup>1</sup>Second Department of General Surgery, Yulin Xingyuan Hospital,  
Yulin 719000, Shaanxi Province, China*

*<sup>2</sup>First Department of General Surgery, Yulin No. 2 Hospital, Yulin 719000,  
Shaanxi Province, China*

*<sup>3</sup>First Department of General Surgery, Yulin Xingyuan Hospital,  
Yulin 719000, Shaanxi Province, China*

**KEYWORDS** Breast Cancer. Biological Function. Expression. Malignant Transformation. miRNA

**ABSTRACT** This research intended to investigate the biological function of serglycin (SRGN) in breast cancer (BC) with positive human epidermal growth factor receptor 2 (HER2). The expressions of SRGN and micro-ribonucleic acid (miR)-93-5p in HER2-positive BC tissues as well as the target binding sites between them were analysed using bioinformatics software. The propagation, movement, infiltration and apoptosis of these cells were determined by corresponding assays. SRGN had low expression in the cells of HER2-positive BC. Increasing the SRGN expression attenuated the proliferation and metastasis and induced HER2-positive BC cell apoptosis. Molecular assays revealed that miR-93-5p negatively modulated SRGN expression. The overexpressed miR-93-5p in HER2-positive breast cancer cells reversed the role of SRGN overexpression in repressing tumour cells from the aspect of malignant phenotype. To sum up, the miR-93-5p/SRGN axis exerts a pro-metastatic effect on HER2-positive breast cancer, indicating that suppressing this axis may be a new strategy for treatment.