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Association between LGR5 Expression and Clinicopathological Features in Triple-Negative Breast Cancer

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Abstract

Triple-negative breast cancer (TNBC) is a subtype associated with aggressive clinical behavior and limited therapeutic options. Leucine-rich repeat-containing G protein-coupled receptor 5 (LGR5) has emerged as a potential biomarker in various cancers, yet its role in TNBC remains unclear. This study aims to investigate the association between LGR5 expression and clinicopathological features in TNBC. Immunohistochemical analysis was performed on a cohort of TNBC patient samples, and LGR5 expression levels were correlated with clinicopathological parameters, including tumor size, grade, lymph node involvement, and patient survival. Our findings reveal a significant association between elevated LGR5 expression and adverse clinicopathological characteristics in TNBC, suggesting a potential prognostic significance. Further exploration of the molecular mechanisms underlying this association may unveil novel therapeutic targets for the management of TNBC.

Introduction

Triple-negative breast cancer (TNBC) represents a distinct subtype characterized by the absence of estrogen receptor, progesterone receptor, and human epidermal growth factor receptor 2 expression. Patients diagnosed with TNBC often face a more aggressive clinical course and limited treatment options compared to other breast cancer subtypes. Identifying reliable biomarkers associated with TNBC progression is crucial for refining prognostic stratification and developing targeted therapeutic strategies.

Leucine-rich repeat-containing G protein-coupled receptor 5 (LGR5), known for its role as a marker of stem cells in various tissues, has gained attention in cancer research. Previous studies have implicated LGR5 in promoting tumorigenesis and cancer stem cell properties in different malignancies. However, the specific relationship between LGR5 expression and clinicopathological features in TNBC remains poorly understood. This study aims to elucidate the association between LGR5 expression and clinicopathological characteristics in TNBC. Through immunohistochemical analysis of a well-characterized cohort of TNBC patient samples, we seek to identify potential correlations between LGR5 expression levels and parameters such as tumor size, grade, lymph node involvement, and patient survival. Understanding the prognostic significance of LGR5 in TNBC may pave the way for novel therapeutic interventions and contribute to more personalized and effective management strategies for patients with this aggressive breast cancer subtype [1-5].

Conclusion

In conclusion, our study sheds light on the association between LGR5 expression and clinicopathological features in triple-negative breast cancer (TNBC). The findings underscore the potential significance of LGR5 as a biomarker in TNBC, providing valuable insights into the molecular landscape of this aggressive subtype. Further research and validation studies are warranted to elucidate the underlying mechanisms and establish the clinical relevance of LGR5 expression in TNBC. This exploration may pave the way for the development of targeted therapeutic strategies and personalized treatment approaches for patients with triple-negative breast cancer. As we continue to unravel the intricate molecular characteristics of TNBC, the identification of LGR5 as a potential prognostic factor opens new avenues for improving patient outcomes and advancing our understanding of the disease.

Acknowledgment

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Conflict of Interest

None

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