Elevated SOX-9 Expression as a Biomarker for Lung Cancer Progress and Chemotherapy Response: A Combined Analysis of PBMC and Tissue Levels

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Introduction

- Lung cancer, a leading global cause of cancer mortality, urgently requires non-invasive biomarkers to monitor progression and predict chemotherapy resistance(1). SOX9, a transcriptional driver of metastasis and chemoresistance(2), has been studied only in tumor tissue, neglecting its potential in peripheral blood. This study pioneers **dual SOX9 analysis in PBMCs and tumor tissue**, bridging this gap to establish its role as a novel biomarker for real-time monitoring and personalized therapy

Material and Methods

- 30 lung cancer patients and matched healthy controls explored for SOX9 as a dual tissue/blood biomarker.

**Blood** → **PBMCs** → **Real-time qRT-PCR** | **Lung tissue** → → **IHC**

Results

- SOX-9 expression in PBMCs was significantly upregulated in lung cancer patients compared to healthy controls, correlating with disease progression and chemotherapy response.

ROC Curve

Spe. : 90%
Sen. : 96%

- IHC revealed significant overexpression of SOX-9 protein in tumor regions (vs. adjacent healthy tissue), strongly correlating with lung cancer progression.
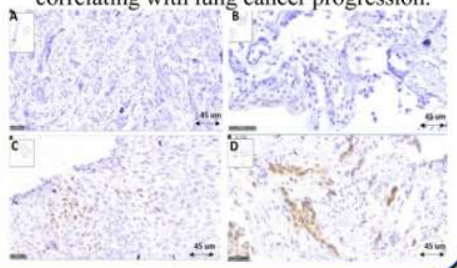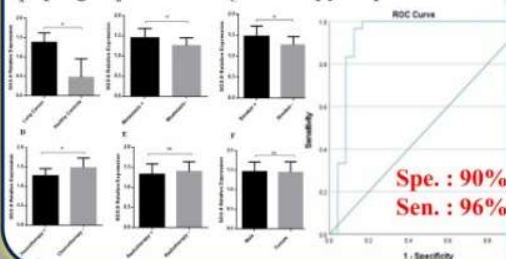
Discussion
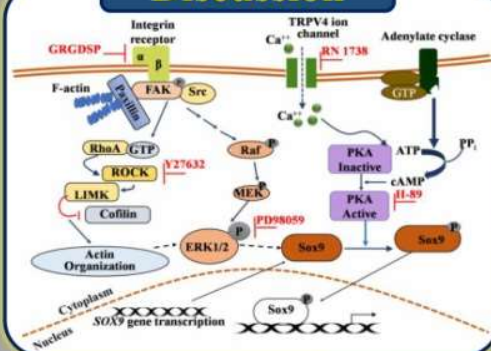
Conclusion

- Combined analysis of SOX-9 in PBMCs and lung tissue identifies it as a precise biomarker for predicting cancer progression, metastasis, and therapy response, enabling personalized treatment strategies.

References

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