Integrative Analysis of Multi-omics and Histopathology Images to Establish a Classification System for Esophageal Squamous Cell Carcinoma

整合多組學和組織病理學圖像建立食管鱗癌分類系統

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ESCC is one of the most aggressive cancers and its low patient survival rate is primarily due to delayed diagnosis. Therefore, early detection of ESCC provides opportunities to implement effective treatment strategies and timely interventions to improve patients' overall outcomes. However, there is currently no clinically viable molecular marker for non-invasive diagnosis of ESCC. In collaboration with City of Hope (USA) and State Key Laboratory of Molecular Oncology (China), we identified candidate microRNAs from three in silico datasets and subsequently developed a panel of 8 circulating miRNAs for non-invasive ESCC detection. We demonstrated the diagnostic performance of the miRNA diagnostic panel in several large, independent, retro-prospective, multinational, multicenter cohorts. While additional validation studies are required to comprehensively evaluate the performance of our classifiers, our miRNA signature has the potential to transform noninvasive diagnosis for ESCC patients in the future.