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Author

Kiss, Sophie, PhD

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Generation Of Patient-Derived Organoids for Assessing Targeted and Immune Therapy in Lung Cancer

Sophie Kiss*, Dennis Montoya, Siqi Long, Tingting Lu, Tianhong Li

Department of Internal Medicine: Hematology/Oncology
University of California School of Medicine

*Corresponding author: zakiss@ucdavis.edu

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Abstract: Lung cancer is currently the most common type of cancer and contributes to the highest mortality rate worldwide. Non-small cell lung cancer (NSCLC) comprises ~75% of all lung cancer and has a broad spectrum of histopathologic, molecular, genomic, and immunological heterogeneity that affect the prognosis and treatment selection. Despite recent advances in screening, diagnosis and treatment, patients with recurrent or metastatic NSCLC inevitably develop resistance to treatment and succumb to metastatic disease. The discrepancy of treatment response between clinical trials and real-world clinical practice clearly indicates the need to generate patient-derived preclinical models that can stimulate the morphologic and genomic features of patient's tumor for selecting personalized targeted and immunotherapy. In our laboratory, we have successfully established patient-derived organoids (PDO) and focus on characterizing these lung cancer PDOs and assessing their translational potential for novel targeted therapies and cancer immunotherapies.

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