CASE STUDY

DOPPL – PERSONALIZED MEDICINE IN ACTION

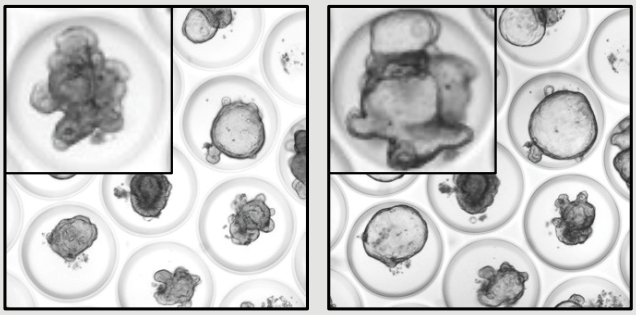
Problem – Challenge

Personalized medicine presents both promising opportunities and significant challenges in the realm of healthcare. Tailoring medical treatments to an individual's unique genetic makeup, lifestyle and environment holds the potential to revolutionize patient care, leading to more effective and targeted treatments. While genetics plays a crucial role in personalized medicine, it has proven not sufficient on its own. While genes can provide valuable insights into predispositions, they do not account for the full complexity of health outcomes. Interactions between multiple genes are often intricate and not fully understood. Genetic testing may reveal certain risk factors, but it remains a mere prediction to disease development and outcome. The hurdle is to develop a laboratory test to predict patient-specific treatment responses based on genetic information.

Solution

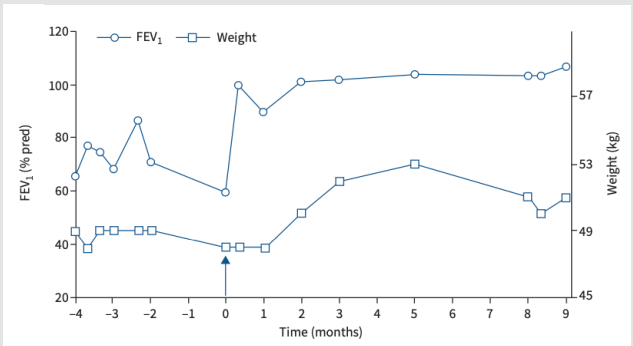
DOPPL is a 2022 spin-off of SUN bioscience with a business focus on the application of organoids in pharmaceutical pre-clinical testing and clinical personalized medicine strategies. Organoids have emerged as a powerful tool in the field of personalized medicine, offering the potential to revolutionize how we approach disease treatment.

In the first case study in Switzerland, DOPPL worked with the University Hospital of Lausanne (CHUV) and EPFL on organoid guided treatment prescription for Cystic Fibrosis (CF) patients suffering from rare and poorly characterized mutations that are not eligible for modern CF medications. Based on organoid data generated by DOPPL, a young CF patient was prescribed a CF modulator medication, that within the course of 10 days, lead to a complete restoration of lung function.



Case study of a complete restoration of lung function following organoid-guided treatment with a CFTR modulator in a patient with the rare 1677delTA/R334W genotype.

Patient organoids before and after CF medication screening.



Evolution of lung function and body weight over time. The black arrow indicates the date of CF treatment start.