**BioMedix Lab**

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**Who are we?**

We are BioMedix Lab, a multidisciplinary research team committed to advancing personalized medicine. Our team brings together experts from molecular biology, bioinformatics, and biomedical engineering to develop innovative solutions for complex medical challenges.

**Our projects**

* Integration of molecular biology, bioinformatics, and advanced imaging techniques to study disease mechanisms and develop targeted therapies.
* Utilization of cutting-edge technologies such as genome editing, organ-on-a-chip systems, and AI-driven data analysis to bridge the gap between fundamental research and clinical applications.

**Methods and competences**

* Application of genome editing technologies like CRISPR-Cas9 to investigate genetic causes of diseases.
* Development of organ-on-a-chip systems as precise and ethical alternatives to animal testing.
* Use of advanced data analytics and machine learning to identify new biomarkers.
* Close collaboration with clinical and industrial partners to translate research findings into real-world applications.

**Collaborations**

* Identification of genetic drivers of rare autoimmune diseases in collaboration with the University of Heidelberg.
* Development of a microfluidic chip to model the tumor microenvironment in partnership with NanoBioTech Innovations GmbH.
* Creation of machine learning tools for early cancer detection in cooperation with the European Institute of Bioinformatics.

**Selected publications**

1. Smith, J. et al., (2023). "CRISPR-Enhanced Organ Chips for Cancer Research." Nature Biotechnology.
2. Müller, P. et al., (2022). "AI-Driven Genomic Insights into Autoimmune Diseases." Cell Reports.
3. Novak, L. et al., (2021). "Microfluidics in Biomedical Research: Opportunities and Challenges." Trends in Biotechnology.