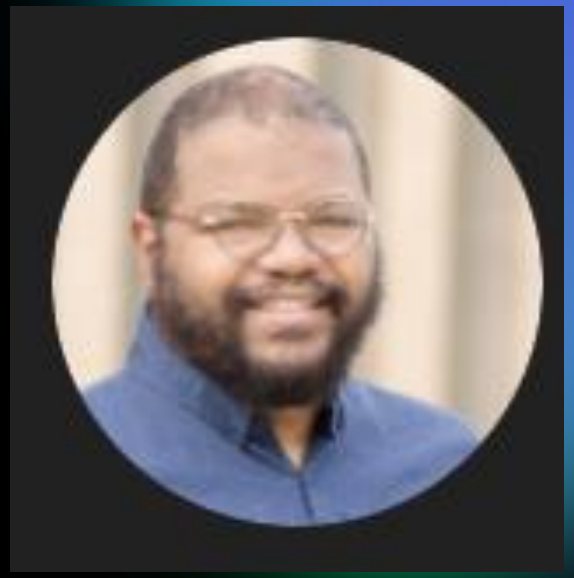

Targeting Mitochondrial Respiration to Overcome Therapy Resistance Acute Myeloid Leukemia

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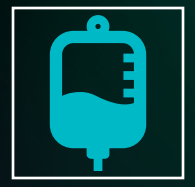
Introduction

- Acute Myeloid Leukemia (AML) – A type of blood cancer
  - Due to undeveloped white blood cells produced in the bone marrow
- As for right now the frontline cure Chemotherapy achieves high remission rates but 70-80% relapse or wouldn't not respond the the initial therapy.

Current AML Therapy



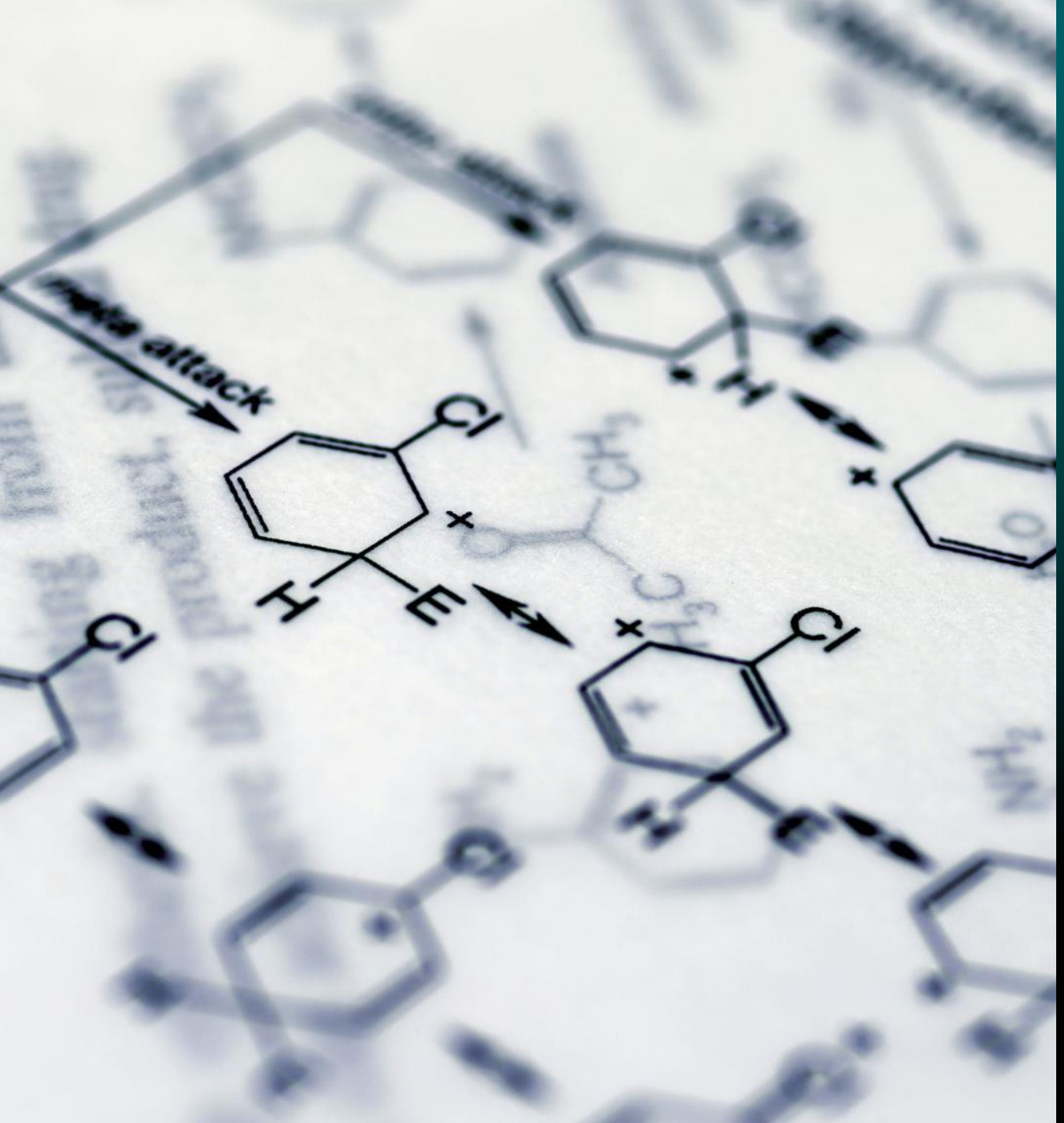
Chemotherapy

Consolidation Therapy

Supportive Care

Stem Cell Transplantation

Targeted Therapy

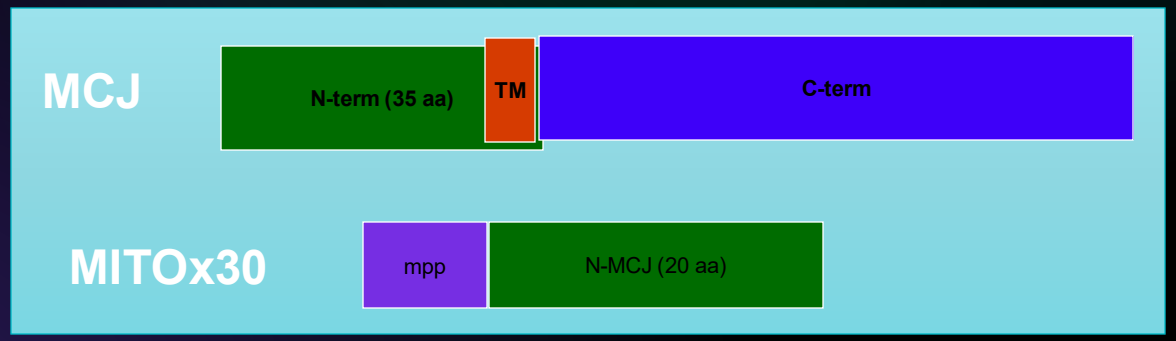


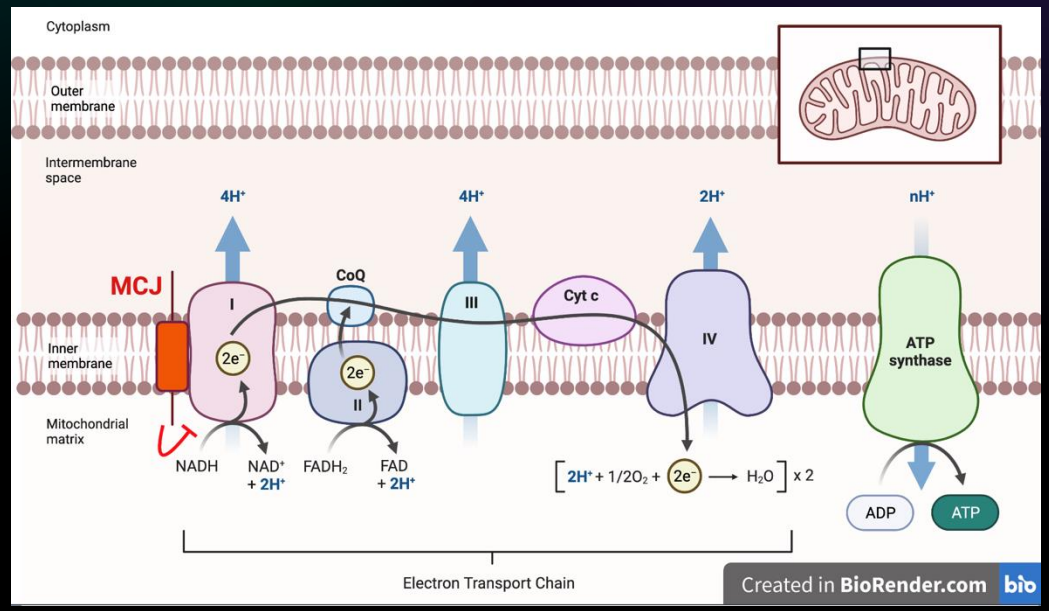
Introduction

- For this research 2 type of drugs are used to see its reaction
  - Venetoclax + Azacitidine (VenAza)
  - MCJ Peptide (MITOx30)
-

Introduction

- Methylation- controlled J protein (MCJ) – made by DNAJC 15 gene
  - MCJ acts as a “break” it slows down mitochondrial respiration , when MCJ is missing it could cause the resistance of chemotherapy





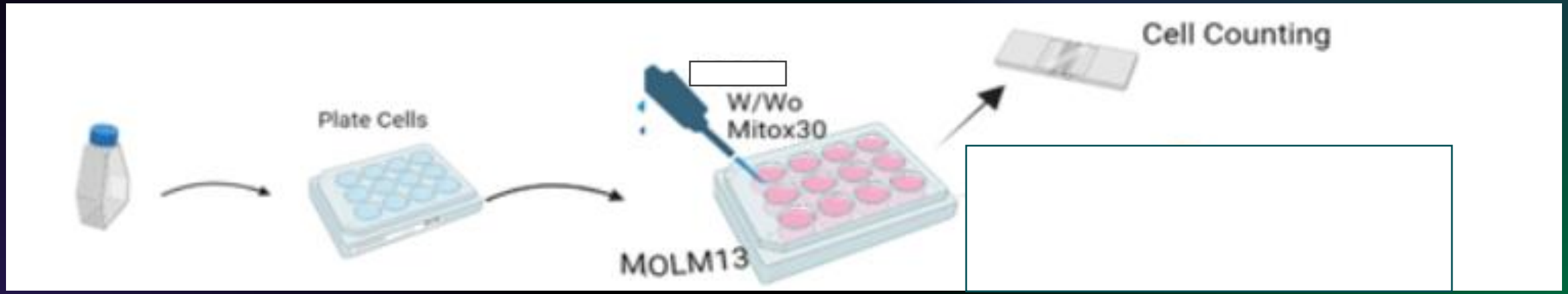
Hypothesis and objective:

- Hypothesis: The integration of **MCJ mimetics** will restore MCJ function and augment the effectiveness of the chemotherapeutic drugs, such as Venetoclax and Azacitidine.

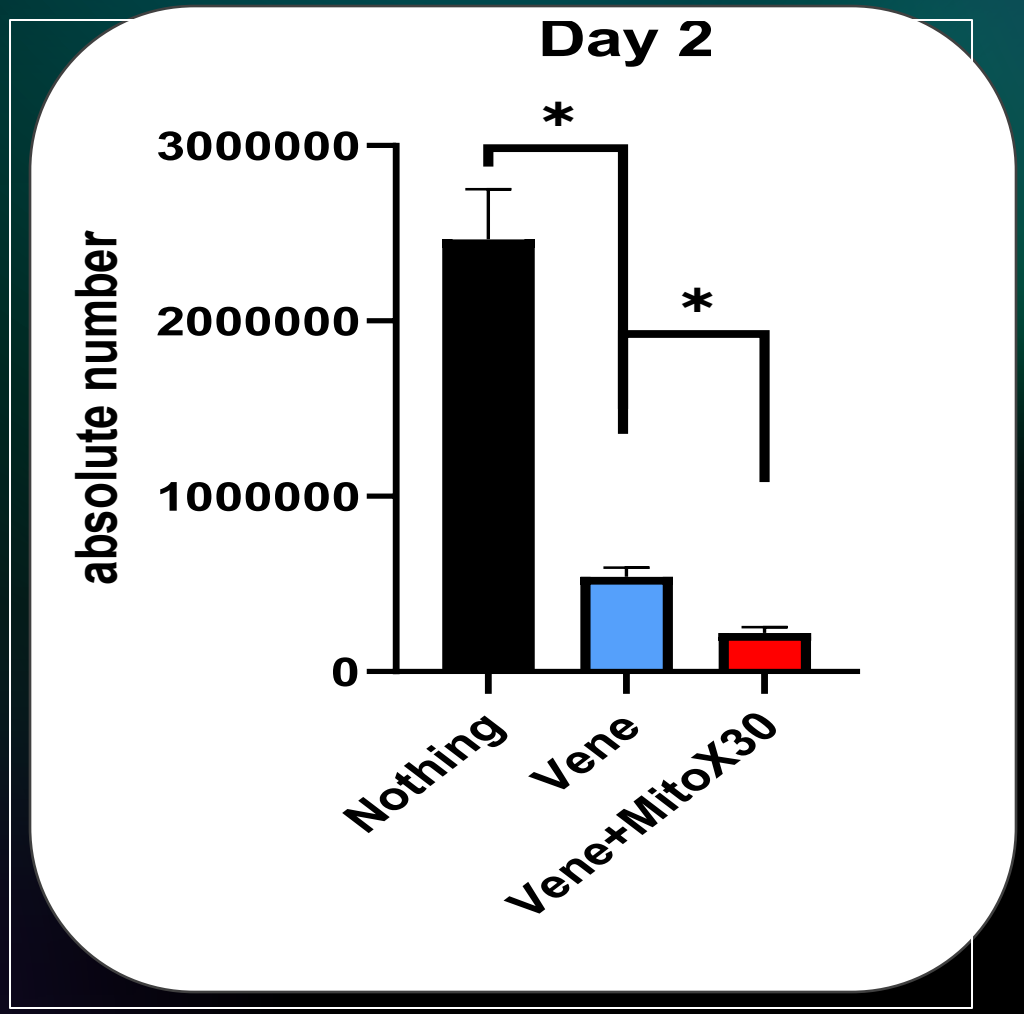
- Aim 1: Investigate the effect of MCJ peptide **(Mitox30)** when combined with Venetoclax + Azacitidine (VenAza).

Methods

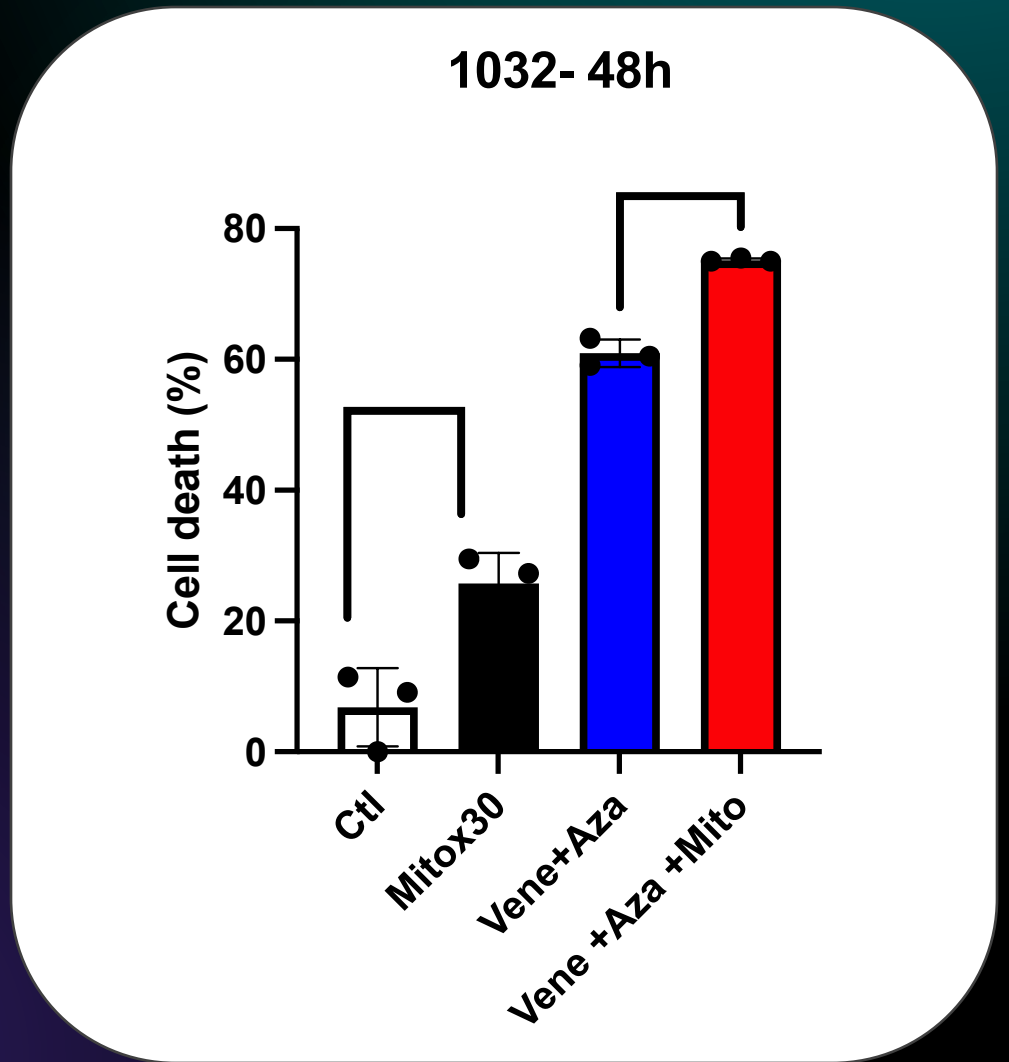
- For this research two type of cells
  - Primary and MOLM-13 cells
- Primary Cell
  - Comes directly from patients who are resistant
- Molm-13 Cells
  - The MOLM-13 cell line is a human acute myeloid leukemia (AML) cell line that was initially established in 1986 by the Rolf Marschalek lab.

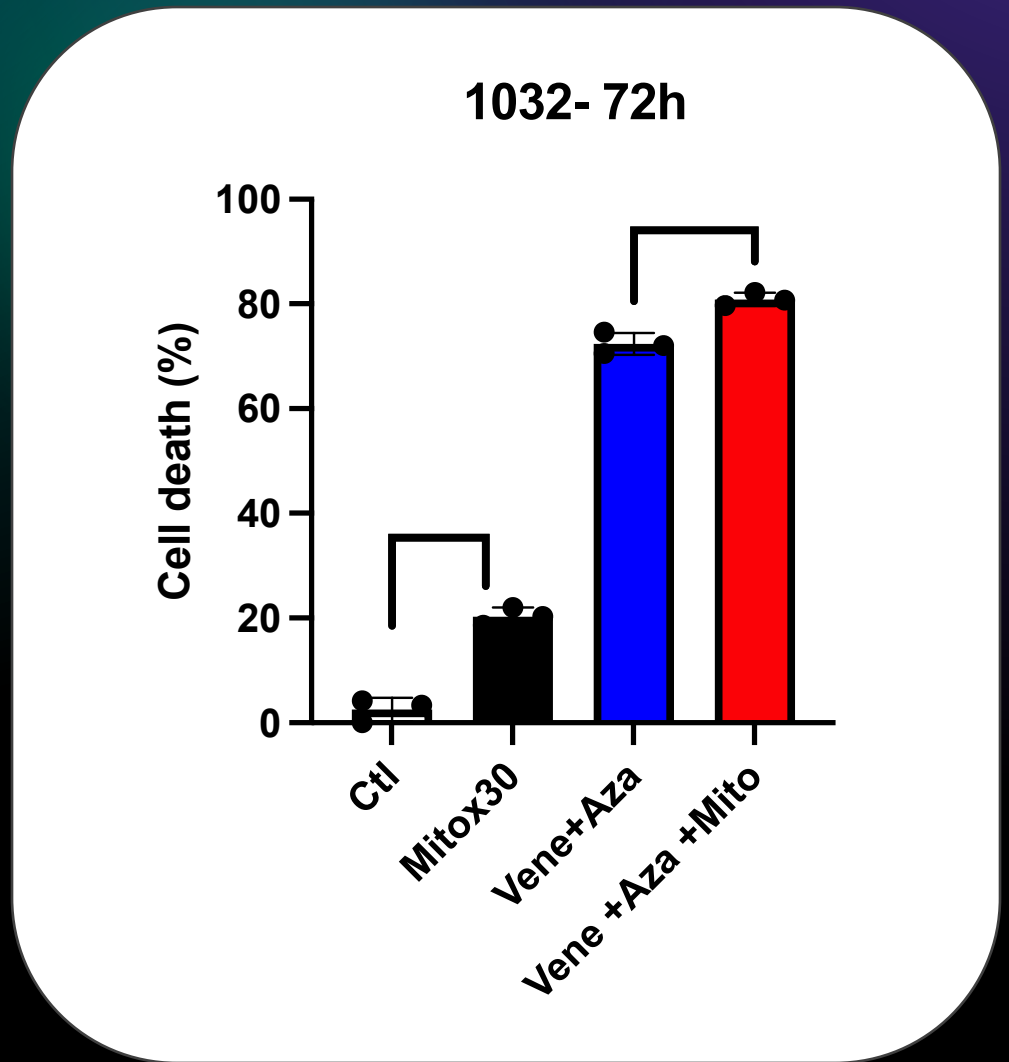


MCJ peptide (mitox30) and Venetoclax synergy increases MOLM-13 Cell Death



MCJ peptide (MitoX30) increases the response to VenAza in the primary AML cells





Limitations

- Heterogeneity of AML
- Bone Marrow Microenvironment
- Clonal Evolution
- Immunological Evasion
- Chemotherapy Resistance
- Targeted Therapy Resistance

Cultural Exchange

Language is very similar

Similar cultural Experience

Education Very different from here

Tried Japanese food

Thank You!!!!!

- Mercedes Rincon
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- Fahiima Abdullahi
- Qian Fang
- Maureen Hoen
- Cristina Cenciarelli