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The fungicide cyproconazole induces immunotoxicity in human lymphocytes by disrupting regulatory B cell function and promoting T cell senescence

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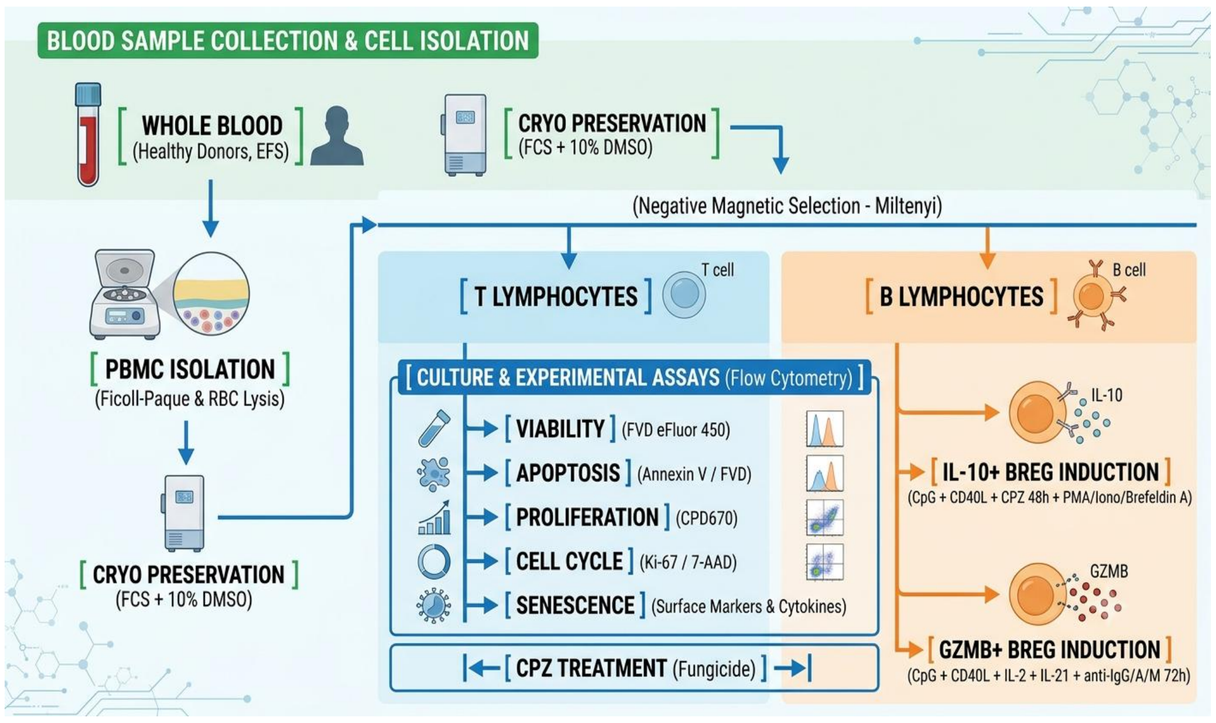
INTRODUCTION & AIM

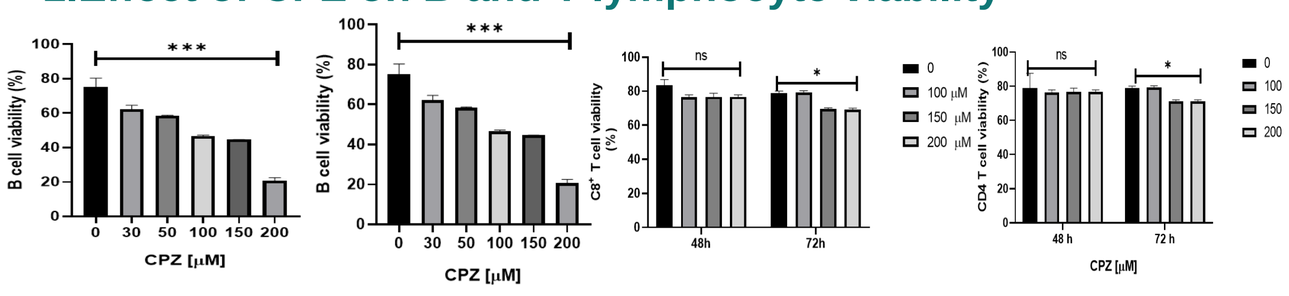
The widespread agricultural use of triazole fungicides raises concerns about their potential impact on human health [1]. Cyproconazole (CPZ) is one such fungicide whose immunotoxic effects are poorly characterized.This study investigated the mechanisms of CPZ-induced immunotoxicity in primary human immune cells, focusing on its impact on regulatory B cell (Breg) function and the induction of cellular senescence

METHOD

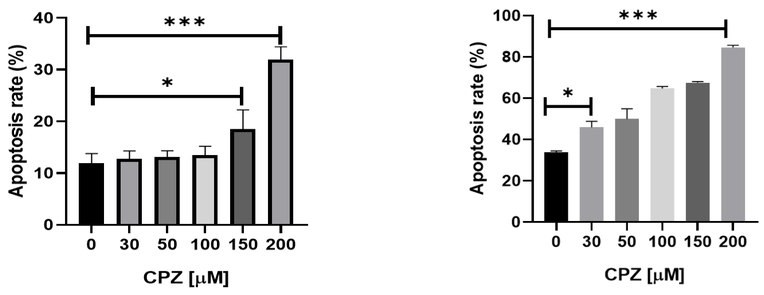


RESULTS & DISCUSSION

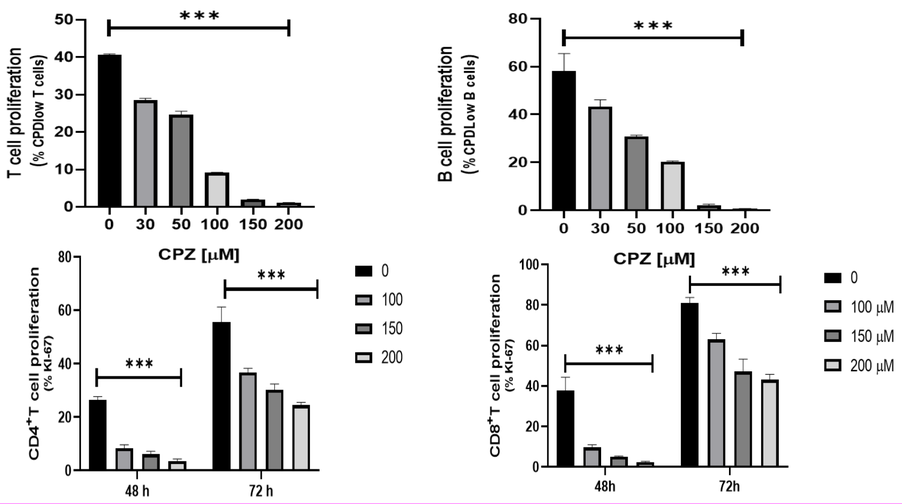
1.Effect of CPZ on B and T lymphocyte viability



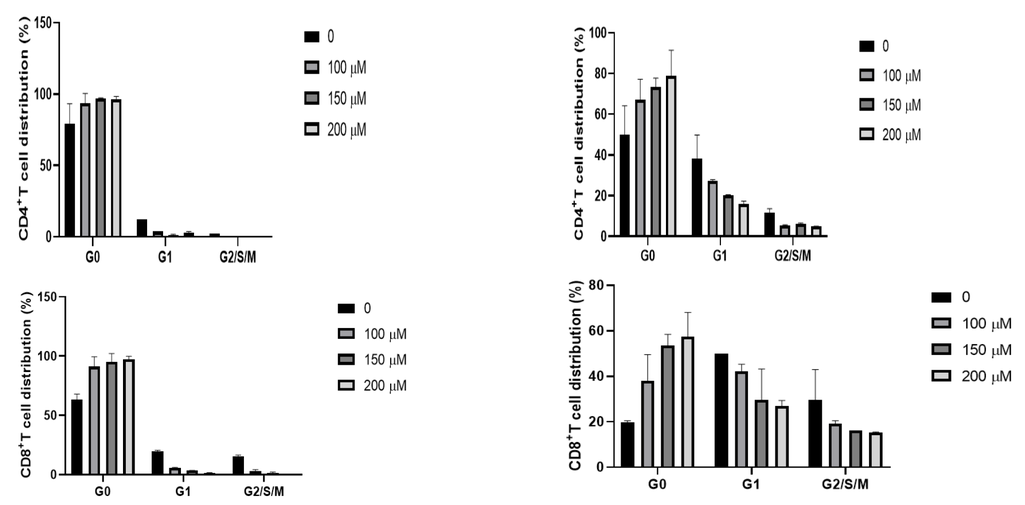
2.Effect of CPZ on lymphocyte apoptosis



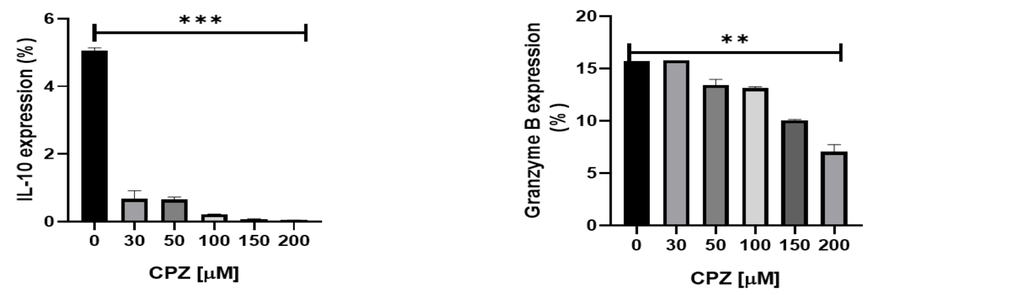
3.Effect of CPZ on B and T lymphocyte proliferation



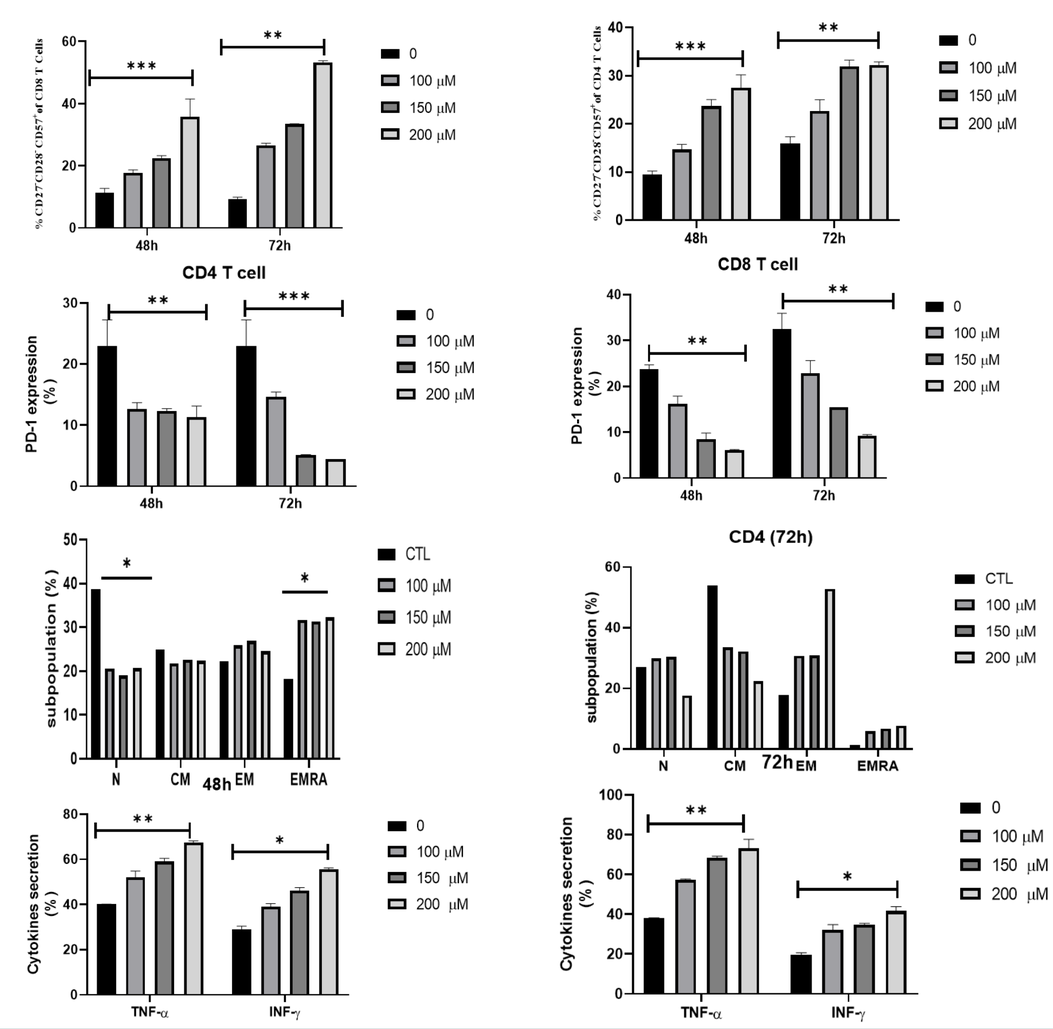
4. Effect of CPZ on T lymphocyte cell cycle



5.Effect of CPZ on lymphocyte B regulatory function



6.Effect of CPZ on lymphocyte T senescence



CONCLUSION

CPZ fundamentally alters lymphocyte homeostasis through distinct yet interconnected mechanisms including differential cytotoxicity, cell cycle arrest, regulatory cell dysfunction, and senescence induction. These findings demonstrate the complex immunotoxic potential of triazole fungicides

FUTURE WORK / REFERENCES

[1]: A.Mokarizadeh,M.R Faryabi, M.A Rezyanfar, M.A. Abdollahi, Comprehensive review of pesticide and immune dysregulation mechanisms, evidence and consequences, Toxicology Mechanisms and Methods 25 (2015) 258-278.