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Propionibacterium acnes extract improves cellular response against *Candida albicans* and *Escherichia coli* in *in vitro* models of vulvovaginal infections

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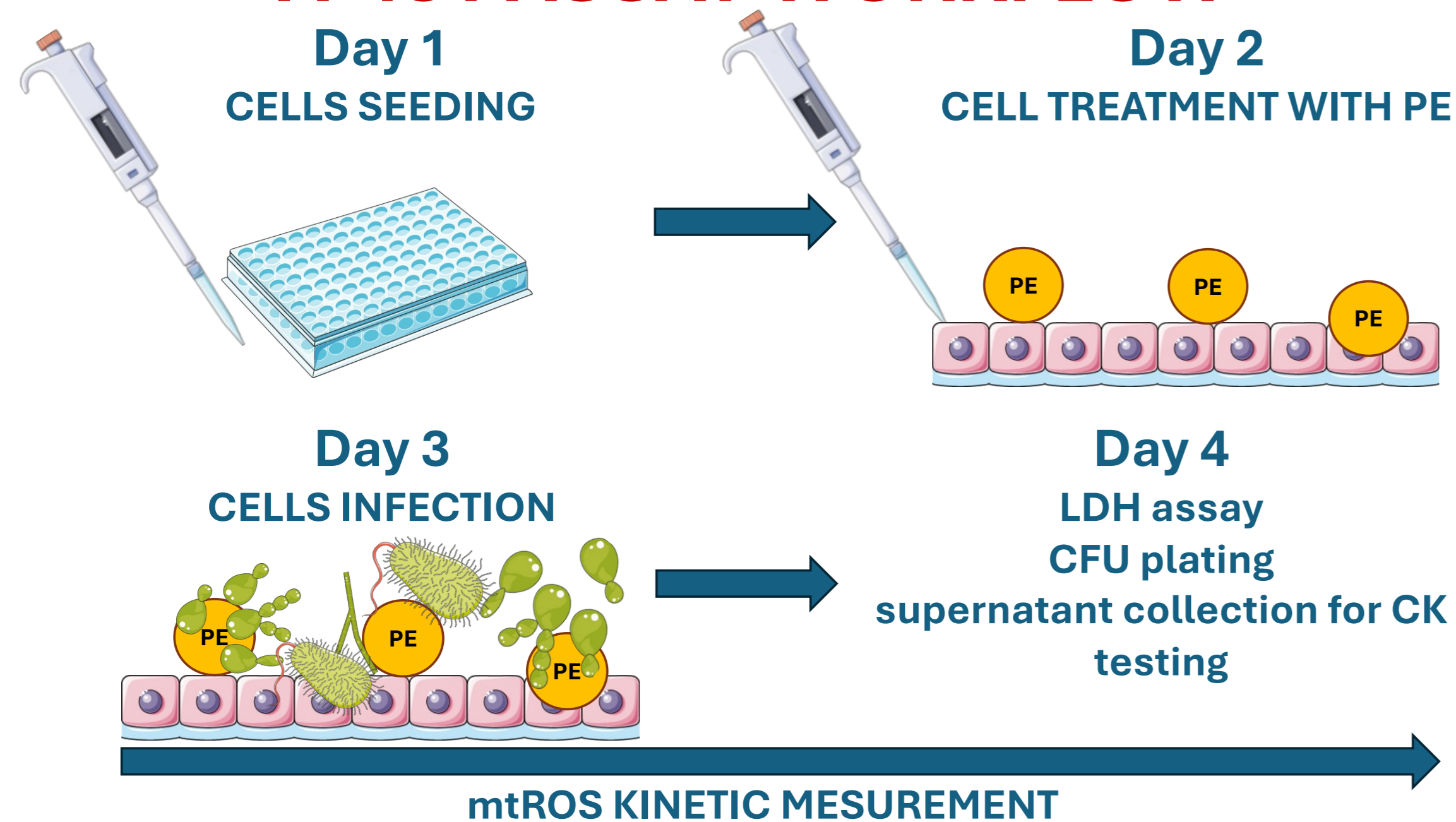
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INTRODUCTION

The *Propionibacterium acnes* extract (PE) is a **bacterial lysate** included as an active compound in a gel formulation used to treat the **symptoms of vaginitis**. It is produced and commercialized by **DEPOFARMA S.p.a.**. Here, we analysed its effect in *in vitro* model of vaginal epithelial cells (A-431) and murine macrophages (J-774) infected by *Candida albicans* (*C. albicans*) and *Escherichia coli* (*E. coli*).

A-431 ASSAY WORKFLOW



J-774 ASSAY WORKFLOW

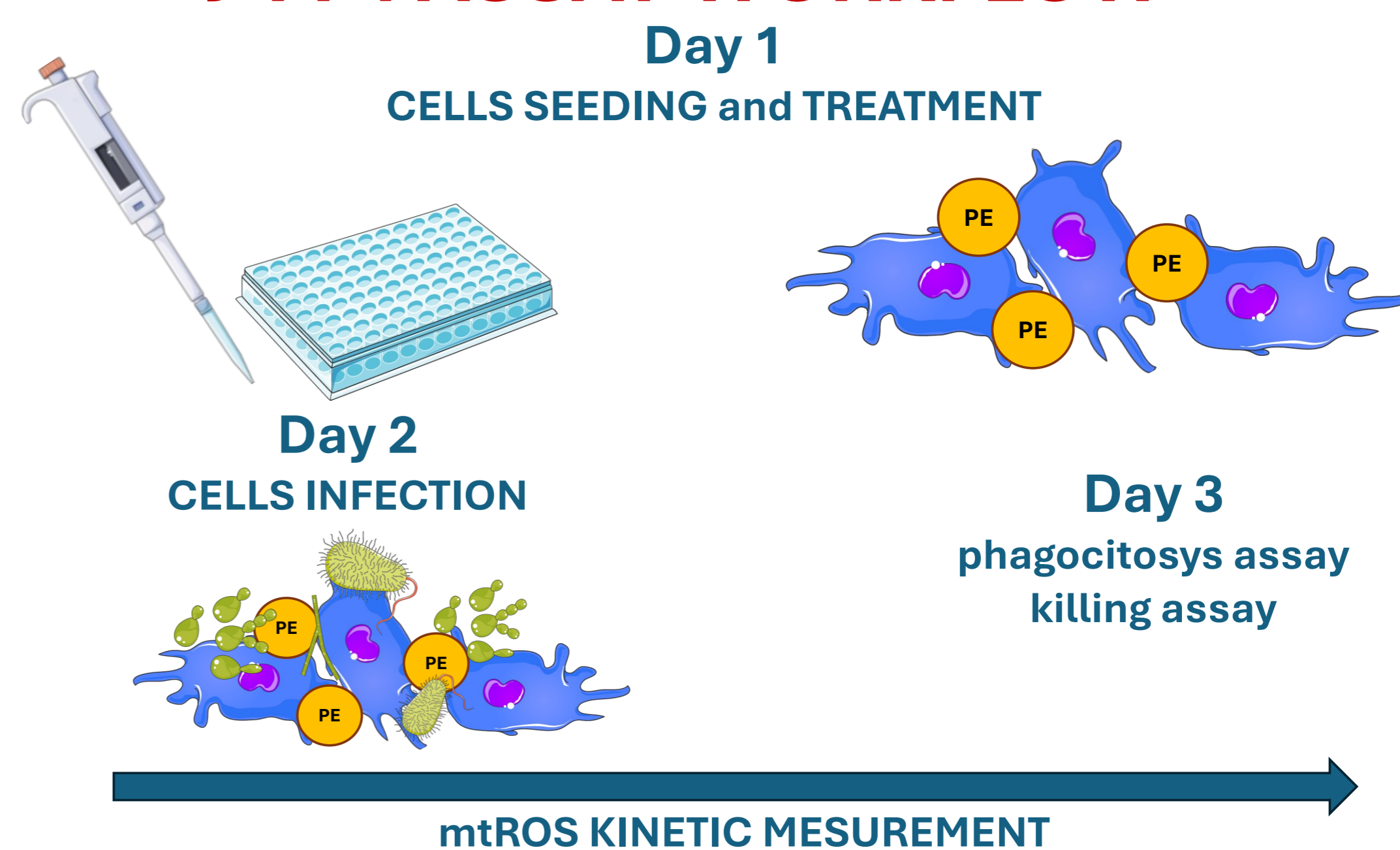


Figure 1: A-431 RESULTS

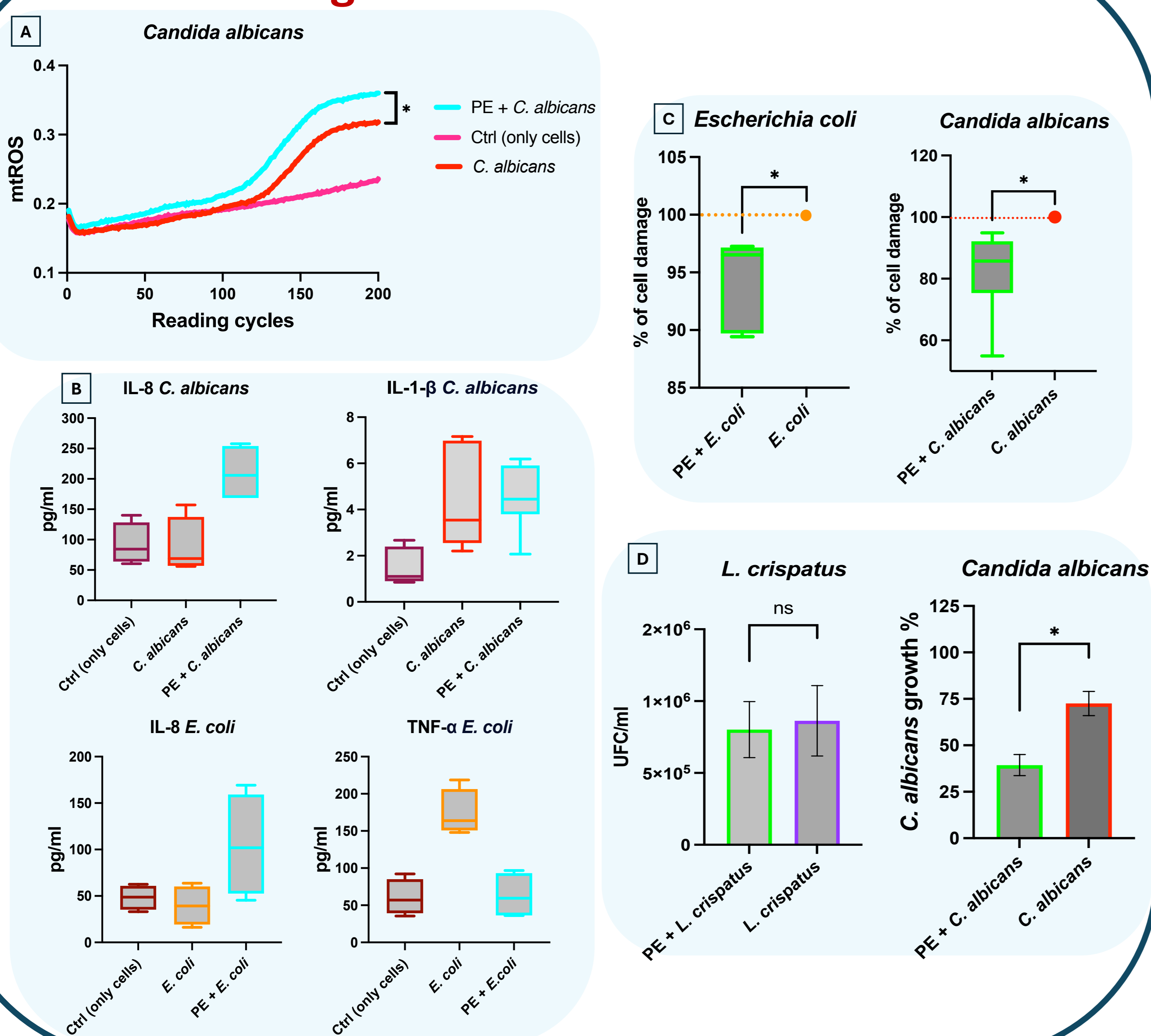
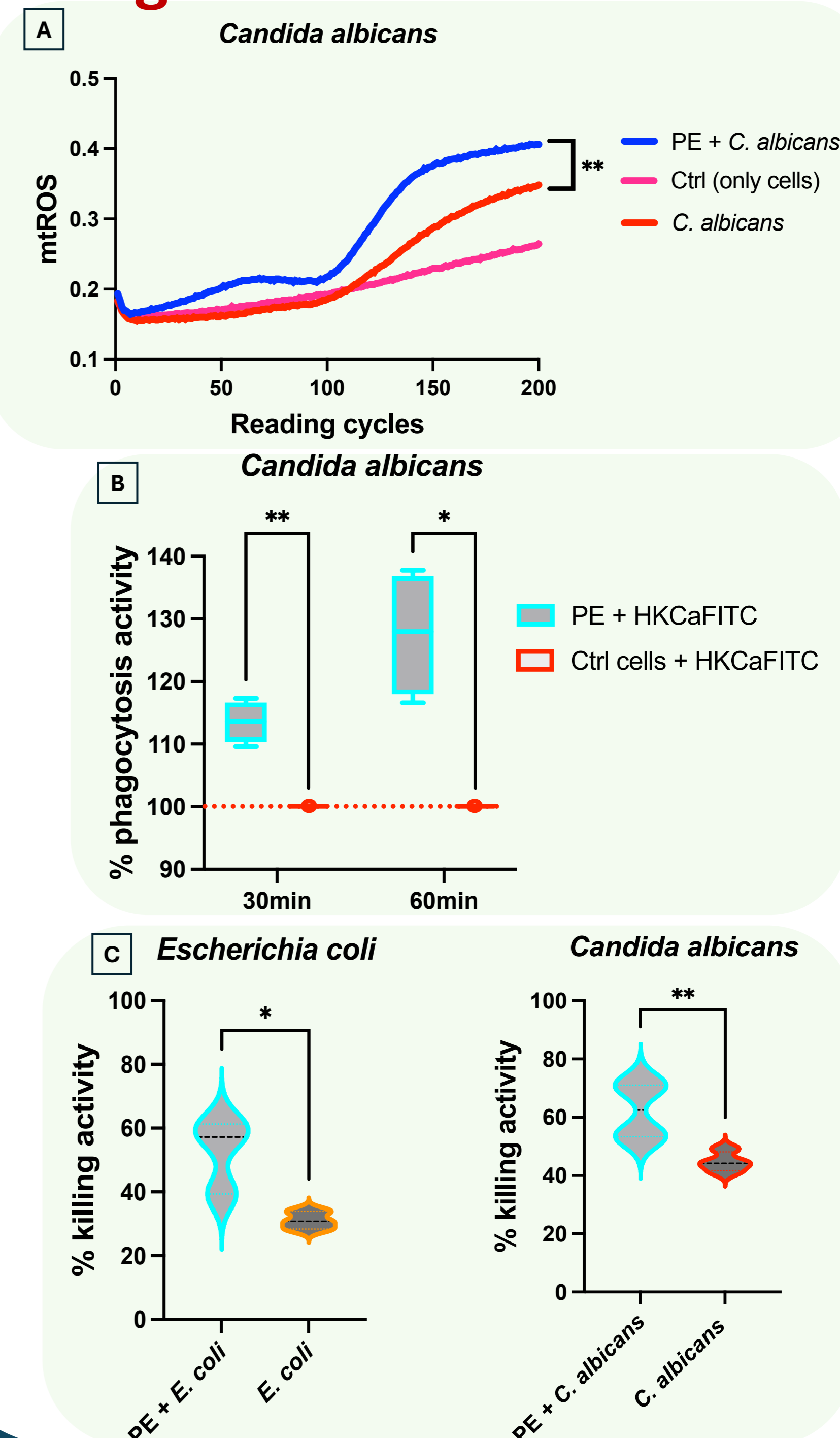


Figure 2: J-774 RESULTS



DISCUSSION AND CONCLUSIONS

Our results show that PE i) **increases mitochondrial activity** of vaginal epithelial cells and macrophages in response to *C. albicans* infection (Fig. 1-A, Fig. 2-A); ii) **protects the cells against pathogens-induced damage** (Fig. 1-C); iii) during cells infections, **reduces *C. albicans* growth but not that of *L. crispatus*** (Fig 1-D); iv) **increases effectiveness of phagocytosis** (Fig. 2-B) and **killing activity** (Fig. 2-C) by macrophage. Moreover, PE **increases IL-8 release** during the infection of both pathogens and **decreases TNF-alpha** throughout *E. coli* infection and **IL-1-β** during *C. albicans* infection (Fig. 1-B).

Taken together, our results suggest that LB may improve cellular response therefore helping to improve the response against pathogens.