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Study of anti-resistance and anti-virulence effects of two antimicrobial molecules on Gram positive pathogens

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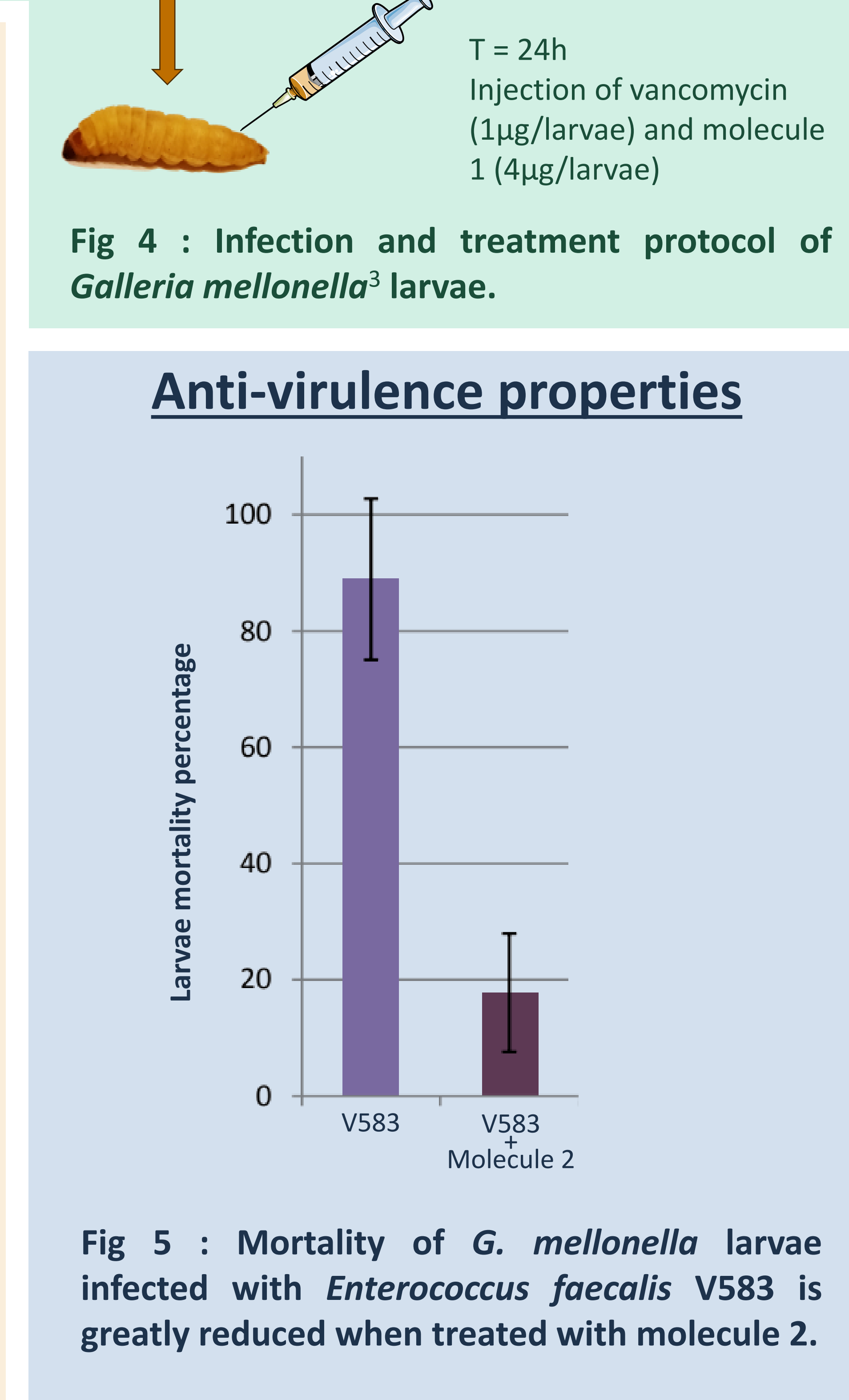
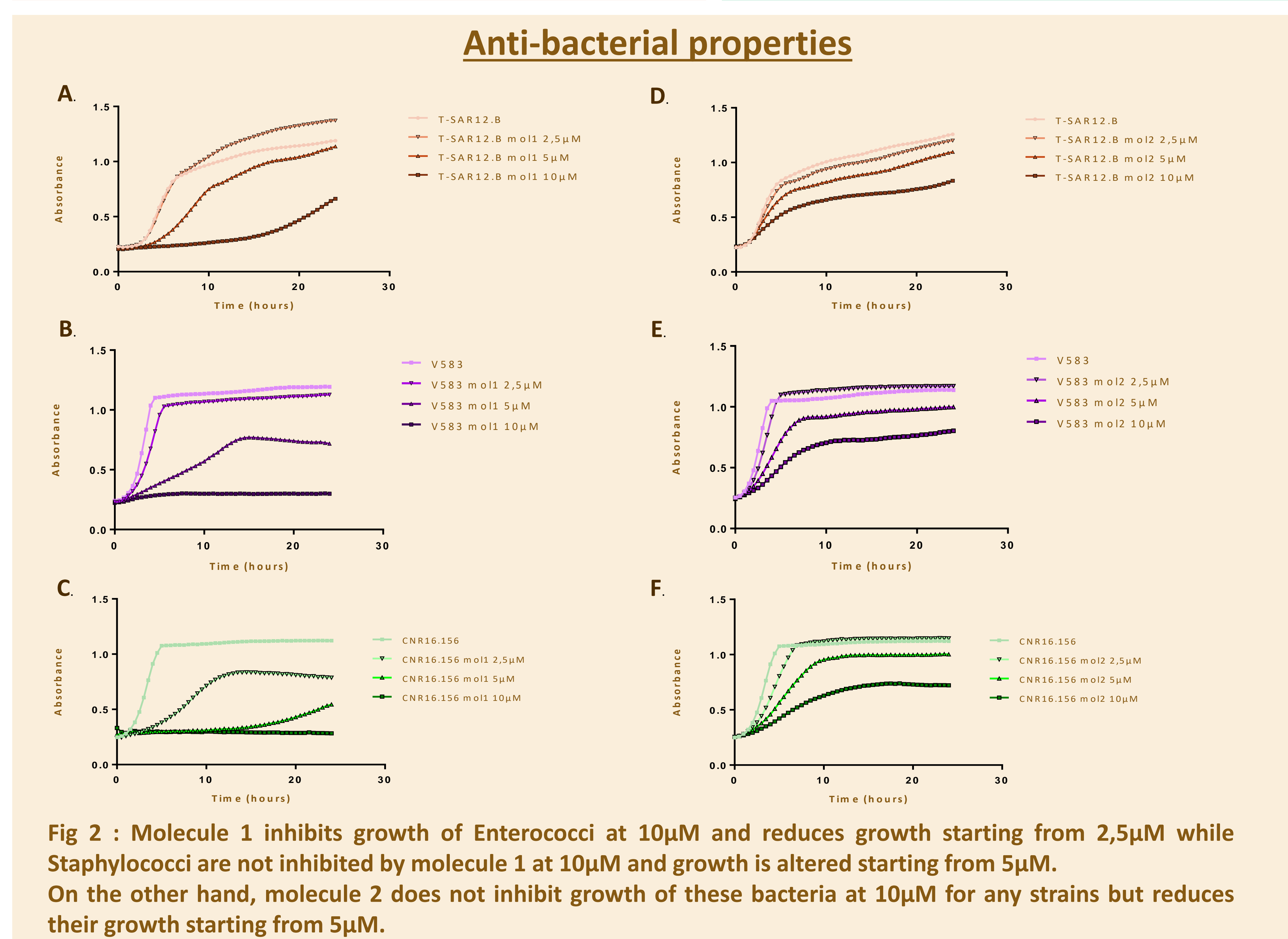
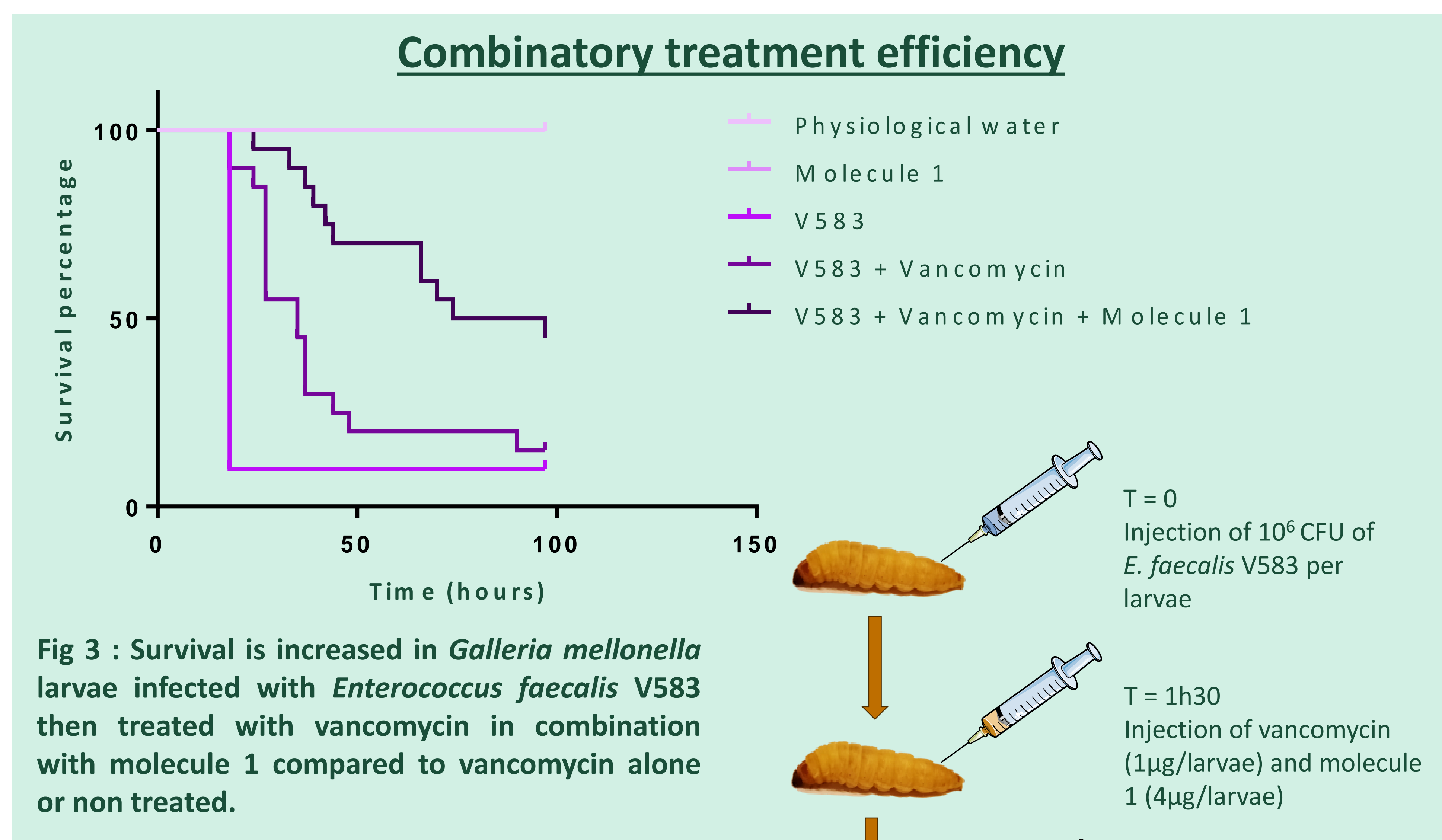
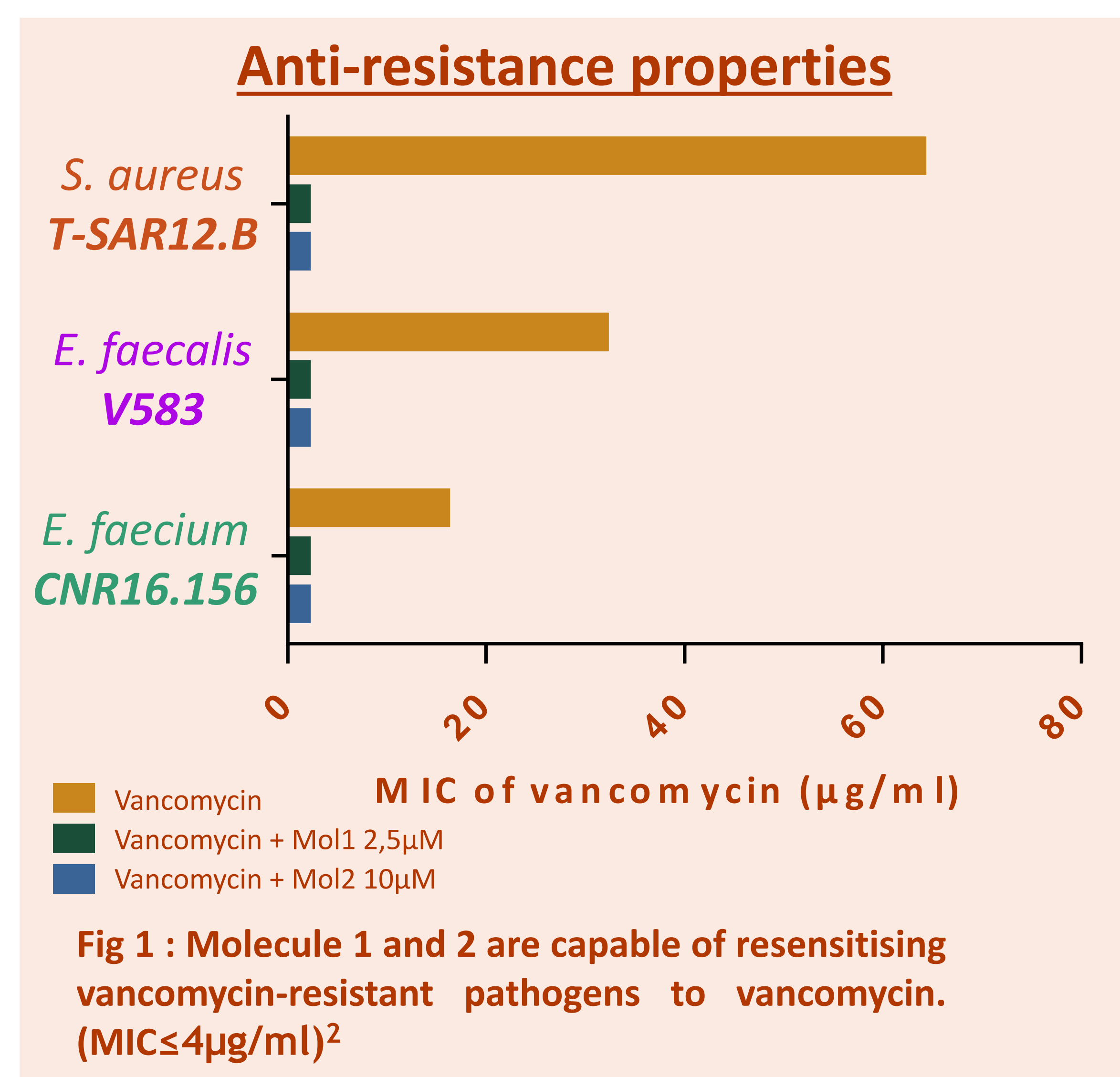
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Introduction and objectives

Enterococci and Staphylococci are responsible for many healthcare associated infections¹. These microorganisms harbor different antibiotic resistances, including vancomycin. These Enterococci and Staphylococci are respectively called VRE and VRSA. Patients infected with VRE or VRSA are left with few treatment options. In this context, two molecules with anti-resistance and anti-virulence effect to vancomycin on VRE and VRSA are studied. Our goal is to investigate the efficacy of these molecules as a potential treatment to cure VRE and VRSA infections.

Results



Conclusion

Molecules 1 and 2 have shown their efficacy to resensitize VRE and VRSA to vancomycin *in vitro* and *in vivo* in a *Galleria mellonella* larvae model. These molecules decrease growth of VRE and VRSA and only molecule 1 totally inhibits growth at high concentration. This low bactericidal action prevents a high selection of resistant bacteria, allowing them to be used as anti-virulence treatment. Further analysis need to be done on these molecules to unravel their mode of action and use them as an alternative treatment to conventional antibiotics.