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Candida and *P. gingivalis* inhibit wound closure *in vitro*.

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Background

- Bacteria and fungi play a role in oral mucositis after cancer therapy.
- *P. gingivalis, C. glabrata* and *C. kefyr* are positive predictors for the presence of oral ulcerations (Laheij et al, 2012).
- *P. gingivalis* strongly inhibits cell migration *in vitro* (Laheij et al, 2013).

Aims

1. The effect of *C. glabrata* and *C. kefyr* on wound closure.
2. The effect of a mixed infection of *C. glabrata* or *C. kefyr* and *P. gingivalis* on wound closure.

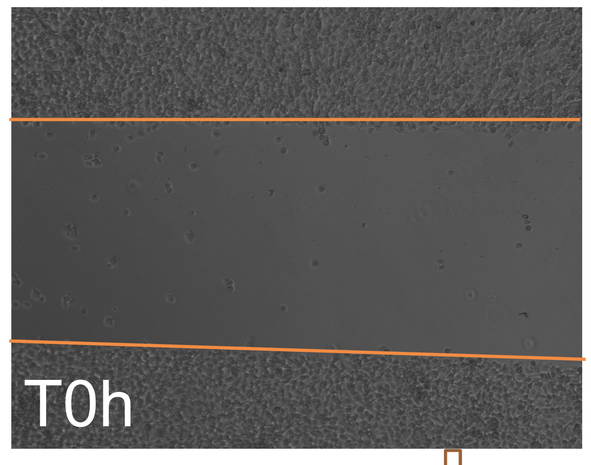
Conclusion

1. Viable *C. glabrata* and *C. kefyr* inhibit wound closure.
2. A mixed infection of *C. glabrata* or *C. kefyr* and *P. gingivalis* inhibits wound closure stronger than one of both microorganisms separately.

Materials and Methods – *In vitro* scratch assay

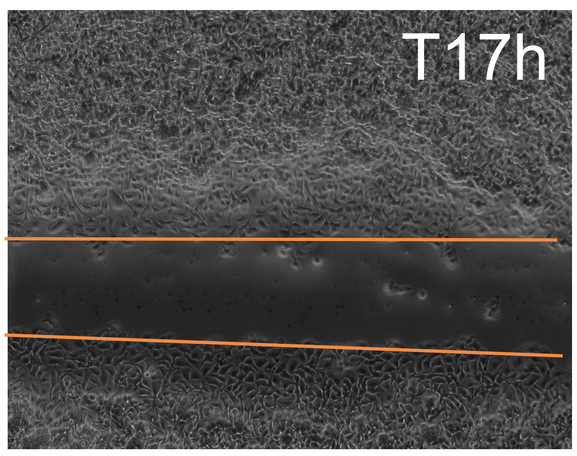
1. Human buccal epithelial cancer cell line H01N1 was cultured and seeded in 24-wells plates.

2. A scratch was made in a monolayer of cells using a blue pipette point and a photograph was taken.



3. Bacteria & fungi were added to the epithelial cells in different concentrations.

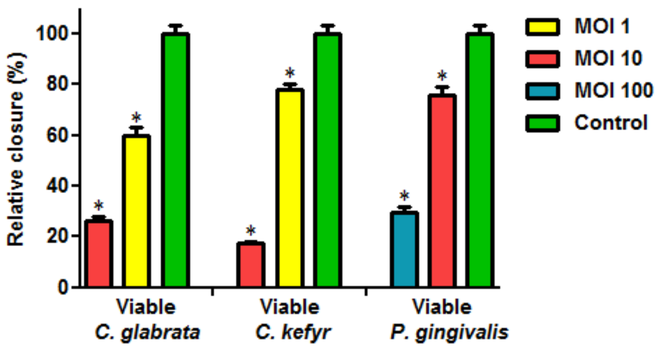
4. After 17 hours a new photograph was taken and the relative closure of the scratch was calculated.



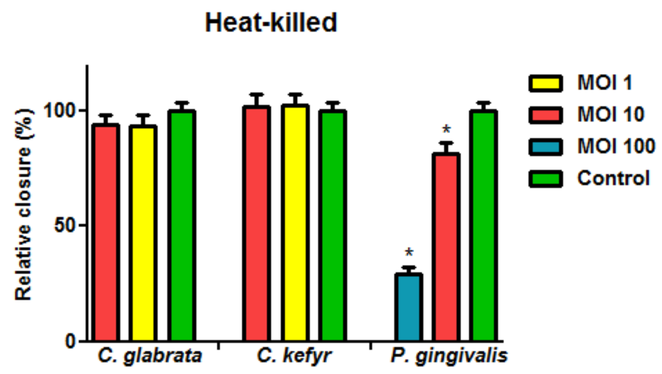
Bacterial strains
- *P. gingivalis* ATCC 33277
- *C. glabrata* CBS 138
- *C. kefyr* CBS 1970

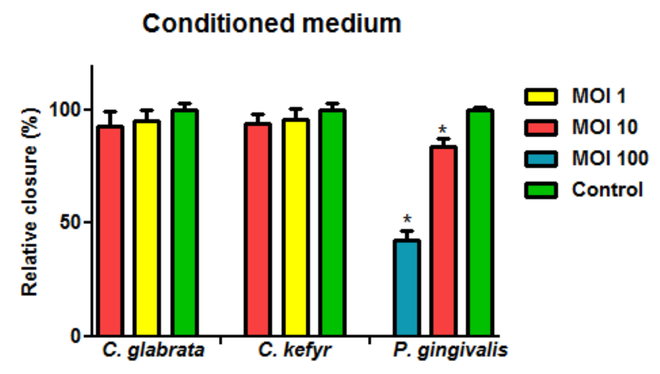
Results

1. Viable *C. glabrata* and *C. kefyr* inhibit wound closure *in vitro*.

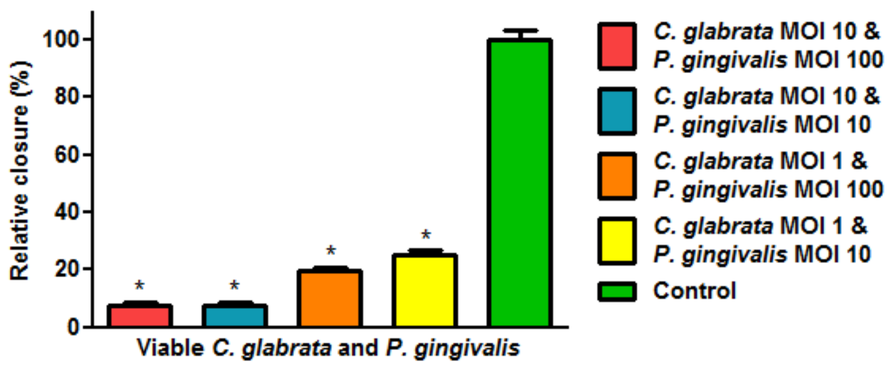


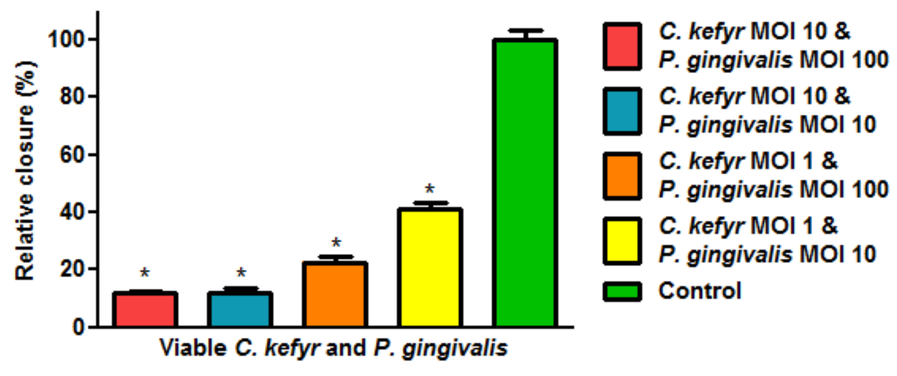
No effect was observed from heat-killed *Candida* and conditioned medium.



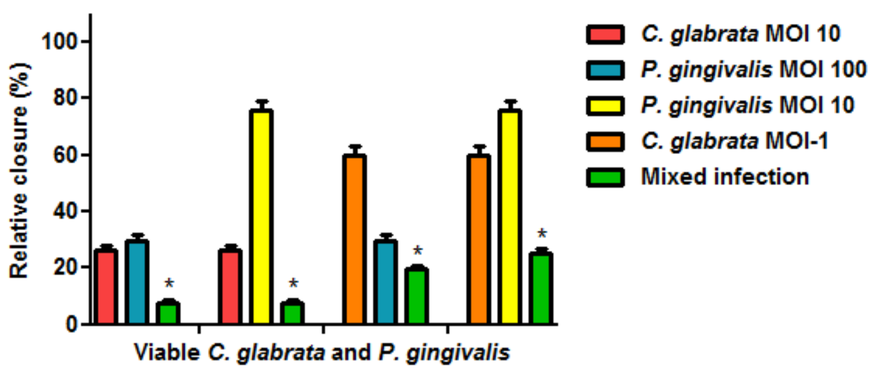


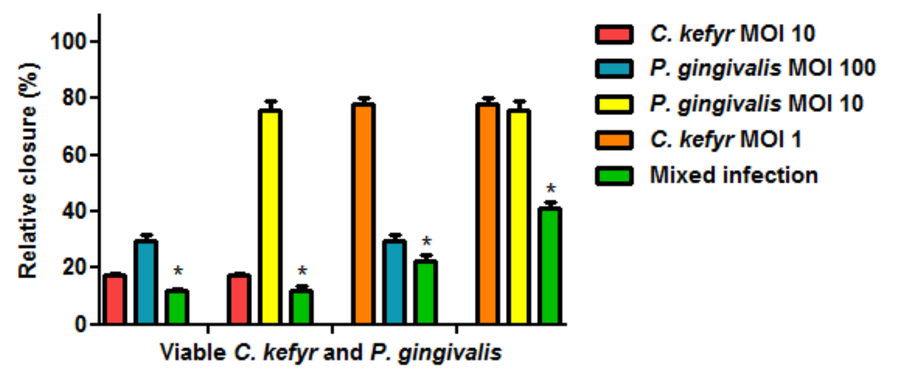
Data *P. gingivalis* from Laheij et al (2013)





2. A mixed infection inhibits wound closure *in vitro* compared to control.





A combination of *Candida* spp. and *P. gingivalis* inhibit cell migration significantly stronger than both organisms do separately.