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## Screening for killer activity in yeasts regarding its potential use for biotechnological and clinical applications

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The production of antimycotically active toxins - killer (K) toxins or zymocins - is widely distributed among different yeast species. The so-called K phenomenon has been thoroughly studied due to its potential applications and its relevance for industrial, genetic and therapeutic purposes. A panel of clinically and industrially important yeasts strains was tested for K phenotype expression using an agar diffusion assay. Almost 40% of the 115 screened strains displayed K activity, but the broadest K spectrum was found in strains of the species *Candida utilis*, *Dekkera bruxellensis*, *Hanseniaspora osmophila*, *Kluyveromyces lactis*, *Metchnikowa* sp., *Pichia anomala*, *P. farinosa*, *P. holstii*, *P. jadinii*, *Saccharomyces cerevisiae*, *Stephanoascus ciferrii* and *Sterigmatomyces halophilus*. These selected K strains and *Candida nodaensis*, whose K phenotype was described previously<sup>1</sup>, were then assayed for their ability to kill 58 medically important *Candida* isolates (11 *C. tropicalis*, 11 *C. glabrata*, 11 *C. albicans*, 9 *C. krusei*, 10 *C. parapsilosis*, 4 *C. bracarensis* and 2 *C. dubliniensis*). Preliminary results showed that a few K strains were active against some of these emerging yeast pathogens, suggesting the possible application of those strains and/or their zymocins in the control of *Candida*-associated opportunistic infections.

1. Aguiar, C. and Lucas, C. (2000) *Food Technol. Biotechnol.* 38:39-46.

## Microbial interference in fruits: promoting fruit resistance against pathogenic proliferation

REFERENCE  
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In attempt to increase fruits and vegetables' shelf life and safety, several technologies are widely used to inactivate/remove the microorganisms responsible for their contamination and deterioration. These treatments affect all the microbiota and may promote food susceptibility to pathogenic proliferation, as a consequence of microbial interference reduction. This interference includes the ability of endogen microbiota to act as antagonist, inhibitor or destructor of certain pathogenic bacteria. An alternative approach is the inactivation/inhibition of those microorganisms by a biological control. The objective of this work was to assess the interaction between strawberry and tomato endogenous bacteria, and *Listeria innocua* (used as an indicator of the pathogenic species, *L. monocytogenes*). The strawberry and tomato superficial endogen microbiota were grown in broth medium, until the stationary phase was achieved. Study of the interaction between the focused bacteria and fruit microbiota was carried out in TSB (Tryptic Soy Broth). *L. innocua* was used in latent phase while the strawberry or tomato superficial microorganisms were in the stationary phase. Samples were removed at different times, diluted and directly inoculated onto Palcam medium for posterior *Listeria* enumeration. Results showed that *L. innocua* growth, in the presence of tomato and strawberry endogen microorganisms, was inhibited during the first 8 h, when compared with *L. innocua* behaviour in pure culture.