

EFFECTS OF *SACCHAROMYCES BOULARDII* ON THE INVASION, BARRIER
FUNCTION AND SIGNAL TRANSDUCTION PATHWAY INDUCED IN
SALMONELLA ENTERICA SEROVAR TYPHIMURIUM-INFECTED T84 CELLS

Martins, F.S.^{1,3,4*}; Dalmasso, G.¹; Doye, A.¹; Lemichez, E.¹; Imbert, V.¹; Peyron, J-F.¹; Rampal, P.²; Nicoli, J.R.³; Czerucka, D.¹

¹Faculté de Médecine, Université de Nice-Sophia Antipolis, Nice, France. ²Centre Hospitalier Princesse Grace, Service d'Hépatologie-Gastroentérologie, Monaco.

³Departamento de Microbiologia, Instituto de Ciências Biológicas; ⁴Faculdade de Medicina, Universidade Federal de Minas Gerais, Belo Horizonte, MG, Brazil.

*E-mail: flavianosmartins@yahoo.fr

Saccharomyces boulardii (SB) is a nonpathogenic biotherapeutic agent used in the treatment of infectious diarrhea. In the present work we have shown that SB prevented the diminution of the transmonolayer electrical resistance in *Salmonella* Typhimurium (ST) -infected T84 cells and significantly diminished pro-inflammatory cytokine IL-8 secretion in ST-infected cells. The presence of SB on ST-infected cells diminished and/or inhibited the phosphorylation of ERK1/2, p38 and JNK MAP kinases but did not inhibit NF- κ B DNA binding activity, suggesting that the diminution of IL-8 levels was not due to inhibition of the IL-8 transcription factor but probably due to the effects of SB on the p38 MAPK inhibition, which is the MAP responsible for the stabilization of the IL-8 mRNA. SB had no effect on ST growth or adhesion, but the levels of ST invasion were significantly decreased. SB was also implicated in the diminution of the activation of Rac-1 and Cdc-42 Rho-GTPases in ST-infected cells.

Key words: *S. boulardii*, *S. Typhimurium*, MAPK, NF- κ B, IL-8.

Supported by Laboratoires BIOCOCODEX, Paris, France and CAPES, Brazil.