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Occurrence of virulence genes (ompX, sodA and cpa) in *Cronobacter sakazakii* isolated from infant cereal foods

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Cronobacter sakazakii is the specie of the genus Cronobacter that is most capable of causing severe infections as meningitis, necrotizing enterocolitis and bacteremia, especially in newborns and elderly. Moreover, this bacterium has been isolated from infant foods in several studies. However, we still need to know more about the virulence mechanisms of *C. sakazakii*. The aim of this study is to verify the presence of the ompX, cpa and sodA virulence genes in *C. sakazakii* isolates found in dehydrated infant cereal samples. The ompX encodes the outer membrane protein X (OmpX), which is involved on adhesion and in invasion of human cells, facilitating blood-brain barrier penetration. The cpa (Cronobacter plasminogen activator) may also be associated with invasiveness in some cells and provides resistance to serum bactericidal activity. The product of sodA gene (superoxide dismutase) can protect bacteria from oxidative stress due to the conversion of oxygen free radicals to hydrogen peroxide. This contributes to oxidative stress resistance by favoring intracellular permanence in macrophages. A total of 44 *C. sakazakii* isolated from 11 samples of powdered infant cereals (4 isolates per sample) was analyzed by real-time polymerase chain reaction (RT-PCR) targeting the virulence genes ompX, cpa and sodA. All isolates (100%) were positive for the 3 virulence genes tested, showing that these isolates found in food may present pathogenicity. These results show contamination by *C. sakazakii* with virulence markers in infant foods is a risk to the infant's health.

Biography:

Dirce Yorika Kabuki has completed her Doctor's degree from School of Food Engineering, University of Campinas-UNICAMP. She is Assistant Professor of Department of Food Science, School of Food Engineering, UNICAMP. She has published more than 20 papers in reputed journals.

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