Accepted Manuscript

Title: 'Novel trends in cyclodextrins encapsulation. Applications in food science'

Author: Cristina dos Santos Pilar Buera Florencia Mazzobre

PII: S2214-7993(17)30031-0
DOI: http://dx.doi.org/doi:10.1016/j.cofs.2017.09.002
Reference: COFS 265

To appear in:

Received date: 31-5-2017
Revised date: 24-8-2017
Accepted date: 7-9-2017

Please cite this article as: dos Santos, C., Buera, P., Mazzobre, F.,'Novel trends in cyclodextrins encapsulation. Applications in food science', *COFS* (2017), http://dx.doi.org/10.1016/j.cofs.2017.09.002

'Novel trends in cyclodextrins encapsulation. Applications in food science'

Cristina dos Santos[a], Pilar Buera[a,b,*] and Florencia Mazzobre [a,b]

[a]Universidad de Buenos Aires, de Ciencias Exactas y Naturales Ciudad Universitaria Departamento de Industrias y Departamento de Orgánica, Facultad– Intendente Guiraldes 2160, Buenos Aires, Argentina.
[b]Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET), Buenos Aires, Argentina

* Corresponding author. E-mail address: pilar.buera@gmail.com

Abstract

Cyclodextrins (CDs) are cyclic oligosaccharides composed of linked glucopyranose subunits. The main property of CDs is that their hydrophobic inner cavity forms inclusion complexes with a wide range of guest molecules, while the hydrophilic exterior enhances CD solubility in water. Because of their molecular inclusion capability, the properties of the materials with which they complex can be significantly modified. Particularly, solubility and stability of bioactive compounds to be used as nutraceuticals, could be improved by encapsulation in CDs. The available thermodynamic data are consistent with an exothermic and spontaneous inclusion processes. Phase solubility studies in liquid systems along with studies of physical properties of solids complex, help to elucidate complex stoichiometry and guest-CD interactions.

The use of CD-complexes for improving molecules solubility and stability, for control release and as adjuvant in extraction processes, represents a promising innovative strategy in the food industry for the development of new ingredients and products.