Versatile yeast [1]

Submitted on 3 December 2006 - 8:38pm

Calificación:

The Professional is a member of CienciaPR

CienciaPR Contribution:

By Verónica Aimee Segarra/ Special for El Nuevo Día endi.com [2] Drinking a cold beer, or eating a piece of freshly baked bread: two things that would be impossible without the yeast. It estimated that for more than five millennia, humans have been using yeast as an ingredient to make foods and drinks that make our life happier and better. The yeast is a kind of microscopic fungi made of only one cell. One of the methods this cell uses to feed and generate energy from sugars is known as fermentation. As a result of fermentation yeast secretes ethanol (a kind of alcohol, liquid) and carbon dioxide (gas). It is the secretion of these two products what makes this microorganism useful in the confection of alcoholic beverages, which contain ethanol, and baked products like bread, in which carbon dioxide secretion expands the dough. Who would have said that an organism a few micrometers of diameter will play such an important role in our lives? The importance of yeast transcends food and beverage production. S. cerevisiae is a very important organism in biological sciences. For its similarity to the animal cell, the yeasat cell is used as a model to investigate at the molecular level biological systems and circuits that are vital for the function of living beings like us. One of the biological processes that science has gotten to know better thanks to research in S. cerevisiae is the cell cycle of the eukaryotic cell. This cycle is the process through which a cell grows and divides. Among all the discoveries made in S. cerevisiae, are prominent those that have provided a better understanding of the molecular mechanisms of cancer. One of the characteristics of cancerous cells is that they multiply uncontrollably, forming tumors. Through the study of the genetic and biochemical content of defective yeast cells that, in a same fashion, grow uncontrollably, we have been able to understand the function of various

proteins that play a key role in keeping cell growth under control. Three of these types of proteins are cyclins, kinases and phosphatases. They have also been discovered to regulate growth in mammal cells. Mutations in the aminoacid sequence that make up these proteins can change their functional properties and alter their control over the cell cycle. In fact, when a cell has defective regulatory proteins it can cause it excessive growth and proliferation. This kind of event could mark the beginning of tumor formation. Detailed knowledge about these mutations and defective proteins and their function is also helping to the development of cancer treatments. Yeast is far from being useless. It not only allows our palate to enjoy once in a while, but it has provided us with a lot of knowledge.

Tags:

- S. cerevisiae [3]
- yeast [4]
- food [5]
- cell cycle [6]
- cáncer [7]

Content Categories:

- Biological and health sciences [8]

Links
[1] https://www.cienciapr.org/en/external-news/versatile-yeast [2] http://www.endi.com/noticia/ciencia/noticias/versatil_la_levadura/114369 [3] https://www.cienciapr.org/en/tags/s-cerevisiae [4] https://www.cienciapr.org/en/tags/yeast [5] https://www.cienciapr.org/en/tags/food [6] https://www.cienciapr.org/en/tags/cell-cycle [7] https://www.cienciapr.org/en/tags/cancer [8] https://www.cienciapr.org/en/categorias-de-contenido/biological-and-health-sciences-0