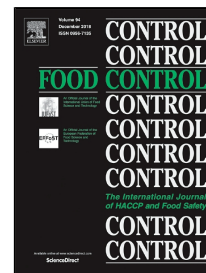


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Detoxification of mycotoxin patulin by the yeast *Rhodotorula mucilaginosa*

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1 **Detoxification of mycotoxin patulin by the yeast *Rhodotorula mucilaginosa***

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5 **Abstract**

6 Patulin is a kind of mycotoxin, which occurs in food industry frequently and
7 constitutes serious threats to human health. In this work, a strain of yeast with patulin
8 degradation was screened, and identified as *Rhodotorula mucilaginosa* (*R.*
9 *mucilaginosa* JM19) by 26S rDNA D1/D2 region gene sequencing. Subsequently, the
10 patulin detoxification process was analyzed by HPLC-UV. The results showed that
11 patulin was degraded into desoxypatulinic acid by *R. mucilaginosa* JM19. In addition,
12 patulin degrading capacity of *R. mucilaginosa* JM19 was strongly dependent on
13 temperature, cell density and initial patulin concentration. Up to 90% of patulin was
14 significantly reduced after 21 h in MES buffer at 35 °C when cell density of yeast was
15 above 1×10^8 cells/L. The *R. mucilaginosa* JM19 is capable of detoxifying over 50%
16 of initial patulin concentration at 100 µg/mL. The detoxification activity of *R.*
17 *mucilaginosa* JM19 toward patulin would be a potential approach for the control of
18 patulin contamination in food and raw materials.

19 **Keywords:** *Rhodotorula mucilaginosa* JM19; Patulin; Mycotoxin; Detoxification;

20 Degradation compounds

21 **1. Introduction**

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