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(54) **LACTOBACILLUS STRAIN AND BACTERIOICIN**

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USPC ..... 435/252.9; 424/93.45; 424/780; 530/350

(58) **Field of Classification Search**  
USPC ..... 424/93.45, 780; 435/252.9, 853; 530/350  
See application file for complete search history.

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(57) **ABSTRACT**

The present invention relates to an isolated *Lactobacillus paracasei* bacterium, deposited as NRRL B-50314, that secretes a bacteriocin. More specifically, the bacteriocin has antibacterial activity against a range of Gram-positive bacteria, including but not limited to *Listeria monocytogenes*, *Staphylococcus aureus*, *Enterococcus faecalis*, and other *Lactobacillus* species. Additionally, the bacteriocin has antibacterial activity against methicillin resistant *Staphylococcus aureus*.

2 Claims, 5 Drawing Sheets

Technology Available

# *Lactobacillus paracasei* NRRL B-50314 secretes a bacteriocin that has antibacterial activity against a range of Gram-positive bacteria, including *Listeria monocytogenes*, methicillin resistant *Staphylococcus aureus*, *Enterococcus faecalis*, and other *Lactobacillus* species.

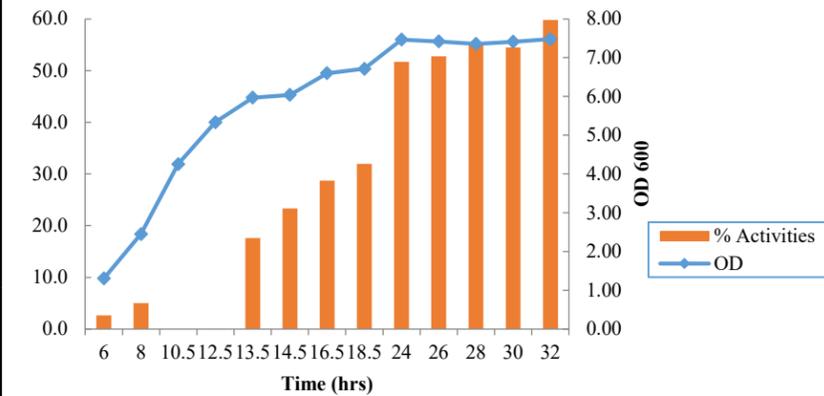


Table 1. Antibacterial gel overlay against indicator strains of *Staphylococcus* and *Listeria*

Strain	Zone width (cm)	Zone height (cm)	Drug-resistance
<i>L. lactis</i> LM 0230	2.10 ± .20	1.70 ± .20	
<i>L. monocytogenes</i> 10403S	1.45 ± .03	1.00 ± .01	
<i>Enterococcus faecalis</i> CK111	1.30 ± .10	0.60 ± .00	
<i>S. aureus</i> SH1000	1.40 ± .01	1.00 ± .00	MSSA
<i>S. aureus</i> 209P	2.50 ± .55	1.20 ± .10	MSSA
<i>S. aureus</i> DU4916S	2.20 ± .15	1.40 ± .10	MSSA
<i>S. aureus</i> 1316 P <sup>+</sup> M <sup>-</sup>	1.20 ± .05	1.10 ± .09	MSSA
<i>S. aureus</i> 1316 P <sup>+</sup> M <sup>-</sup>	2.00 ± .05	1.40 ± .20	MSSA
<i>S. aureus</i> COL	1.60 ± .01	1.40 ± .10	MRSA
<i>S. aureus</i> 592S	1.50 ± .05	1.10 ± .10	MRSA
<i>S. aureus</i> MM66	1.50 ± .15	1.10 ± .15	Hetero VISA
<i>S. aureus</i> 1316 P <sup>+</sup> M <sup>-</sup> V5 MRSA*	1.90 ± .35	1.50 ± .30	Homo VISA
<i>S. aureus</i> 1316 P <sup>+</sup> M <sup>-</sup> V20 MRSA*	1.40 ± .20	1.00 ± .00	Homo VISA

The inhibition zone was measured from the gel overlay assay after SDS gel electrophoresis. Each sample contains 15 µl of the crude lacin from *L. paracasei* NRRL B-50314 and 15 µl gel loading dye. MSSA: Methicillin sensitive *S. aureus*, MRSA: Methicillin-Resistant *S. aureus*. Hetero VISA: Heterologous Vancomycin-Intermediate Methicillin-Resistant, Homo VISA: Homogeneous Vancomycin-Intermediate Methicillin-Resistant. \* The zone is not very clear.