United States Patent

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[54] **ULTRASONIC EXTRACTION OF VIABLE ANTIGENS FROM GRAM POSITIVE BACTERIA**
9 Claims, 2 Drawing Figs.

[52] **U.S. Cl.** **241/2,** 241/30
[51] **Int. Cl.** **B02c 17/16,** B02c 19/16, A61k 23/00
[50] **Field of Search** 241/2, 30, 170, 172, 175; 424/92, 123; 195/96, 51, 66; 259/1

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ABSTRACT: A method of extracting antigens from Gram Positive bacteria cells including injecting ultrasonic energy into a solution of live Gram Positive bacteria contained in a narrow cylindrical vessel cooled by a cooling bath maintained at a temperature less than 0°C. After immersing the tip of an ultrasonic probe into the solution, the probe is energized and the solution is maintained at a temperature close to 0°C. The tip of the probe is removed from the solution after an interval of time necessary to release the appropriate antigens or enzymes from said bacteria cells, and thereafter the antigens are separated, usually as a solution in the medium from the residue of the bacteria cells.