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The emerging application of ultrasound in lactose crystallisation

Mohammad H. Zamanipoor, Ricardo L. Mancera

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1 **The emerging application of ultrasound in lactose crystallisation**

2 **Authors:** Mohammad H. Zamanipoor*, Ricardo L. Mancera

3 School of Biomedical Sciences, CHIRI Biosciences, Curtin University, GPO Box U1987,
4 Perth, WA 6845, Australia

5 ***Correspondence:** Mohammad H. Zamanipoor, School of Biomedical Sciences, Curtin
6 University, GPO Box U1987, Perth, WA 6845, Australia

7 e-mail: m.zamanipoor@gmail.com

8 **Abstract:** Ultrasonic processing is the industrial application of sound waves with a frequency
9 above the upper limit of human hearing. Interest has arisen recently in the effects of
10 ultrasound on the crystallisation of lactose as an innovative technology to improve its
11 recovery and the control over its crystal properties. This not only will increase the financial
12 profit for lactose manufacturers and improve the quality of lactose for specific applications,
13 but will also improve the quality of end products manufactured with lactose as an ingredient.

14 **Short title:** Ultrasonic crystallisation of lactose

15 **Keywords:** Lactose, crystallisation, ultrasound, recovery, particle engineering

16 **Abbreviations:** 7-ACDA: 7-amino-3-desacetoxy cephalosporanic acid; CSD: crystal size
17 distribution; DPI: dry powder inhaler; MSZW: metastable zone width

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