

Accepted Manuscript

Role of in-situ nitrite ion formation on the sonochemical transformation of para-aminosalicylic acid

Manoj P. Rayaroth, Usha K. Aravind, Charuvila T. Aravindakumar

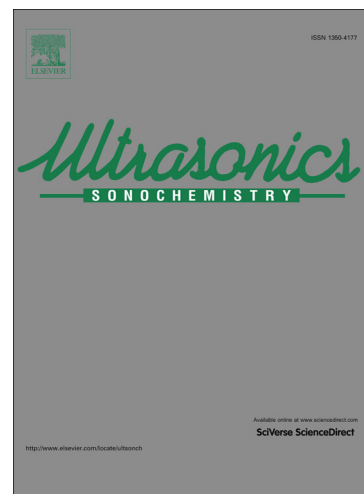
PII: S1350-4177(17)30295-X
DOI: <http://dx.doi.org/10.1016/j.ultsonch.2017.06.031>
Reference: ULTSON 3754

To appear in: *Ultrasonics Sonochemistry*

Received Date: 5 April 2017
Revised Date: 4 June 2017
Accepted Date: 29 June 2017

Please cite this article as: M.P. Rayaroth, U.K. Aravind, C.T. Aravindakumar, Role of in-situ nitrite ion formation on the sonochemical transformation of para-aminosalicylic acid, *Ultrasonics Sonochemistry* (2017), doi: <http://dx.doi.org/10.1016/j.ultsonch.2017.06.031>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



Role of in-situ nitrite ion formation on the sonochemical transformation of para-aminosalicylic acid

Manoj P. Rayaroth¹, Usha K. Aravind², and Charuvila T. Aravindakumar^{1,3,*}

¹School of Environmental Sciences, Mahatma Gandhi University, Kottayam 686560, Kerala, India

²Advanced Centre of Environmental Studies and Sustainable Development, Mahatma Gandhi University, Kottayam 686560, Kerala, India

³Inter University Instrumentation Centre, Mahatma Gandhi University, Kottayam 686560, Kerala, India

Correspondence: C. T. Aravindakumar, School of Environmental Sciences, Mahatma Gandhi University, Kottayam 686560, Kerala, India
E-mail: cta@mgu.ac.in

Abstract

The sonochemical transformation of para-aminosalicylic acid (PAS), a widely used antibiotic and an identified Emerging Pollutant (EP) under the class of Pharmaceuticals and Personal Care Products (PPCPs), have been investigated in aqueous medium. Ultrasound having frequency of 350 kHz and power of 80W was utilized for the degradation of PAS. A complete degradation (100%) of PAS after 60 min and about 83% of COD removal after 120 min of sonication, were obtained. Fourteen intermediate products were identified using LC-Q-TOF-MS. On a comparison with UV/H₂O₂ method, it is understood that four products out of fourteen were nitro derivatives which are formed only in the sonolysis, and the rest are from hydroxyl radicals. The

Download English Version:

<https://daneshyari.com/en/article/5144444>

Download Persian Version:

<https://daneshyari.com/article/5144444>

[Daneshyari.com](https://daneshyari.com)