

## Accepted Manuscript

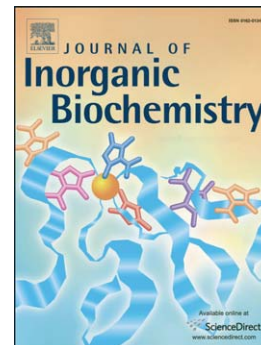
Aluminium leaching from red mud by filamentous fungi

Martin Urík, Marek Bujdoš, Barbora Milová-Žiaková, Petra Mikušová,  
Marek Slovák, Peter Matúš

PII: S0162-0134(15)30067-2  
DOI: doi: [10.1016/j.jinorgbio.2015.08.022](https://doi.org/10.1016/j.jinorgbio.2015.08.022)  
Reference: JIB 9793

To appear in: *Journal of Inorganic Biochemistry*

Received date: 17 April 2015  
Revised date: 31 July 2015  
Accepted date: 21 August 2015



Please cite this article as: Martin Urík, Marek Bujdoš, Barbora Milová-Žiaková, Petra Mikušová, Marek Slovák, Peter Matúš, Aluminium leaching from red mud by filamentous fungi, *Journal of Inorganic Biochemistry* (2015), doi: [10.1016/j.jinorgbio.2015.08.022](https://doi.org/10.1016/j.jinorgbio.2015.08.022)

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.

**Aluminium leaching from red mud by filamentous fungi**

Martin Urík<sup>1,\*</sup>, Marek Bujdoš<sup>1</sup>, Barbora Milová-Žiaková<sup>1</sup>, Petra Mikušová<sup>2</sup>, Marek Slovák<sup>2</sup>,  
Peter Matúš<sup>1</sup>

<sup>1</sup>Comenius University in Bratislava, Faculty of Natural Sciences, Institute of Laboratory Research on Geomaterials, Mlynská dolina, Ilkovičova 6, 84215 Bratislava, Slovak Republic

<sup>2</sup>Department of Mycology and Physiology, Institute of Botany, Slovak Academy of Sciences, Dubravská 9, 84523 Bratislava, Slovak Republic

\*Corresponding author. Tel.: +421260296392; E-mail address: urik@fns.uniba.sk (M. Urík)

**Abstract**

This contribution investigates the efficient and environmentally friendly aluminium leaching from red mud (bauxite residue) by 17 species of filamentous fungi. Bioleaching experiments were examined in batch cultures with the red mud in static, 7-day cultivation. The most efficient fungal strains in aluminium bioleaching were *Penicillium crustosum* G-140 and *Aspergillus niger* G-10. The *A. niger* G-10 strain was capable to extract up to approximately 141 mg.L<sup>-1</sup> of aluminium from 0.2 g dry weight red mud. Chemical leaching with organic acids mixture, prepared according to *A. niger* G-10 strain's respective fungal excretion during cultivation, proved that organic acids significantly contribute to aluminium solubilization from red mud.

**Keywords:** bioleaching, aluminium, red mud, filamentous fungi

Download English Version:

<https://daneshyari.com/en/article/7754945>

Download Persian Version:

<https://daneshyari.com/article/7754945>

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