## Accepted Manuscript

Title: Biological standards for the Knowledge-Based

BioEconomy: what is at stake

Authors: Víctor de Lorenzo, Markus Schmidt

PII: S1871-6784(16)32621-8

DOI: http://dx.doi.org/doi:10.1016/j.nbt.2017.05.001

Reference: NBT 969

To appear in:

Please cite this article as: de Lorenzo, Víctor, Schmidt, Markus, Biological standards for the Knowledge-Based BioEconomy: what is at stake.New Biotechnology http://dx.doi.org/10.1016/j.nbt.2017.05.001

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## ACCEPTED MANUSCRIPT

### Biological standards for the Knowledge-Based BioEconomy: what is at stake

Víctor de Lorenzo<sup>1</sup>\* and Markus Schmidt<sup>2</sup>

<sup>1</sup>Systems and Synthetic Biology Program, Centro Nacional de Biotecnología (CNB-CSIC)

Madrid 28049, Spain. <sup>2</sup>Biofaction KG, 1030 Vienna, Austria

\* Corresponding author: V. de Lorenzo

Systems and Synthetic Biology Program

Centro Nacional de Biotecnología (CNB-CSIC)

Darwin 3, Campus de Cantoblanco. Madrid 28049, Spain

Phone: +34 91 585 4536. Fax: +34 91 585 4506

E-mail: vdlorenzo@cnb.csic.es

#### Highlights of the Article

- Biological standards for the Knowledge-Based BioEconomy: what is at stake
- Synthetic Biology is one of the key drivers of the Fourth Industrial Revolution
- Standards make the difference between genetic *bricolage* and authentic genetic engineering
- Compositional rules, metrology and descriptive languages are the immediate fields in need of standards
- Standards are also needed for databases, safety, security and management of Intellectual Property
- The EU may play a poor role in KBBE if standardization issues are neglected at this early stage

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