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### **Public Deposits In Biological Resource Centres Is An Essential Part Of Fair Science**

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#### **Abstract:**

FAIR science aims at sharing scientific output in such a way as to maximize the access, reuse and impact of research. This allows transparency of results, reproducibility of experiments, cumulative research, and avoids a waste of resources (1). Although the FAIR data principle is becoming a well-known concept, less attention is given to its application to biological resources. In life sciences, public microbial - and plasmid collections represent a historical example of FAIR science, thanks to their longstanding experience in the preservation and distribution of living microbial strains and (g)DNA for further scientific investigations or development, while respecting (inter)national legislations and case-specific restrictions as defined by the clients. These biological resource centres (BRC) provide well-characterized, quality-controlled and authenticated strains, plasmids and associated data (2). They also support the bio-industry, for which the diversity of naturally occurring or genetically engineered microorganisms are an invaluable source of applications. The responsibility to deposit the microorganisms and genetic resources in public BRCs is shared by researchers, funding agencies and publishers (2). Life scientists need to become more aware of the importance of strain and plasmid conservation and grow accustomed to deposit them during the publication process or at the end of projects. Governmental funding policies should request in their contracts the deposit of biological materials isolated

or constructed during financed projects. Regarding publishers, most journals encourage authors to deposit their datasets (codes, sequences, etc) in public repositories but very few specifically require deposit of biological material and cultivated strains in public collections. Editors should therefore implement mechanisms for active agreement by authors to deposit strains and other genetic resources when submitting an article, or to justify why it would not be possible. Such mechanisms could follow Transparency and Openness Promotion guidelines (3) for journals that include standards for research materials.

**Acknowledgments/ References:**

1. M.D. Wilkinson et al., 2016. The FAIR guiding principles for scientific data management and stewardship. *Sci Data* **3**: 160018. 2. P. Becker, et al. 2019. Public microbial resources centres: key hubs for FAIR microorganisms and genetic materials. AEM.01444-1. 3. Nosek BA et al. (2015). Promoting an open research culture. *Science* **348**: 1422-1425.

Author Disclosure Information:

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