

Memorandum of Understanding

for Scientific Cooperation between

***P.H.A.G.E., Phages for Human Application Group Europe, Brussels, Belgium
and***

***Leibniz Institute DSMZ-German Collection of Microorganisms and Cell Cultures GmbH,
Braunschweig, Germany***

P.H.A.G.E. (www.p-h-a-g-e.org) is an international non-profit organization aiming to support phage research and phage therapy in Europe and to develop a specific regulatory framework for phage therapy in Europe. Founded in 2009 as a way to explore and develop a sustainable alternative to the threatening appearance of antibiotic-resistant bacteria, its membership grew to almost 300 members as of February 2013. Those members are from within and outside Europe. Members of P.H.A.G.E. are typically scientists, medical doctors and specialists in the fields of health economics and legal, regulatory or quality control matters. Securing curated phages with potential therapeutic usefulness becomes hence important as they are to be kept active and authentic. Working with and exchanging well-known phage strains will be essential to establish their therapeutic potential, ensure quality and standardization.

At the P.H.A.G.E. General Assembly Meeting of February 22nd 2013, Brussels, and in keeping with one of the stated goals of P.H.A.G.E. at its foundation, it was agreed to start to establish a **Therapeutic Phage Bank** under the auspices of P.H.A.G.E. with an institution where phage expertise is available to

- collect phages (together with their hosts) under professional documented accession procedure
- preserve and store these phages for the long-term according to established methods to keep these phages secure, active and authentic for immediate laboratory use, further application and for the future
- regularly quality-check these phages for viability (titres) and purity
- deliver these phages to authorized recipients, whilst the definition of “authorized recipients” is laid down by a **Material Transfer Agreement, MTA**, in order to ensure access to standardized phage material.

The **Leibniz Institute DSMZ-German Collection of Microorganisms and Cell Cultures GmbH**, Braunschweig, Germany (www.dsmz.de) is member of P.H.A.G.E. and sits at the P.H.A.G.E. Executive Board. The DSMZ has profound experience with phages, they are under curatorship of the open collection of the Department of Microorganisms. Well-established infrastructure, sustainable funding and state-of-the-art methodology in the phage context are provided as well as expertise with all kinds of bacterial taxa.



It is the main mission of the DSMZ to maintain biological material in its vast diversity, this includes phages. Under the EU-funded project *CABRI (Common Access to Biological Resources and Information)*, the DSMZ was leading a task to develop phage quality guidelines (see SOP procedures at <http://www.cabri.org/guidelines/phages/phcover.html>). The DSMZ is facilitating the support of phage application approaches in different areas.

Aim of the cooperation

Under this Memorandum of Understanding and the auspices of P.H.A.G.E., the DSMZ will cooperate with the P.H.A.G.E. membership and establish a **Therapeutic Phage Bank**, a collection of phages being in focus of potential application. These phages will be available for authorized recipients under restrictive **Material Transfer Agreement** and distributed to them for a reasonable fee to cover expenses, identical with phage prices of the DSMZ. DSMZ Terms & Conditions fully apply (<http://www.dsmz.de/terms.html>). The DSMZ will provide these phages for laboratory use. For any therapeutic use, it is the responsibility of the user to purify and quality-control them according to applicable rules and standards.

P.H.A.G.E. and the DSMZ encourage the community of phage researchers and physicians whether being members of P.H.A.G.E. or not, to deposit phages (and a suitable host per phage) with the DSMZ, **Therapeutic Phage Bank**, under the protection of the special MTA as attached to this Memorandum of Understanding. This MTA covers the use for scientific purposes and aims at standardizing the work on a EU level, a separate MTA will be established to allow clinical applications in the future.

Date, signature for DSMZ:

Prof. Dr. Jörg Overmann, Managing Director

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Date, signature for P.H.A.G.E.:

Prof. Dr. Martin Zizi, President

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Attached: MTA for restricted dispatch of phages deposited under the aim of this Memorandum of Understanding