

PRESS RELEASE

Heidelberg Pharma receives European Union research grant for the ETN MAGICBULLET project

- **MAGICBULLET project being continued as MAGICBULLET::reloaded**
- **Consortium's research field expanded to include small chemical molecules**

Ladenburg, 19 September 2019 – Heidelberg Pharma AG (FSE: WL6) today announced that its subsidiary Heidelberg Pharma Research GmbH will receive a research grant from the European Union. Heidelberg Pharma is part of the European Training Network (ETN) MAGICBULLET, which was launched by the European Union in 2015 as part of the HORIZON 2020 program for research and innovation. Since then, the ETN MAGICBULLET consortium has received around EUR 3.75 million to develop novel biochemical conjugates for anti-tumor therapies. MAGICBULLET::reloaded is now expected to receive additional funds totaling up to EUR 3.9 million for the period from 2019 to 2022.

The ETN MAGICBULLET consortium comprises teams of researchers from different European universities, research institutions and companies. So-called small molecule drug conjugates (SMDCs) were successfully manufactured during the first funding period. As part of this process, instead of antibodies, such as ADCs, small molecules were used to target tumors and linked with Amanitin. The potential advantage of such SMDCs is their improved penetration of solid tumors.

The research field for MAGICBULLET::reloaded is now being expanded from SMDCs to include peptide-drug conjugates and is focusing on candidates that stimulate the immune response against tumors and can overcome resistance to immunotherapies. This involves searching for new tumor antigens and investigating their pharmacokinetics, selectivity and anti-tumor activity. Heidelberg Pharma also plans to expand its Amanitin conjugate research with peptide-Amanitin conjugates and will not only identify and validate tumor-specific drug conjugates during the new funding period, but also investigate their biological activity in *in vitro* and *in vivo* tests.

Professor Andreas Pahl, Chief Scientific Officer of Heidelberg Pharma AG, commented: "Over the last few years, we have achieved very interesting results in this international and interdisciplinary project that are worthy of further investigation. So far, the collaboration within the network has been intensive, interactive and fruitful, leading to the development of a new class of Amanitin conjugates. We also managed to gain two very strong colleagues who completed their PhDs as part of this project. We are looking forward to continuing the MAGICBULLET project and having the opportunity, together with our partners, to contribute our expertise and develop innovative anti-tumor therapies."

In addition to MAGICBULLET::reloaded, Heidelberg Pharma is also involved in other HORIZON 2020 programs that focus on specific scientific issues with the pHionic and INTEGRATA projects.

More news on this topic: [Heidelberg Pharma receives research grant from the European Union, dated 25 February 2015](#)

About ETN MAGICBULLET

The ETN will develop and validate an array of new peptide-drug conjugates combining tumor-specific peptides with potent cytotoxic drugs. The MAGICBULLET consortium consists of seven academic research groups from Germany, Italy, Hungary and Finland, and different biopharmaceutical companies from Germany and Italy. More information on the project is available at www.uni-bielefeld.de/chemie/oc3sewald/magicbullet.

About Heidelberg Pharma's proprietary ATAC technology

Antibody drug conjugates (ADCs) combine the high affinity and specificity of antibodies with the potency of cytotoxic small molecules for the treatment of cancer. Antibody Targeted Amanitin Conjugates (ATACs) are ADCs whose active ingredient is made up of amatoxin molecules. Amatoxins are small bicyclic peptides naturally occurring in the death cap mushroom. They inhibit mRNA transcription by binding to RNA polymerase II, a mechanism that is crucial for the survival of eukaryotic cells. In preclinical testing, ATACs have been shown to be highly efficacious, overcoming frequently encountered resistance mechanisms and combating even quiescent tumor cells.

About Heidelberg Pharma

Heidelberg Pharma AG is a biopharmaceutical company based in Ladenburg, Germany. Heidelberg Pharma is an oncology specialist and the first company to develop the toxin Amanitin into cancer therapies using its proprietary Antibody Targeted Amanitin Conjugate (ATAC) technology and to advance the biological mode of action of the toxin as a novel therapeutic principle. This proprietary technology platform is being applied to develop the Company's proprietary therapeutic ATACs as well as in third-party collaborations to create a variety of ATAC candidates. The proprietary lead candidate HDP-101 is a BCMA ATAC for multiple myeloma.

The Company has entered into partnerships to further develop and commercialize its clinical assets MESUPRON® and REDECTANE®. Heidelberg Pharma AG is listed on the Frankfurt Stock Exchange: ISIN DE000A11QVV0 / WKN A11QVV / Symbol WL6. More information is available at www.heidelberg-pharma.com.

Contact

Heidelberg Pharma AG

Corporate Communications

Sylvia Wimmer

Tel.: +49 89 41 31 38-29

Email: [investors\[at\]hdpharma.com](mailto:investors[at]hdpharma.com)

Schriesheimer Str. 101, 68526 Ladenburg

IR/PR support

MC Services AG

Katja Arnold (CIRO)

Managing Director & Partner

Tel.: +49 89 210 228-40

Cell: +49 (0)160 9360 3022

Email: [katja.arnold\[at\]mc-services.eu](mailto:katja.arnold[at]mc-services.eu)

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