



## Press release No. 112/2013

University of Konstanz  
Communications and Marketing  
Press Office  
Universitätsstraße 10  
78464 Konstanz  
Germany  
Phone: +49 7531 88-3603  
Fax +49 7531 88-3766  
kum@uni-konstanz.de  
www.uni-konstanz.de

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### A key to personalised medicine

#### ERC Advanced Grant for the chemist Professor Dr. Andreas Marx from Konstanz for research on gene modification

The chemist Professor Dr. Andreas Marx from Konstanz was awarded the renowned ERC Advanced Grant by the European Research Council (ERC) for developing new diagnostic procedures on the basis of DNA methylation. Similar to a diabetes quick test the new DNA methylation diagnostic is a universal and simplified procedure for an early diagnosis of diseases, among other things cancer. Moreover, the procedure provides the opportunity to tailor therapies more exactly to the patient – and thus opens the door to personalised disease control, that is exactly matched to the organism of the patient and therefore shows fewer side effects. The five-year research project at the University of Konstanz is being supported by the European Research Council with approximately 2.5 million euros.

DNA methylation is considered as the most important epigenetic modification in human beings. The degree of methylation of cells is an important indicator of diseases and can be used for the early recognition of cancer, among other things. Present methods of testing methylation, however, have not only been work-intensive and time-consuming, but also bear a high risk of sample contamination. These test procedures have been too complex and too expensive for a broad medical application so far.

"Our approach of combining chemistry with biochemistry and biotechnology significantly simplifies these methods, thus enabling every diagnostic laboratory to run the test with established devices", comments Andreas Marx on the background of his research project 'EvoEPIGEN'. "If we are successful, a test will no longer take some 16 hours, as is currently the case, but only two hours. This will save nearly two days of work and the costs

and risks will be substantially reduced: the test becomes suitable for large-scale use", Marx explains the importance of the simplified test procedure.

Moreover, with a simplified test the course of a therapy could be better assessed by observing the methylation patterns of DNA. In this way the therapy could be tailored more exactly to the patient and side effects of a treatment could be reduced. Thus a quick test might be an important step towards personalised medicine.

"The aim of our project is not only to promote biochemistry and its application in the medical field, but also to enhance the understanding of the effect of DNA methylation", explains Andreas Marx. The chemist and his research group intend to advance basic research in the field of epigenetics in order to tap new medical potential. "My thanks go to the European Research Council for the trust placed in me and in particular to all parties involved, as they played an important part in the preparatory work and made the project possible in the first place", Andreas Marx acknowledges.

**Note to editors:**

You can download a photo of Prof. Dr. Andreas Marx here:

<http://www.pi.uni-konstanz.de/2013/marx.jpg>

**Contact:**

University of Konstanz  
Communications and Marketing  
Phone: 07531 / 88-3603  
Email: [kum@uni-konstanz.de](mailto:kum@uni-konstanz.de)

Prof. Dr. Andreas Marx  
University of Konstanz  
Department of Chemistry  
Organic chemistry / cellular chemistry  
Universitätsstraße 10  
78464 Konstanz  
Phone: 07531 / 88-5139  
Email: [Andreas.Marx@uni-konstanz.de](mailto:Andreas.Marx@uni-konstanz.de)

[www.uni-konstanz.de](http://www.uni-konstanz.de)

BW-Bank Konstanz, Kontonr. 7 486 501 274 BLZ. 600 501 01  
IBAN: DE92 6005 0101 7486 5012 74 BIC: SOLA DE ST

Paketanschrift: Universität Konstanz, Universitätsstraße 10, 78464 Konstanz

Busverbindungen: ab Hauptbahnhof: Linien 9A und 9B, ab Haltepunkt Wollmatingen: Linie 11

