



**Press release**  
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**Acute Myeloid Leukemia:  
Nanomedicine drug delivery system could improve chemotherapy**

Chemotherapy is still the backbone of today's cancer treatment. This is exemplified by acute myeloid leukemia (AML), a disease which is responsive to intense chemotherapy based treatment regimens, which are at least curative in a fraction of patients. Anthracyclines belong to the key chemotherapeutic drugs applied worldwide in the treatment of AML. Unfortunately, the administration dose of anthracyclines is limited by their cardiotoxicity and the development of drug-resistance of tumors. In addition, the efficiency of anthracyclines decreases during circulation in the blood stream due to its rapid metabolic degradation.

To improve the pharmacological properties of anthracyclines, a novel nanomedicine drug delivery system has been developed by the groups of Prof. Dr. Tanja Weil (Institute of Organic Chemistry/Macromolecular Chemistry, Ulm University) and Prof. Dr. Christian Buske (Comprehensive Cancer Center Ulm, Institute of Experimental Cancer Research, University Hospital Ulm). This biopolymer carries multiple copies of an anti-tumor drug molecule, it shows high stability in serum and efficient release in tumor cells by a dual mechanism. Significantly higher survival rates have been observed in an ex vivo animal model suggesting its potential for designing next generation anti-leukemia treatments. The results have been published in the Journal of Advanced Healthcare Materials.

Yuzhou Wu, Susann Ihme, Michaela Feuring-Buske, Seah Ling Kuan, Klaus Eisele, Markus Lamla, Yanran Wang, Christian Buske, and Tanja Weil. A core-shell albumin copolymer nanotransporter for high capacity loading and two-step release of doxorubicin with enhanced anti-leukemia activity. *Advanced Healthcare Materials*. <http://doi.wiley.com/10.1002/adhm.201200296>.



**Further information:**

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Founded in 1967, **the University of Ulm** enjoys an excellent reputation for innovative research, interdisciplinarity and successful training. Its 4 faculties (Engineering and Computer Science; Mathematics and Economics; Medicine; Natural Sciences) support some 9,500 students. The university plays a central role of the Science City of Ulm, not only as the region's biggest educational facility, but also as an important motor for R&D.

The research profile of the youngest university in the state of Baden-Württemberg is characterized by its focus on life sciences and medicine, bio-, nano- and energy-materials, financial services and their mathematical methodology as well as communications-, information- and quantum-technology.