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## **Biochip instead of animal testing**

### LiquiDoS doses nutrient medium with system

August 2019: New active ingredients require new tests. For ethical, economic and scientific reasons, animal experimentations are increasingly being replaced by biochips. Human cells from different organs are placed on the chips and supplied with nutrient solution via small channels. In this way, blood circulation and metabolic functions of the human body are simulated. Monitoring after the addition of active substances such as drugs, cosmetics or chemicals allows conclusions to be drawn about the reactions and processes in the human body.

The continuous supply of the cells with liquid nutrient medium is a great challenge, as even small variations influence the test results. The LiquiDoS dosing system by HNP Mikrosysteme contains a highly precise, low-shear micro annular gear pump (mzr pump), which is ideally suited for filling the biochip. Volume flows from 1.5 µl/min to 72 ml/min as well as dosing volumes from 0.25 µl are gently realized with the LiquiDoS.

In addition to the micropump, LiquiDoS contains a filter, a shut-off valve and the mzr-Touch Control. The graphical user interface facilitates the handling of the system by direct input of dosing quantity and dosing duration. Furthermore, the mzr-Touch Control enables simple programming, fast switching between manual and automated dosing tasks as well as reproducible results.

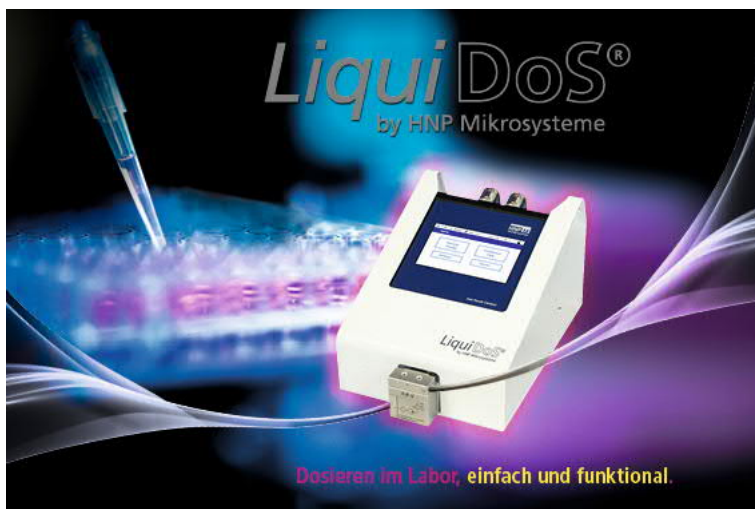
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### **HNP Mikrosysteme**

HNP Mikrosysteme GmbH, located in Germany, develops, manufactures and markets pumps and systems worldwide which deliver small amounts of liquids fast and accurately. Beside several applications in plant engineering, chemical processing and pharmaceutical processing, mzr-pumps are used in the field of life science and analytical instrumentation.



Versatile dosing system LiquiDoS  
Picture: *hnpm\_LiquiDoS\_EN\_freige.jpg*



Compact system for analysis, research and development  
Picture: *hnpm\_LiquiDoS-HG\_DE\_10x15\_cmyk.jpg*

Meet us at **Compamed** (November, 18 - 21, 2019): **hall 8a, booth F29.2**