DPhG-Kolloquium

Sommersemester 2018

Johannes Gutenberg-Universität Mainz
Pharmaziegebäude, Staudinger Weg 5, EG
Seminarraum 00 112

IPB Institut für Pharmazie und Biochemie
Therapeutische Lebenswissenschaften

Geschäftsführende Leiterin
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DEUTSCHE PHARMAZEUTISCHE GESELLSCHAFT
LANDESGRUPPE RHEINLAND-PFALZ
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E I N L A D U N G

Am **Freitag, 08. Juni 2018, 15.00 Uhr (geändert)**
spricht im

Institut für Pharmazie und Biochemie
der Universität Mainz,
Staudinger Weg 5, Seminarraum I (EG):

Herr Prof. Dr. Roland Hartmann
Institut für Pharmazeutische Chemie
Philipps-Universität Marburg

über das Thema:

„A novel RNA-free RNase P discovered in a small group of Bacteria and many Archaea"

Hierzu sind Sie herzlich eingeladen!
gez. Prof. Dr. Mark Helm

Abstract:
Although the genome of the hyperthermophilic bacterium Aquifex aeolicus became available as early as 1998, neither a gene for the RNA nor the protein component of bacterial RNase P could be identified. In 2008, RNase P activity could be detected in A. aeolicus cell lysates, but the nature of the enzyme remained elusive. We were able to sufficiently enrich the RNase P activity of A. aeolicus to reveal its identity. Lacking an an RNA subunit, the enzyme is the smallest of its kind: the 23-kDa polypeptide, which only comprises a metallonuclease domain, has RNase P activity in vitro and can rescue growth of E. coli and yeast strains with deactivations of their larger and more complex endogenous ribonucleoprotein RNase P. Homologs of Aquifex RNase P (HARP) were identified in many Archaea and some Bacteria, of which all Archaea and most Bacteria also encode an RNA-based RNase P. For one bacterium and one archaeon, activity of both RNase P forms could be demonstrated. Bioinformatic analyses suggest that A. aeolicus and related Aquificaceae acquired HARP by horizontal gene transfer from an archaeon. Current functional and structural investigations on HARPs will be discussed.

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