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## Form and Function

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### **Molecular evolutionary inferences of recent biological innovations in mice and rats**

**Sreyasi Biswas, Eslam ElShahat, Michael H. Kohn**

BioSciences Department, Rice University, 6100 Main Street, Houston, Texas 77005, USA,  
hmkohn@rice.edu

The releases and analyses of the genome sequences of the house mouse and of the Norway rat provided new insights into the biological differences between *Mus* and *Rattus*. However, technically these differences could not be mapped specifically onto either the mouse or the rat lineage. We added map-based assemblies of the genomes of the Roof rat (*Rattus rattus* "S") and of the Algerian mouse (*Mus spretus*) and conducted comparative molecular evolutionary analyses of the protein coding portions of the two species of mouse and rat followed by bioinformatics inferences of the biology encoded by the emerged sets of genes. We were able to specifically map protein encoding differences and inferred biological differences onto the *Mus* and *Rattus* lineages. Thus, we were able to compare and contrast some of the most recent evolutionary innovations in the rat and mouse lineages.

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# Julius-Kühn-Archiv

Jens Jacob, Jana Eccard (Editors)

6<sup>th</sup> International Conference of Rodent  
Biology and Management  
and  
16<sup>th</sup> Rodens et Spatium

Potsdam, Germany, 3-7 September 2018

Book of Abstracts



Julius Kühn-Institut  
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**Editors:**

Jens Jacob<sup>1</sup> and Jana Eccard<sup>2</sup>

<sup>1</sup>Julius Kühn Institute, Federal Research Centre for Cultivated Plants,  
Institute for Plant Protection in Horticulture and Forests, Vertebrate Research,  
Toppeideweg 88, 48161 Münster, Germany

<sup>2</sup>University of Potsdam, Institute of Biochemistry and Biology,  
Animal Ecology Group, Maulbeerallee 1,  
14469 Potsdam, Germany

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