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# TATIANA SOBOLEVA

Australian National University, Canberra, Australia


**H2A.B.3, AN RNA-BINDING HISTONE VARIANT  
THAT HAS EVOLVED TO PARTICIPATE IN HISTONE  
mRNA DEGRADATION**

23.JULY 2024 – 11 AM – LECTURE HALL

H2A.B.3 is a testis- and brain-specific histone variant that evolved late in the evolution and is present only in eutherian mammals. We have previously shown that H2A.B.3 de-compacts chromatin and aids in the activation of gene transcription. It has a unique ability to bind to RNA via an Arginine-rich N-terminus and to interact with the splicing machinery, implicating H2A.B.3 in participation in RNA splicing.

Now, we have shown that H2A.B.3 depletion in the testis stabilises replication-dependent histone mRNA, which results in the formation of defective sperm. We believe that this group of histone variants has evolved to play a key role during histone-to-protamine exchange, a unique process that is specific only to male gametogenesis. This presentation will discuss the mechanisms and implications of this important and unexpected finding.

Invited by : Saadi Khochbin

 Twitter : IAB\_Officiel  
Website : <https://iab-grenoble.fr/>