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ONLINE SEMINAR

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**STRUCTURAL STUDIES
OF THE INTEGRATOR
COMPLEX**

June 30th, 2021, 2 pm (CET)
Online seminar via ZOOM

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Structural studies of the Integrator complex

SPEAKER

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ABSTRACT:

The Integrator is a specialized 3' end-processing complex involved in cleavage and transcription termination of a subset of nascent RNA polymerase II transcripts, including small nuclear RNAs (snRNAs).

We provide evidence of the modular nature of the Integrator complex by biochemically characterizing its two subcomplexes, INTS5/8 and INTS10/13/14. Using cryoelectron microscopy (cryo-EM), we determined a 3.5-Å-resolution structure of the INTS4/9/11 ternary complex, which constitutes Integrator's catalytic core.

Our structure reveals the spatial organization of the catalytic nuclease INTS11, bound to its catalytically impaired homolog INTS9 via several interdependent interfaces. INTS4, a helical repeat protein, plays a key role in stabilizing nuclease domains and other components. In this assembly, all three proteins form a composite electropositive groove, suggesting a putative RNA binding path within the complex. Comparison with other 3' end-processing machineries points to distinct features and unique architecture of the Integrator's catalytic module.

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