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Molecular mechanisms of evolutionary innovation

LE JEUDI 11 FÉVRIER 2021 À 12 H 30

Vous pouvez maintenant assister à la conférence via Zoom en cliquant sur ce lien :

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Where do genes come from? All genomes contain genes whose sequences appear unique to a given species or lineage to the exclusion of all others. These “orphan” genes cannot be related to any known gene family; they are considered evolutionarily novel and are thought to mediate species-specific traits and adaptations. In this seminar, I will present an investigation of the evolutionary origins of orphan genes in eukaryotes. According to our results, most orphan genes may have evolved through an enigmatic process called “*de novo* gene birth”. I will present a series of integrated computational and experimental analyses in budding yeast that begin to shed light on the molecular mechanisms of *de novo* gene birth. Serendipitously, these analyses reveal the existence of thousands of previously unsuspected translated elements in the yeast genome that appear to mediate beneficial phenotypes yet are evolutionarily transient. I will discuss the implications of these findings for our understanding of genome, cell and systems biology.

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