

BIOPARK
CHARLEROI BRUSSELS SOUTH

news

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Revealing the nucleolus “brick by brick”



Denis Lafontaine and Birthe Fahrenkrog are focusing on ribosomes and nuclear pore complexes as part of their nucleolus "ARC" project. Why? The nucleolus is a powerful biomarker of disease and a target for the treatment of cancers.

WHAT IS THE FNRS?

PhD candidates, post doc students, and researchers... a great many scientists on the Biopark receive valuable support from the Fund for Scientific Research (FNRS), either directly or as part of Télévie. The FNRS also funds equipment and research projects.

Human resources and facilities that are often an extremely useful addition to projects already funded through other channels.

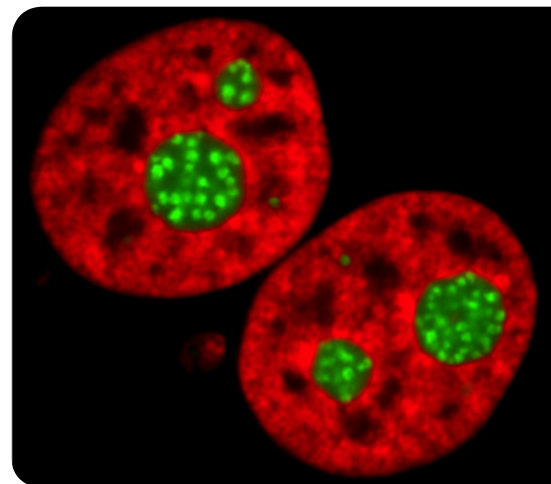
This is the case with the two “Collective Research Initiatives” (ARC) presented opposite: funded by the *Fédération Wallonie-Bruxelles*, one (Advanced) is coordinated by Denis Lafontaine, Director of Research at the FNRS, in partnership with Birthe Fahrenkrog, while the other (Consolidation), directed by Benoît Vanhollebeke, is also funded by an FNRS Incentive Grant for Scientific Research.

N.G.

“We can tell if a cell is healthy or not by looking at the morphology of the nucleolus, which is one of its components”, explains Denis Lafontaine (RNA Metabolism Laboratory – IBMM). “The size, shape, and even the number of nucleoli within a cell vary greatly. These three criteria are valuable indicators of the physiological state of our cells”. In practice, however, it remains difficult to use this information owing to the lack of robust clinical testing.

Researchers are now going to dismantle the nucleolus “brick by brick” to better understand the relationship between its structure and its function. “We already know what makes up the nucleolus”, Denis La Fontaine continues. “To learn more, we will use our robotic microscope to analyse the nucleolus’ morphology when each component is removed. The robotic microscope is a high bandwidth screening platform designed by our laboratory as part of an ERDF project, and illustrates my involvement in founding the CMMI”.

In parallel, Birthe Fahrenkrog (Biology of the Nucleus Laboratory – IBMM) is looking into nuclear pores, the small windows in the nucleus that manage the exchange of components within the cell. “One of the aims is to understand why some parts of the nuclear pore become diseased within the nucleolus”, the researcher explains. “Eventually, this research could



help us to better understand the relationship between the structure of the nucleolus and disease, and cancer in particular”.

Damiano Di Stazio

From 19-23 August, Brussels will host the 10th European Molecular Biology Organization (EMBO) conference on ribosome synthesis.

Learn more: : <http://events.embo.org/15-ribosomes/>