



BIOPARK

CHARLEROI BRUSSELS SOUTH

news

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Cellular and Developmental Biology Cluster: examining biological processes

The new Cellular and Developmental Biology cluster is designed to expand our horizons and increase our understanding of complex living organisms. And the future looks bright, especially for training young researchers.

“Researchers in this cluster are exploring the biological processes at work on different levels, from the molecular mechanisms governing cellular homeostasis to the development and physiology of organs and organisms. Having these complementary fields at our disposal within an integrated research cluster is a fantastic asset”, reveals Benoit Vanhollebeke, who manages the “new research group” alongside Eric Bellefroid.

“More specifically, we are studying exchanges between the cell’s cytoplasm and its nucleus, ribosome biogenesis, and membrane transport”, he adds.

Within the cluster, research is also focusing on early embryonic development, signalling in receptors coupled to G proteins, inflammation mechanisms, the process behind programmed cell death, and plant physiology and genetics.

Other teams are studying transcription factors in the development of the cerebral cortex, and the intracellular movement of amino acid transporters in yeast and human cells (transporters which are, for example, hyperactive in cancer cells and therefore represent potential targets for treatments).

“This restructuring is great news for the scientific maturity of our young researchers who will be able to play a more active role in the cluster’s other teams: a boon for understanding complex biological processes, translating into better training for our students”, Eric Bellefroid explains.

In all, 11 laboratories and more than 60 researchers are now grouped together in this cluster. “Access to cutting edge equipment, in particular high spatial and temporal resolution fluorescent microscopes, is a major asset for our teams and essential to the cluster’s future”, Benoit Vanhollebeke concludes.

Damiano Di Stazio

A JOINT PROJECT ON RIBOSOMOPATHIES

Just one example of collaboration? The project from teams working under Denis Lafontaine and Eric Bellefroid, examining ribosomopathies which are “cancer predisposition syndromes, associated with malformations of the skeletal system and issues with blood cell maturity”, Denis Lafontaine explains.

“Thanks to the valuable support from our colleague Eric Bellefroid, we have been able to model certain ribosomopathies in animals, more specifically the xenopus, a South-African toad, which hails from South Africa and is now widely used as an amphibian model. We can now say that inhibited ribosome biogenesis (in the right section of the embryo, *see illustration*) severely affects particular tissues during embryonic development, in particular the eyes and craniofacial skeleton, reproducing some of the symptoms observed in human patients suffering from ribosomopathies”.

D.D.S.

