



MASARYK UNIVERSITY

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Genomic 'Dark MATTER' attracts another prestigious European grant to CEITEC MU

The European Research Council's most prestigious grant is once more going to the Central European Institute of Technology (CEITEC MU) in Brno. Biologist Richard Štefl's project, aiming to study in detail the mechanism of the creation and functioning of genomic 'dark matter', succeeded in competition with experienced scientists from around the world. His team's research concerned with non-coding RNA, sometimes termed genomic 'dark matter', has thus gained support to the tune of €2 million for a period of five years. Over the last two years this is the second such extraordinary grant from this source won by CEITEC Masaryk University scientists. It is also further confirmation of the quality of the activities of CEITEC, which is steadily enhancing its position as a recognised European scientific research centre.

Richard Štefl managed to win a grant in the Consolidator category, for promising young scientists able to demonstrate success in their scientific work with 7 to 12 years of experience after completing their PhD. "This significant financial support will allow me to concentrate on long-term research. It will allow me to return to the laboratory and not have to concern myself with funding for my group for the next year," explains Richard Štefl of CEITEC Masaryk University on the importance of this grant.

Genomic 'dark matter' – or non-coding RNA – is a challenge for medicine's future. "Research into genomic 'dark matter' is constantly surprising scientists. Data shows that there are few processes in the cell that do not involve genomic 'dark matter'. It appears that many diseases have their genetic origins outside the coding parts of the genome – in the 'dark matter'," says Richard Štefl explaining his work. "My group is making use of nuclear magnetic resonance and is studying the detailed mechanisms of the creation of genomic 'dark matter'," he adds. Just like dark matter in the universe, genomic 'dark matter' in the cell is abundant – making up more than 70 per cent of the human genome. Until now it has been hard to detect due to its short half-life. Only new technologies have made possible its discovery, opening up new chapters in our knowledge of biology and medicine. "Genomic dark matter is the 'missing link' in understanding many cellular mechanisms and human diseases that we are as yet unable to deal with. At present it is important to understand how and why this dark matter is formed, and what all its cellular functions are," explains Štefl, who has already published articles on this topic in prestigious scientific journals.

Richard Štefl spent several years at ETH in Zurich and UCLA and is now heading a research group in CEITEC. He has already been the recipient of significant grants from organisations such as the Human Frontier Science Program, the Howard Hughes Medical Institute and the European Molecular Biology Organization. He has published his work in top journals such as Cell, Molecular Cell, EMBO Journal, Nature Structural & Molecular Biology, PNAS, etc.

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Masaryk University was founded under a law from 28 January 1919 as the second Czech university. At its founding there were four faculties – law, medicine, natural sciences and arts. Currently there are nine faculties and 37 000 students enrolled in standard studies. More information can be found at <http://www.muni.cz>.

