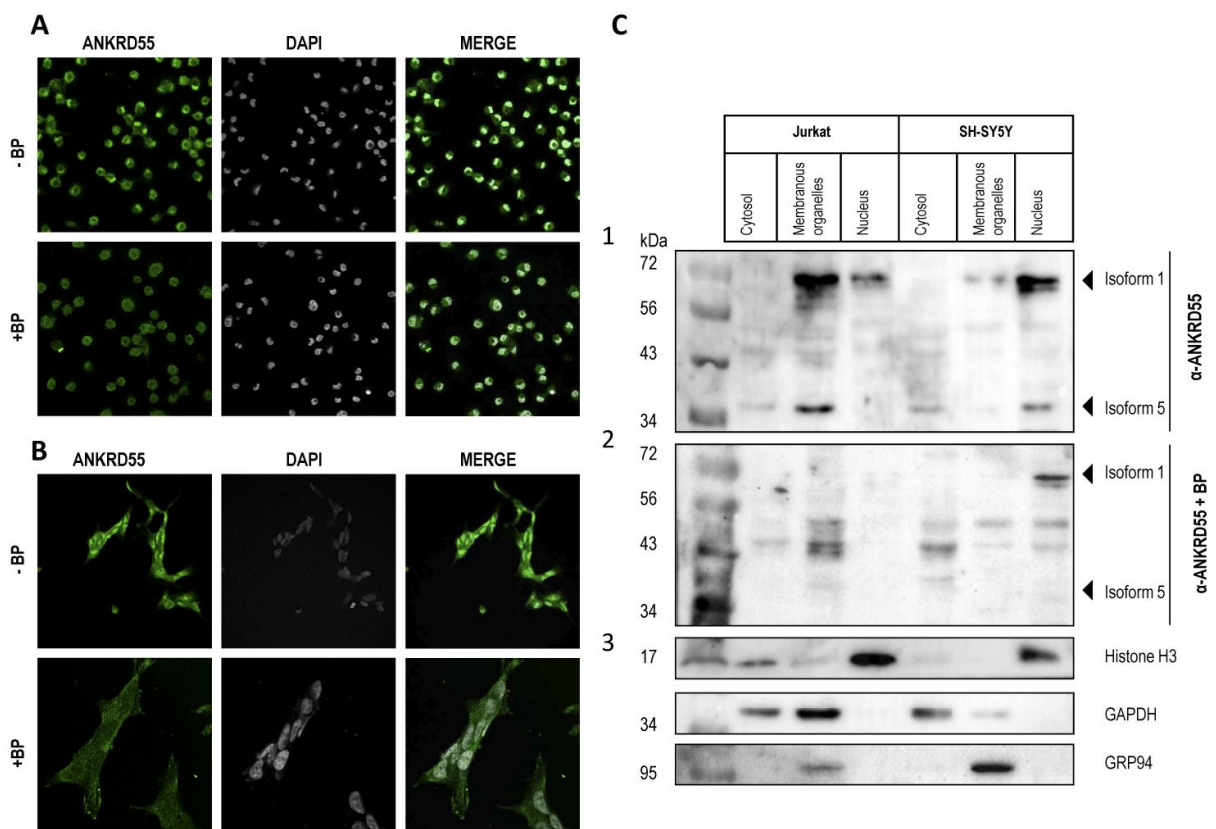


ANKRD55: A new gene involved in Multiple Sclerosis is discovered

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This image shows intracellular localization of ANKRD55 in Jurkat, SH-SY5Y and PMA-treated U937 cells. Credit: Koen Vandenbroeck

Multiple Sclerosis (MS) is a neurological disease, characterised by demyelination and the onset of chronic, neurodegenerative damage of the central nervous system. Right now, its causes are unknown although various self-immune mechanisms are known to be involved.

The research community is already aware that genetic variants lead to changes in the code of the DNA component and that in order to understand their biological effects, the effects of the expression of the corresponding gene need to be studied, in other words, the changes in the messenger RNA and the proteins.

The Neurogenomiks research group, linked to the Achucarro Basque Centre for Neuroscience (EHUgroup) and the University of the Basque Country (UPV/EHU), has just had a research article published in the prestigious scientific publication *Journal of Immunology*; it details how they have managed to show that the gene known as ANKRD55 produces 3 different transcripts of the messenger RNA, and that the genetic variant associated with MS greatly increases the production of these transcripts.

The lead author of this research, the Ikerbasque researcher Dr Koen Vandebroek, stressed that "we have also discovered and proven that this takes place specifically in the case of a particular category of immune cells, the so-called T CD4+ cells. This suggests that ANKRD55 exerts a significant biological function on these cells and which now needs to be deciphered. It is important to point out that the region of the 5qll chromosome contains various known [genes](#) that play a role in immune response. Nevertheless, our data clearly point to ANKRD55 as the key gene in this area.

T CD4+ cells are crucially important in generating protective cell immune responses and they are thought to be deregulated in [multiple sclerosis](#). This study concludes that the ANKRD55 gene may play a

fundamental role in this deregulation.

Apart from that, the team has managed to show that the ANKRD55 proteins reside in the nuclei of the [cells](#), and that suggests that they could play a significant role in the specific processes that take place in the cell nucleus such as gene transcription. This work, which has been done in collaboration with the group of Dr Carmen Guaza of the Instituto Cajal in Madrid, and Dr X. Montalban and Dr M. Comabella of the Val d'Hebron Institut de Recerca in Barcelona, constitutes a significant advance in the understanding of the biology of the ANKRD55 gene and of the proteins it expresses, given that a new player has been discovered in the neuro-inflammation process that takes place in Multiple Sclerosis. So the results of this study will strengthen an in-depth study of ANKRD55, with the ultimate aim of opening up diagnostic and therapeutic means to benefit patients who suffer from MS.

More information: A. Lopez de Lapuente et al. Novel Insights into the Multiple Sclerosis Risk Gene ANKRD55, *The Journal of Immunology* (2016). [DOI: 10.4049/jimmunol.1501205](https://doi.org/10.4049/jimmunol.1501205)

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