

RETINAL DISEASES

Identification of the unexpected role of Dystrophin Dp71

The team led by Alvaro Rendon, a CNRS Research Manager working at the *Institut de la Vision* (Vision Institute), has just demonstrated a totally unexpected role of dystrophin Dp71 in the retina, opening up new opportunities for basic and therapeutic research in the field of diabetic retinopathy, one of the leading causes of blindness in adults. The results of the team's research are published in Plos ONE.

Alvaro Rendon's team at the *Institut de la Vision* has just demonstrated the role of the dystrophin Dp71 protein, the absence of which may be responsible for a complication common to a number of retinal diseases, one of the leading causes of blindness in the modern world.

Dp71 is a membrane-associated cytoskeletal protein. It is produced by the gene responsible for Duchenne muscular dystrophy but, unlike dystrophin, is mainly expressed in the central nervous system. Back in 2003, research scientists working at the *Institut de la Vision* had already demonstrated that the absence of Dp71 could cause increased retinal sensitivity to vascular disorders – and especially retinal ischaemia, which leads to increased neuronal death – in patients with Duchenne muscular dystrophy.

Today, Alvaro Rendon's team has gone a step further: his study, conducted on an animal model devoid of Dp71, reveals marked disturbances leading to the formation of retinal oedema. Retinal oedema causes a severe reduction in visual acuity in numerous human retinal vascular diseases, including diabetic retinopathy.

This study was supported by AFM – thanks to Telethon donations –, as well as by the CNRS (French National Centre for Scientific Research), Inserm (French National Institute for Health and Medical Research) and *Université Pierre et Marie Curie* (UPMC). The results pave the way for a greater understanding and more in-depth research in the field of innovative treatments for these disorders that can potentially lead to blindness. The team's work provides further demonstration that research into rare diseases can sometimes lead to valuable discoveries with a view to tackling very common serious diseases.

To find out more:

Implication of Dp71 in Osmoregulation and Vascular Permeability of the Retina (7/10/2009) PLoS ONE 4(10). A.Sene, R.Tadayoni, T. Pannicke, A. Wurm, B. El Mathari, R. Benard, M. J. Roux, D. Yaffe, D. Mornet, A. Reichenbach, J-A. Sahel, and A. Rendon (2009).

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