

A new therapeutic target may prevent blindness in premature babies at risk of retinopathy

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Possibility of developing new, more selective drugs to control the abnormal growth of blood vessels and prevent blindness including retinopathy of prematurity, a disorder that may result in retinal detachment due to abnormal blood vessel growth in the retina of the eye.

According to a study conducted by pediatricians and researchers at Sainte-Justine University Hospital Research Center (Sainte-Justine) and Université de Montréal published online in the prestigious medical journal *Nature Medicine* on September 14, 2014, the activation of a receptor that migrates to the nucleus of nerve cells in the retina promotes the growth of [blood vessels](#). The finding opens the possibility of developing new, more selective drugs to control the [abnormal growth](#) of blood vessels and prevent blindness including retinopathy of prematurity, a disorder that may result in [retinal detachment](#) due to [abnormal blood vessel](#) growth in the retina of the eye.

"This study shows that a single receptor may play various roles depending on whether its site of action is in the nucleus or on the cell membrane," states Dr. Jean-Sébastien Joyal, MD, PhD, a pediatric intensivist at the Sainte-Justine UHC and an assistant professor at the Université de Montréal. The groundbreaking discovery has significant clinical implications, since many drugs act on this family of receptors irrespective of their site of action in the cell. "Our results are extremely encouraging. They indicate that drugs formulated to target this nuclear

receptor may one day prevent retinopathy in premature babies," continued Dr. Sylvain Chemtob, a neonatologist at Sainte-Justine and a full professor in Pediatrics, Ophthalmology and Pharmacology at the Université de Montréal.

Abnormal proliferation of blood vessels may lead to a number of disorders. Therefore, the finding may offer therapeutic potential for other conditions, particularly proliferative diabetic retinopathy and cancer. This potential still needs to be explored.

More information: The study entitled "Subcellular localization of coagulation factor II receptor-like 1 in neurons governs angiogenesis" was published in *Nature Medicine* on September 14, 2014.

Provided by University of Montreal

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