

A novel role for Ranbp9 in regulating alternative splicing in spermatogenic cells

4 December 2014

Provided by Public Library of Science

Highly expressed in the testis, a gene named Ranbp9 has been found to play a critical role in male fertility by controlling the correct expression of thousands of genes required for successful sperm production. A group of researchers led by Professor Wei Yan, at the University of Nevada School of Medicine has discovered that a loss of function of Ranbp9 leads to severely reduced male fertility due to disruptions in sperm development. A paper reporting this finding was published in *PLoS Genetics* on December 4, 2014.

Male infertility affects 1 out of 20 men of reproductive age worldwide and the underlying causes remain largely unknown. The production of functional sperm is a prerequisite for [male fertility](#), and is achieved through a complex process termed spermatogenesis, which is controlled by numerous genes that are synthesized and processed into messenger ribonucleic acid (mRNA) molecules of different sizes. Disruptions of mRNA processing would lead to aberrant mRNA contents in the developing male germ cells, failed [sperm production](#), and male infertility.

The published study demonstrates that Ranbp9 acts to control the correct processing of mRNA molecules after their syntheses from thousands of genes involved in sperm production. This finding places Ranbp9 as a master regulator of sperm production. Thus, interference of this gene may provide novel diagnostics and therapeutics for [male infertility](#) patients, as well as the development of male non-hormonal contraceptives.

More information: Bao J, Tang C, Li J, Zhang Y, Bhetwal BP, et al. (2014) RAN-Binding Protein 9 Is Involved in Alternative Splicing and Is Critical for Male Germ Cell Development and Male Fertility. *PLoS Genet* 10(12): e1004825. [DOI: 10.1371/journal.pgen.1004825](#)

APA citation: A novel role for Ranbp9 in regulating alternative splicing in spermatogenic cells (2014, December 4) retrieved 19 September 2019 from <https://medicalxpress.com/news/2014-12-role-ranbp9-alternative-splicing-spermatogenic.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.