

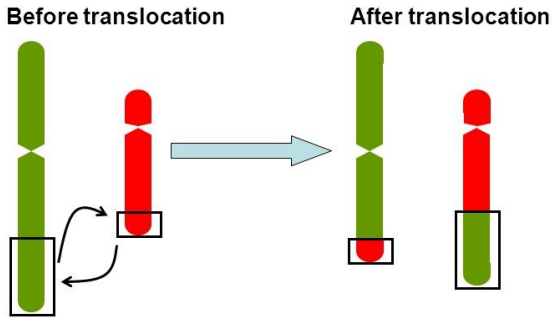
Screening Boars for Reciprocal Translocations

At Kuster Research & Consulting, Inc.

What...

Reciprocal Translocation

- Involves two chromosomes
- One break in each chromosome
- The two chromosomes exchange broken segments

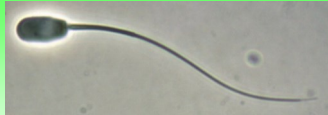


Why...

- Presence of an RTL explains approximately **half** of all hypoprolific (low litter size) boars, and can be detected prior to breeding a single sow
- As the main effect is smaller litters, most sows remain pregnant, thus *conception rate is not a reliable indicator*
- On average, boars carrying an RTL are responsible for a 40% reduction in litter size (range: 10% to 100%)
- RTL's are heritable, thus a single affected nucleus boar can impact many sons destined for commercial AI use
- Prevalence of RTL's in an unscreened population varies, with reports of 1.5% to 4.0%
- New RTL's occur in each new generation at 0.5%

Impact...

- After meiosis, sperm (or oocytes) of Reciprocal Translocation (RTL) carriers contain either the normal or affected chromosomes, and those with RTL's can fertilize, leading to either gestational loss or more carrier pigs.



How...

Contact KRC to set up a submission date

- Blood is collected and shipped to KRC
- Blood is cultured and white blood cells are harvested
- Slides are made, stained and chromosomes are imaged
- Metaphase images (chromosomes) are analyzed for translocations or other defects
- A report is issued, detailing results

Blood



Metaphase



Karyotype



Reciprocal Translocation 38,XY,t(8q;15q+)

(Bands from the bottom of the 8q arm moved to the bottom of the 15q arm)



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...from concept to conception...

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