

## University of Groningen

### Identification and characterization of the male-determining gene of the housefly, *Musca domestica*

Sharma, Akash

**IMPORTANT NOTE:** You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

*Document Version*

Publisher's PDF, also known as Version of record

*Publication date:*

2018

[Link to publication in University of Groningen/UMCG research database](#)

*Citation for published version (APA):*

Sharma, A. (2018). *Identification and characterization of the male-determining gene of the housefly, Musca domestica*. [Thesis fully internal (DIV), University of Groningen]. University of Groningen.

**Copyright**

Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

The publication may also be distributed here under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license. More information can be found on the University of Groningen website: <https://www.rug.nl/library/open-access/self-archiving-pure/taverne-amendment>.

**Take-down policy**

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

*Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.*

Propositions accompanying the PhD thesis:

## **Identification and characterization of the male-determining gene of the housefly, *Musca domestica***

Akash Sharma

1. *Musca domestica* male determiner (*Mdmd*) originated as a duplication of the spliceosomal factor gene *CWC22* (*nucampholin*) and subsequently acquired a male-determining function. (this thesis)
2. Translocation of *Mdmd* to different genomic sites is the cause of the existence of fly populations with *M*-loci either on the Y-chromosome or on an autosome. (this thesis)
3. The fact that no *Mdmd* homologous sequences have been detected in males with the *M*-locus on chromosome I and the lack of sex-reversed phenotypes after embryonic RNAi suggests that this strain carries a different male-determining gene. (this thesis)
4. The enormous diversity of primary signals at the top of insect sex-determination cascades makes identification of male-determining genes in insects a humongous task. (this thesis)
5. The housefly is an ideal model organism to investigate evolutionary transitions in sex determination systems. How and why these transitions occur is an exciting topic for future investigation.
6. As alternative splicing of sex determination genes, a process that is very sensitive to temperature, is a hallmark of insect sex determination, temperature could be responsible for the geographical pattern of the polymorphic housefly sex determination system.
7. Open disagreement is far more rewarding than silent acceptance.
8. I consider it extremely doubtful whether the happiness of the human race has been enhanced by the technical and industrial developments that followed in the wake of rapidly progressing natural science. (Erwin Schrödinger)
9. It must be remembered that the purpose of education is not to fill the minds of students with facts...it is to teach them to think. (Robert M. Hutchins)