

De-masculizing RNA determines sex in silkworms, a new pathway for sex determination in animals

In the silk business, sex is money. Male silkworms weave cocoons with more silk of a higher quality than females do, and the multibillion dollar sericulture industry has long sought an easy way to breed only males. That might now be a realistic goal, as researchers have identified the process that determines sex in the silkworm *Bombyx mori*¹. The sex factor is found to be a small RNA molecule — the first time that anything other than a protein has been implicated in a sex-determination process.

In nearly all Lepidoptera — the order that includes moths and butterflies — sex is determined by a WZ chromosome system, in contrast to the XY system used in mammals. Female silkworms carry W and Z sex chromosomes, whereas males boast a pair of Z chromosomes.

But efforts to identify the genes on the W chromosome that make silkworms female have come up short... Susumu Katsuma and his team report in *Nature* today that one such molecule, which the authors called Fem, is specific to female silkworms, suggesting that it has a role in sex determination. The Fem RNA breaks down a corresponding molecule made by a gene known as Masculinizer, which is found on the Z chromosome. When the researchers silenced Masculinizer, embryos execute a genetic programme that makes female tissue.

Read the full, original story: [Silkworm sex factor is no ordinary gene](#)