

Linkage and mapping analysis of a non-susceptibility gene to densovirus (nsd-2) in the silkworm, *Bombyx mori*.

Ogoyi, DO; Kadono-Okuda, K; Eguchi, R; Furuta, Y; Hara, W; Nguu, EK; Nagayasu, K

Date: 2003-04

Abstract:

Nonsusceptibility to *Bombyx mori* densovirus type 2 (BmDENV-2) is controlled by a recessive non-susceptibility gene, nsd-2 (non-susceptibility to DNV-2) in *B. mori*. Taking advantage of a lack of crossing over in females, reciprocal backcrossed F1 (BF1) progeny were used for linkage analysis and mapping of nsd-2 using silkworm strains C124 and 902, which are classified as being highly susceptible and non-susceptible to DNV-2, respectively. BF1 larvae were inoculated twice with DNV-2 virus at the first and second instar stages. DNA was extracted from each of the surviving fifth instar larvae and analysed by RFLP inheritance patterns using probes specific to each of the 28 linkage groups of *B. mori*. Our results indicated that the non-susceptibility gene was linked to linkage group 17, since all surviving larvae showed the homozygous profile of strain 902 in their genotype. The other linkage groups showed mixtures of heterozygous and homozygous genotypes, indicating an independent assortment. A linkage map of 30.6 cM was constructed for linkage group 17 with nsd-2 mapped at 24.5 cM and three closely linked cDNA markers were identified.

[Show full item record](#)