FBrf 0125099

Laboratory of Genetics
Department of Biology
UNIVERSITY OF TURKU
FIN-20014 TURKU
FINLAND

Turku, February 3rd, 2000

Dr. Rachel Drysdale
FlyBase (Cambridge)
Department of Genetics
University of Cambridge
Downing Street
Cambridge, CB2 3EH
United Kingdom

Dear Dr. Drysdale,

Please find enclosed a short note entitled "*Notch* affects the development of *Drosophila* machrochaeta through lateral inhibiton but that of wing veins through induction" which is submitted to be archieved by the FlyBase as a personal communication.

Yours sincerely,

Petter Portin

Prof. Petter Portin
Tel: [redacted]
Telefax: [redacted]
E-mail: [redacted]

Notch affects the development of *Drosophila* machrochaeta through lateral inhibition but that of wing veins through induction

Petter Portin and Mirja Rantanen

Laboratory of Genetics, Department of Biology, University of Turku, FIN-20014 Turku, Finland

We irradiated first instar larvae of *Drosophila melanogaster* with either the genotype $w^a\ Ax^{59d}\ f /\ M(1)o^{sp}$ or $w^a\ Ax^{59d}\ ct / M(1)o^{sp}$ with 1000 R of X-rays in order to get fast growing homozygous $w^a\ Ax^{59d}\ f / w^a\ Ax^{59d}\ f$ or $w^a\ Ax^{59d}\ ct / w^a\ Ax^{59d}\ ct$ clones on the *Minute* background. When investigating these clones we found firstly that patches homozygous for the antimorphic gain-of-function allele, Ax^{59d}, of the *Notch* gene, and marked with *forked*, carried few, if any, sensory machrochaeta but machrochaeta could develop along the clone borders. Secondly we found that wing vein gaps homozygous for Ax^{59d}, marked with *cut*, were significantly longer (86 ± 36 hundreds of millimeter) than the gaps in the veins of the opposite wing (57 ± 27) (F= 9.533; P= 0.003). Further we observed that wing vein gaps extended slightly longer on the dorsal surface than on the ventral surface of the wing .

These results indicate that the effect of the *Notch* gene on the development of the sensory machrochaeta is based on lateral inhibition (which fact is already well established), but the effect of *Notch* on the longitudinal growth of the wing vein is of inductive nature which is a new observation. In addition, as has also been observed earlier, we show that the development of ventral veins seem to be dependent on the inductive action of the dorsal surface veins.