Table 3. Protein band changes in the hemolymph of male larvae between 60-74 hour period in band C-complex. Exp. = treated with 2.5% glutaramide for one hour.

Ages	Genotypes: +						B						BB						BiBi					
	Contr.			Exp.			Contr.			Exp.			Contr.			Exp.			Contr.			Exp.		
	C_1	C_2	C_3	C_1	C_2	C_3	C_1	C_2	C_3	C_1	C_2	C_3	C_1	C_2	C_3	C_1	C_2	C_3	C_1	C_2	C_3	C_1	C_2	C_3
60	-	-	-	-	-	-	-	-	-	-	+	+	-	-	+	±	+	+	-	-	d	-	-	d
62	single diffuse band			-	-	-	+	-	+	-	+	+	-	-	-	±	+	+	-	-	d	-	-	+
64	single diffuse band			-	-	-	-	-	+	-	+	+	+	+	+	±	+	+	-	-	+	-	+	+
66	single diffuse band			+	+	+	+	+	+	-	-	+	+	+	+	+	+	+	-	-	+	-	-	d
68	single diffuse band			+	+	+	-	-	-	-	-	+	+	+	+	+	+	+	-	-	+	-	-	-
70	single diffuse band			-	-	-	-	-	+	-	+	+	-	-	-	-	+	+	-	-	+	-	-	-
72	single diffuse band			-	-	-	-	-	+	-	+	+	-	-	±	-	+	+	-	-	+	-	-	-
74	single diffuse band			+	+	+	-	-	+	-	+	+	-	-	±	-	+	+	-	-	+	-	-	d

+ Denotes distinct band
± Denotes less distinct band
- Denotes absence of band
d Denotes diffuse band

Minamori, S. and K. Sugimoto. Hiroshima University, Hiroshima, Japan. Production of delta-retaining sensitive chromosomes by EMS in D. melanogaster.

The extrachromosomal element denoted by delta has a virus-like nature in killing host and damaging host chromosomes, and is retained steadily by a specific second chromosome line symbolized by S^b, S^r or ID^b (S^b, sensitive to killing action of delta b, but not to delta r; S^r, sensitive to delta b and r; ID^b, insensitive to delta b and r). The association between the chromosomes and delta is inseparable. In earlier reports (Minamori 1969, 1971), it was assumed that delta may be a copy of a chromosomal gene or of a certain agent integrating inseparably into the chromosome. These alternative hypotheses were examined by the following experiment.

Cy-heterozygous males for an insensitive second chromosome, I-521, which retains no delta were fed with 0.025M solution of ethyl methane sulfonate (EMS, alkylating mutagen; cf. Lewis and Bacher 1968) for 24 hours, and then crossed with Cy/Pm females for two days. Single Cy/I-521 sons of this mating were crossed with Cy/bw^D females (bw^D-chromosome is S^b, retains delta b), and the mortality of the I-521/bw^D progeny was checked. Five out of 1970 chromosomes (I-521) tested were sensitive, although no sensitive chromosome was obtained in the control (0/1733). Among the five, four chromosomes were S^b and one was S^r. These lines were maintained in the heterozygous condition for Cy-chromosome at 25°C. At the tenth generation after establishment, each line was tested for delta - retention by mating females with Cy/S^r-20 males. All the four S^b lines carried delta b, and the S^r line carried delta r. These findings indicate that delta-retaining sensitive chromosomes are inducible by mutation, and lead to the interpretation that delta may be a product of a chromosomal gene, but not a copy of integrating agent.

References: Lewis, E.B. and F. Bacher 1968 DIS 43:193; Minamori, S. 1969 Japan. J. Genet. 44:347-354; _____1971 Japan. J. Genet. 46:169-180.