Lakovaara, S. and A. Saura. University of Helsinki, Helsinki, Finland. Location of 13 enzyme loci in D. willistoni.

By the means of starch gel electrophoresis and by using the following visible marker stocks: w^e y sn ru, w^e lz and se (X-chromosome), bw abb px (chromosome II) and Dl p and p (chromosome III), the chromosomal locations presented in the tabulation have been established for thirteen enzyme loci in D. willistoni. The observed locations are compared with those of corresponding loci of D. melanogaster in the cases where information on the latter was available. The locations fit the proposed homology between the chromosomes of D. willistoni and D. melanogaster (1). Due to inversions, loci in chromosome III of D. willistoni could not be reliably located and the locations in chromosomes X and III are tentative.

Locus	Location in D. willistoni	Location in D. melanogaster
Adenylate kinase-2 (Adk-2)	1 - 49	-
Alcohol dehydrogenase (Adh)	2 - 66	2 - 50.1 (2)
Alkaline phosphatase-1 (Aph-1)	1 - 58	-
Esterase-5 (Est-5)	2 - 57	-
Esterase-7 (Est-7)	1 - 52	3 - 36.8 (Est-6) (2)
α-Glycerophosphate dehydrogenase (α-Gpdh)	2 - 59	2 - 20.5 (2)
Isocitrate dehydrogenase (Idh)	1 - 60	3 - 27.1 (2)
Leucine aminopeptidase-5 (Lap-5)	3	-
Malate dehydrogenase-2 (Mdh-2)	2 - 62	2 - 41.2 (2)
Malic enzyme-1 (Me-1)	3	3 - 53.1 (4)
Octanol dehydrogenase-1 (Odh-1)	3	3 - 49.2 (2)
Phosphoglucomutase-1 (Pgm-1)	1 - 70	3 - 43.4 (2)
Tetrazolium oxidase (To)	1 - 46	3 - 32.5 (3)

Lengths of D. willistoni chromosomes: X, 90 units; II, 78 units; III, 50 units (1).

References: 1. Spassky, B. and Th. Dobzhansky, 1950 Heredity 4:201; 2. Fox, D.J., E. Abächerli and H. Ursprung, 1971 Experientia 27:218; 3. Jelnes, J.E., 1971 Hereditas 67:291; 4. Franklin, J.R. and W. Rumball 1971 DIS 47:37.

Gerasimova, T.I. and E.V. Ananjev. Kurchatov's Institute of Atomic Energy, Moscow, USSR. Cytogenetical localization of structural gene Pgd for 6-phosphogluconate dehydrogenase in D. melanogaster.

The structural gene Pgd for 6-phosphogluconate dehydrogenase (6PGD) has been located on the X chromosome at 0.65 position between the broad and prune. For its localization, w^+Y chromosome and Df(1)Pgd-kz deficiency were employed. Isozyme patterns in polyacrylamide gel electrophoresis and estimates of total 6PGD activity in males with w^+Y chromosome and Pgd^B allele in X chromosome proved the location of Pgd^A allele in the w^+Y duplication (1). The w^+Y chromosome contains the insertion of a part of X chromosome including the 2D1-3D6 region. Since the pn locus has been located at the 2D5-6 region(2) to the right of Pgd (1) the latter may be concluded to lie on the 2D1-2D6 region. The more exact localization of Pgd locus has been made using the deficiency Df(1)Pgd-kz obtained by γ-irradiation of Canton S males carrying Pgd^B allele. The electrophoretic patterns of isozymes from Pgd^A/Df(1)Pgd-kz heterozygotes and the decreased level of 6PGD activity in these heterozygotes suggested that the X chromosome with Pgd-kz deficiency lacks Pgd locus. Genetic analysis has shown that this deficiency covers pn and kz loci, but not broad and white while cytologically it was identified as Df(1)2D1.2-2D6;2F3.4-3A1 according to the revized Bridges map. Thus, the results obtained for the two rearrangements (w^+Y and Df(1)Pgd-kz) suggested the location of Pgd locus in the 2D3-6 region. This conclusion is in accord with the data of Seecoff et al. (3) showing the presence of Pgd locus in the X chromosome with 2D6-3C2 deficiency.

References: (1) Gvozdev, V.A., V.J. Birstein, L.Z. Faizullin 1970 Moleculjarnaja Biologia (Russ.) 4:876; (2) Lindsley, D.L. and E.H. Grell Genetic Variations of D. melanogaster; (3) Seecoff, R.L. et al. 1969 Proc. Nat. Acad. Sci. USA 62:528.