

CURRICULUM VITAE

Stanley Zimmering, PhD
Professor Emeritus
Dept. of Molecular Biology, Cell Biology and Biochemistry
Brown University
D.O.B. 4/14/24

EDUCATION

Brooklyn College, B.A. Biology, 1947
Columbia University, M.A. Biology, 1949
University of Missouri, Ph.D. Genetics, 1953

Title of Ph.D thesis: "Genetic study of a translocation heterozygote in *Drosophila melanogaster*".

Thesis Supervisor: Dr. Edward Novitski

1953-55 Research Associate to K. W. Copper, University of Rochester, Rochester, NY
1955-59 Assistant Professor of Biology, Trinity College, Hartford, CT
1959-62 Research Executive of H. J. Muller's *Drosophila* Genetics Group, Indiana University, Bloomington, IN (Dr. Muller was the Nobel Laureate for Biology and Medicine in 1945.)
1962-66 Associate Professor of Biology, Brown University, Providence, RI
1966-90 Full Professor of Biology, Brown University
1969-70 Senior Investigator, City University of Rome, Rome, Italy
1977-78 Senior Research Officer, Department of Radiation Genetics and Mutagenesis, Sylvius Laboratory, University of Leiden, The Netherlands
1990—Full Professor Emeritus, Brown University

PROFESSIONAL APPOINTMENTS

Editorial Board, Environmental Mutagenesis, 1981-1986
Editorial Board, Revista Internacional de Contaminacion Ambiental, (International Journal (Spanish-English) on Environmental Contamination, 1995-
Reviewer of manuscripts for Mutation Research, 1995–2005
Consultant, EPA Reproductive Effects Assessment Group (REAG), 1984-1986
Member, EPA Research Grants Panel 1984-1989
Consultant, *Drosophila* Laboratory of Chemical Mutagenesis, National Autonomous University of Mexico (UNAM), Mexico City, 1986-1990
Consultant, *Drosophila* Laboratory, National Institute for Nuclear Research of Mexico (ININ) Salazar, Mexico, 1986 – 2016

PUBLICATIONS

110 peer reviewed publications in *drosophila* dealing in germ and somatic cell genetics, effects of radiation, genetic toxicology, and chromosome behavior.

List of Peer Reviewed Publications

1. Zimmering, S. 1948. Competition between Drosophila pseudoobscura and Drosophila melanogaster in population cages. Amer. Nat. 82: 326-330.
2. Spassky, B., S. Zimmering and Th. Dobzhansky 1950. Comparative genetics of Drosophila prosaltans. Heredity 4: 189-200.
3. Zimmering, S. 1955. A genetic study of segregation in a translocation heterozygote in Drosophila. Genetics 40: 809-825.
4. Cooper, K.W., S. Zimmering, and J. Krivshenko 1955. Interchromosomal effects and segregation. Proc. Nat. Acad. Sci. 41: 911-914.
5. Zimmering, S. 1958. A simultaneous measure of interchromosomal effects on autosomal crossing over and sex chromosome nondisjunction in Drosophila. Genetics 43: 354-361.
6. Zimmering, S. 1959. Modification of abnormal gametic ratios in Drosophila. I. Evidence for an influence of Y chromosomes and major autosomes on gametic ratios from Bar-Stone translocation males. Genetics 45: 1253-1268.
7. Zimmering, S. and E. Barbour 1961. Modification of abnormal gametic ratios in Drosophila. II. Evidence for a marked shift in gametic ratios in early vs. later sperm batches from A-type Bar-Stone translocation males. Genetics 46: 1253-1260.
8. Zimmering, S. 1962. Genetic evidence of X-ray induced exchanges occurring at a four-strand stage in Drosophila spermatocytes. J. Hered. 53: 254-256.
9. Zimmering, S. and M. Perlman 1962. Modification of abnormal gametic ratios in Drosophila. III. Probable time of the A-type effect in Bar-Stone translocation males. Can. J. Genet. Cytol. 4: 333-336.
10. Muller, H.J., I. Oster, and S. Zimmering 1962. Are chronic and acute gamma irradiation equally mutagenic in Drosophila? Proc. of Conf. on Repair from Genetic Radiation Damage and Differential Sensitivity, Leiden, The Netherlands. Edited by F.R. Sobels, pp. 275-311.
11. Zimmering, S. 1963. The effect of temperature on meiotic loss of the Y chromosome in the male Drosophila. Genetics 48: 133-138.
12. Zimmering, S. and C. Wu 1963. Radiation induced X-Y exchange and nondisjunction in spermatocytes of the immature testis of Drosophila. Genetics 48: 1619-1623.
13. Zimmering, S. and C. Wu 1964. X-Y nondisjunction and exchange induced by X rays in primary spermatocytes of the adult Drosophila. Genetics 49: 499-504.
14. Zimmering, S. and C. Wu 1964. Meiotic X-Y exchange and nondisjunction induced by irradiation in the Drosophila male. Genetics 50: 633-638.

15. Zimmering, S. and G. Kirshenbaum 1964. Radiation induced deletions in spermatids and spermatocytes of Drosophila. *Z. Vererbungsl.* 95: 301-305.
page
16. Zimmering, S. and A. Fanucci 1965. Assortment of non-randomly disjoining chromatids. *Can. J. Genet. Cyto.* 7: 250-253.
17. Zimmering, S. and R. Green 1965. Temperature-dependent transmission rate of a univalent X chromosome in the male Drosophila melanogaster. *Can. J. Genet. Cyto.* 7: 453-456.
18. Zimmering, S., R. Johnsen and G. Fowler 1966. Poisson analysis on the distribution of X-ray induced crossovers in spermatocytes of Drosophila. *Can. J. Genet. Cytol.* 8: 216-219.
19. Zimmering, S. and G. Fowler 1966. X-irradiation of the Drosophila male and its effect on the number of sperm transferred to the female. *Z. Vererbungsl.* 98: 150-151.
20. Zimmering, S. and R. Johnsen 1966. Simultaneous measure of X-ray induced X-Y and autosomal crossingover in spermatocytes of Drosophila. *Z. Vererbungsl.* 98: 137-140.
21. Zimmering, S. and J. Scott 1968. Measurements of X-ray induced mutational damage in stage-14 oocytes of Drosophila. *Mutation Res.* 6: 179-180.
22. Fowler, G.L., K. Erosevich and S. Zimmering 1968. Distribution of sperm in the storage organs of the Drosophila melanogaster female at various levels of insemination. *Molec. Gen. Genetics* 101: 120-122.
23. Zimmering, S. and G. Fowler 1968. Progeny: sperm ratios and non-functional sperm in Drosophila melanogaster. *Genetical Res.* 12: 359-363.
24. Zimmering, S., G. Fowler, J. Barnabo, and J. Femino 1970. Progeny: sperm ratios and segregation-distorter (SD) in Drosophila melanogaster. *Genetics* 42: 61-64.
25. Zimmering, S., L. Sandler and B. Nicoletti 1970. Mechanisms of Meiotic Drive. *Annual Rev. of Genetics* 4: 409-436.
26. Osgood, C. and S. Zimmering 1972. Measurement of radiation-induced dominant lethals in stage-14 oocytes of Drosophila. *Mutation Res.* 15: 355-357.
27. Golden, B. and S. Zimmering 1972. Behavior of quasi-bivalents formed by heterologous interchange at meiosis in the male Drosophila. *Mutation Res.* 16: 222-224.
28. Zimmering, S. and E. Bendbow 1973. Meiotic behavior of asymmetric dyads in the male Drosophila. *Genetics* 73: 631-638.
29. Zimmering, S. 1973. A note on Drosophila as a mutagenicity test system. *Environ. Health Persp.* 6: 111-113.

30. Committee 17 of the Environmental Mutagen Society. 1975. Environmental Mutagenic Hazards. *Science* 187: 503-514.
31. Legator, M. and S. Zimmering 1975. Integration of mammalian, microbial and Drosophila procedures for evaluating chemical mutagens. *Mutation Res.* 31: 181-188.
32. Legator, M. and S. Zimmering 1975. Genetic Toxicology. *Annual Rev. of Pharmacology* 15: 287-308.
33. Zimmering, S. 1975. Genetic and cytogenetic aspects of altered segregation phenomena in Drosophila. In: Biology of Drosophila. Vol. 1b (E. Novitski and M. Ashburner, eds.) Academic Press, London, pp. 569-613.
34. Zimmering, S. and C. Osgood 1975. Preliminary evidence of the influence of caffeine concentration on modification of maternal repair of chromosome breaks induced by X-rays in the paternal genome of Drosophila. *Mutation Research* 30: 289-292.
35. Zimmering, S. 1975. Utility of Drosophila for detection of potential environmental chemical mutagens. *Annals N.Y. Acad. Sci.* 269a: 26-33.
36. Mark, H. and S. Zimmering 1976. Further notes on the behavior of induced asymmetric dyads in the male of Drosophila melanogaster. *Mutation Res.* 36: 177-192.
37. Legator, M., S. Zimmering and T. Connor 1976. The use of indirect indicator systems to detect mutagenic activity in human subjects and experimental animals. In: Chemical Mutagens: Principles and Methods for their Detection. Vol. 4, Plenum Press, NY (A. Hollaender, eds.) pp. 171-191.
38. Mark, H. and S. Zimmering 1977. Centromeric effect on the degree of nonrandom disjunction in the female Drosophila melanogaster. *Genetics* 86: 121-132.
39. Zimmering, S. C. Osgood and R. Kofkoff 1977. Survival of caffeine-fed adult males and females from strains of Drosophila melanogaster. *Mutation Res.* 43: 453-456.
40. Green, R. and S. Zimmering 1977. Genetic analysis of X-ray-induced interchanges in primary spermatocytes of Drosophila melanogaster between a rod X chromosome and a Y chromosome. *Mutation Res.* 43: 449-452.
41. Legator, M., R. Kouri, A. Parmar, S. Zimmering, C. Putnam, R. Latt, J. Heicklen, J. Meagher, J. Weaver and N. Kelly 1979. Mutagenic testing of Diethylhydroxylamine, Nitroethane and Diethylamine Hydrogen Sulfite. *Environmental Res.* 20: 99-124.
42. Zimmering, S. 1979. Evidence for a mutagenic effect of the narcotic antagonist, Naltrexone, in germ cells of Drosophila. *Mutation Res.* 66: 129-131.
43. Zimmering, S. 1979. Evidence for the absence of a mutagenic effect of Methadone in germ cells of Drosophila melanogaster. *Mutation Res.* 66: 133-134.

44. Legator, M. and S. Zimmering 1979. Review of the genetic effects of caffeine. *J. Environ. Sci. and Health* 13: (2) 135-188.
45. Osgood, C. and S. Zimmering 1979. Effects of caffeine on maternal repair systems in *Drosophila melanogaster*: concentration-dependent reversals of the effects of caffeine on chromosome loss and autosome-autosome translocations induced by X-rays in the paternal genome. *Mutation Res.* 63: 79-86.
46. Osgood, C. and S. Zimmering 1980. Evidence for an increase in x-ray-induced translocation frequency in oocytes of caffeine-treated *Drosophila* females. *Mutation Res.* 71: 207-210.
47. Zimmering, S., A. Hartmann and S. Cooper 1980. Evidence that the repair deficient mei-9^a female in *Drosophila melanogaster* is a strong potentiator of chromosome loss induced in the paternal genome by dimethylnitrosamine. *Environ. Mutagen* 2: 187-190.
48. Cooper, S. and S. Zimmering 1981. A genetic study of the repair deficient mei-9^a mutation in *Drosophila* on spontaneous and X-ray induced paternal sex chromosome loss. *Mutation Res.* 80: 281-287.
49. Zimmering, S. and S. Cooper 1980. A maternal effect in homozygous mei-9^a mei-41^{D5} repair deficient *Drosophila melanogaster* females influencing the recovery rate of progeny bearing a Y chromosome. *Environ. Mutag.* 2: 543-545.
50. Zimmering, S. and K.L. Kammermeyer 1980. Potentiation of chromosome loss induced in the paternal genome by methyl methanesulfonate and procarbazine following matings with repair deficient mei-9^a females of *Drosophila*. *Environ. Mutag.* 2: 515-520.
51. Zimmering, S., A. Hartmann and A. Song 1981. The repair deficient mei-9^a *Drosophila* female potentiates chromosome loss induced in the paternal genome by diethylnitrosamine. *Mutation Res.* 91: 123-128.
52. Cooper, S. and S. Zimmering 1981. A genetic study of the effects of the repair-deficient mei-9^a mutation in *Drosophila* on spontaneous and X-ray induced paternal sex chromosome loss. *Mutation Res.* 80: 281-287.
53. Cooper, S. and S. Zimmering 1981. Genetic study on the effects of the repair deficient mutant females mei-9^a, mei41^{D5}, mus101^{D1}, mus104^{D1} and mus302^{D1} of *Drosophila* on spontaneous and X-ray induced chromosome loss in the paternal genome. *Mutation Res.* 81: 345-356.
54. Zimmering, S. 1981. The repair deficient mutant mei-9^a confers high sensitivity on the test assaying for chemically induced chromosome loss in *Drosophila melanogaster*. In: *Health Effects Investigations of Shale Oil Development*. (W. Griest, M. Guerin and D. Coffin, eds.) Ann Arbor Science Publishers, Inc. pp 209-223.
55. Zimmering, S. and N. Deitemeyer 1981. A further note on the utility of the excision repair-deficient mei-9^a females of *Drosophila melanogaster* in detecting chromosome breakage induced by procarbazine in male germ cells. *Environ. Mutag.* 3: 293-295.

56. Zimmering, S. 1981. Review of the current status of the mei-9^a test for chromosome loss in Drosophila melanogaster: An assay with radically improved detection capacity for chromosome lesions induced by methyl methanesulfonate (MMS), Dimethylnitrosamine (DMN), and especially Diethylnitrosamine (DEN) and Procarbazine. Mutation Res. 83: 69-80.
57. Zimmering, S. 1981. Chromosome loss induced by Procarbazine and Diethylnitrosamine in Drosophila from matings of treated males with repair-deficient mei-9^a, mei-41^{D5}, mus101 and mus104 females. Environ. Mutag. 3: 687-690.
58. Zimmering, S. 1982. Preliminary data suggesting that females of the repair-deficient strain designated st mus302 are strong potentiators of chromosome loss induced by procarbazine and diethylnitrosamine (DEN) in the male genome of Drosophila. Mutation Res. 103: 141-144.
59. Zimmering, S. 1982. Induced chromosome loss following treatment of postmeiotic cells of the Drosophila melanogaster male with MMS and DMN and matings with repair-proficient females and the repair deficient females mei-9^a and st mus302. Mutation Res. 94: 79-86.
60. Zimmering, S. 1982. Note on the utility of the st mus302 test for chromosome loss in a blind test of an environmental compound for chromosome breakage in Drosophila. Mutation Res. 104: 117-119.
61. Zimmering, S. 1982. A Note on the utility of repair-deficient st mus302 Drosophila females in detecting chromosome loss and sex-linked recessive lethals induced in the male genome by methyl methanesulfonate (MMS) and dimethylnitrosamine (DMN). Environ. Mutag. 3: 291-293.
62. Zimmering, S. and K.L. Kammermeyer 1982. On the nature of partial losses of the Y chromosome from treatment of ring-X/B^SY⁺ males with diethylnitrosamine (DEN) or procarbazine and matings with repair deficient st mus302 females of Drosophila. Mutation Res. 104: 121-123.
63. Zimmering, S. 1982. Chromosome loss induced by cyclophosphamide in ring-X males of Drosophila melanogaster. Mutation Res. 105: 85-88.
64. Zimmering, S. 1982. Induced chromosome loss with nitrosopiperidine in the male Drosophila melanogaster. Environ. Mutag. 4: 521-524.
65. Zimmering, S. 1982. The mei-9^a test for chromosome loss/breakage in Drosophila is positive in assays of acetin and 2,3-dibromo-1-propanol. Mutation Res. 105: 329-331.
66. Zimmering, S. 1983. Induced chromosome loss from matings of procarbazine-treated rod-X males with repair-deficient mei-9^a or st mus302 females of Drosophila. Mutation Res. 119: 299-302.
67. Zimmering, S. 1983. 1,2-dibromo-3-chloropropane (DBCP) is positive for sex-linked recessive lethals, heritable translocations and chromosome loss in Drosophila. Mutation Res. 119: 287-288.

68. Zimmering, S. and K.L. Kammermeyer 1983. Comparison of excision repair-deficient mei-9^a and mus201 females in the test for paternal sex chromosome loss in Drosophila with procarbazine and diethylnitrosamine (DEN). Environ. Mutag. 5: 235-237.
69. Zimmering, S. 1983. Selective elimination of potential ring-X as opposed to rod-X losses in matings of males treated with diepoxybutane (DEB) to repair deficient st mus302 females of Drosophila melanogaster. Environ. Mutag. 5: 363-365.
70. Zimmering, S. 1983. The mei-9^a test for chromosome loss in Drosophila: A review of assays of 21 chemicals for chromosome breakage. Environ. Mutag. 5: 907-921.
71. EPA Gene-Tox Committee Report 1983. The sex-linked recessive lethal test for mutagenesis in Drosophila melanogaster. Reviews in Genetic Toxicology. Mutation Res. 123: 183-279.
72. Valencia, R., S. Abrahamson, W.R. Lee, E.S. Von Halle, R.C. Woodruff, F.E. Würigler and S. Zimmering. EPA Gene-Tox Committee Report 1984. Chromosome mutation tests for mutagenesis in Drosophila melanogaster. Reviews in Genetic Toxicology. Mutation Res. 134: 61-88.
73. Woodruff, R., J. Mason, R. Valencia and S. Zimmering 1984. Chemical mutagenesis testing in Drosophila. I. Comparison of positive and negative control data for sex-linked recessive lethal mutations and reciprocal translocations in three laboratories. Environ. Mutag. 6: 189-202.
74. Zimmering, S. and E. Thompson 1984. Comparison of rates of sex-linked recessive lethals induced by Ethylnitrosourea (ENU) in postmeiotic cells of the male and oogonia of the female Drosophila. Environ. Mutag. 6: 617-619.
75. Zimmering, S., J. Mason, R. Valencia and R. Woodruff 1985. Chemical mutagenesis testing in Drosophila. II. Results of 20 coded compounds tested for the National Toxicology Program. Environ. Mutag. 7: 87-100.
76. Valencia, R., J. Mason, R. Woodruff and S. Zimmering 1985. Chemical mutagenesis testing in Drosophila. III. Results of 48 coded compounds tested for the National Toxicology Program. Environ. Mutag. 7: 325-348.
77. Yoon, J., J. Mason, R. Valencia, R. Woodruff and S. Zimmering 1985. Chemical mutagenesis testing in Drosophila. IV. Results of 45 coded compounds tested for the National Toxicology Program. Environ. Mutag. 7: 349-367.
78. Woodruff, R., J. Mason, R. Valencia and S. Zimmering 1985. Chemical mutagenesis testing in Drosophila. V. Results of 53 coded compounds tested for the National Toxicology Program. Environ. Mutag. 7: 677-702.
79. Kammermeyer, K.L. and S. Zimmering 1985. Influence of the female genotype in processing premutational lesions induced by ethylnitrosourea (ENU) in male germ cells of Drosophila. Mutation Res. 144: 77-79.

80. Mason, J., R. Valencia, R. Woodruff and S. Zimmering 1985. Genetic drift and seasonal variation in spontaneous mutation frequencies in Drosophila. Environ. Mutag. 7: 663-676.
81. Zimmering, S., J. Mason and C. Osgood 1985. Current status of aneuploidy testing in Drosophila. Mutation Res. 167: 71-87.
82. Zimmering, S. 1986. Aneuploidy in Drosophila. In: Aneuploidy: Incidence and Etiology. (A. Sanberg and B. Vig, eds.). A. Liss, Inc., NY, pp. 147-178.
83. Zimmering, S. and E. Thompson 1987. Mutagenesis with ethylnitrosourea (ENU) in oogonia of repair-deficient mus(2)201^{D1} Drosophila females. Mutation Res. 192: 55-58.
84. Mason, J., C. Aaron, W. Lee, P.D. Smith, A. Thakar, R. Valencia, R.C. Woodruff, F.E. Würigler and S. Zimmering 1987. A guide for performing germ cell mutagenesis assays using Drosophila melanogaster. Mutation Res. 189: 93-102.
85. Zimmering, S., E. Thompson, J. Aquavella and B. Reeder 1989. Dose-response relationship for ethyl nitrosourea-induced sex-linked recessive lethals in germ cells of the female Drosophila melanogaster at relatively low doses. Mutation Res. 226: 81-85.
86. Valencia, R., J.M. Mason and S. Zimmering 1989. Chemical mutagenesis testing in Drosophila. VI. Interlaboratory comparison of mutagenicity tests after treatment of larvae. Environ. Molec. Mutag. 14: 238-244.
87. Zimmering, S., J.M. Mason and R. Valencia 1989. Chemical mutagenesis testing in Drosophila. VII. Results of 22 coded compounds tested in larval feeding experiments. Environ. Mutag. 14: 245-251.
88. Zimmering, S., C. Osgood and J.M. Mason 1990. Aneuploidy in Drosophila. I. Genetic test systems in the female Drosophila for the rapid detection of chemically induced chromosome gain and chromosome loss. Mutation Res. 234: 319-326.
89. Zimmering, S., O. Olvera, M.E. Hernandez, M.P. Cruces, C. Arceo and E. Pimental 1990. Evidence for a radioprotective effect of chlorophyllin in Drosophila. Mutation Res. 245: 47-49.
90. Sehgal, A., C. Osgood and S. Zimmering 1990. Aneuploidy in Drosophila. III: Aneuploidogens inhibit in vitro assembly of taxol-purified Drosophila microtubules. Environ. Molec. Mutag. 16: 217-224.
91. Rodriguez-Arnaiz, R., P. Ramos M., J. C. Gaytan O., D. L. Rodriguez Z. and S. Zimmering 1989. The herbicides Dalapon and Diuron tested for genotoxicity in Drosophila melanogaster. Rev. Int. Contam. Ambient 5: 59-64.
92. Osgood, C., S. Zimmering and J.M. Mason 1991. Aneuploidy in Drosophila, II. Further validation of the FIX and ZESTE genetic test systems employing female Drosophila melanogaster. Mutation Res. 259: 147-163.

93. Osgood, C., M. Bloomfield and S. Zimmering 1991. Aneuploidy in *Drosophila*, IV. Inhalation studies on the induction of aneuploidy by nitriles. *Mutation Res.* 259:165-176.
94. Pimentel, E., M.P. Cruces M and S. Zimmering 1991. Evaluation of the mutagenic potential of tepezcohuite in the *Drosophila* wing spot test. *Mutation Re.* 264:115-116.
95. Zimmering, S. 1992. Sex chromosome loss induced by X-rays in sperm of *Drosophila*. *Mutation Res.* 281:1-2.
96. Zimmering, S., O. Olvera, M.P. Cruces, E. Pimental, C. Arceo, M.E. de la Rosa and J. Guzman 1991. Irradiated cocoa tested in the wing spot assay in *Drosophila melanogaster*. *Mutation Res.* 281:169-170.
97. Mason, J.M., R. Valencia and S. Zimmering 1992. Chemical mutagenesis testing in *Drosophila*: VIII. Reexamiantion of equivocal results. *Environ. Molec. Mutag.* 19:227-234.
98. Rodriguez-Arnaiz, R., P.R. Morales and S. Zimmering, 1992. Evaluation in *Drosophila melanogaster* of the mutagenic potential of furfural in the mei-9^a test for chromosome loss in germ-line cells and the wing spot test for mutational activity in somatic cells. *Mutation Res.* 280:75-80.
99. Olvera, O., S. Zimmering, C. Arceo and M. Cruces, 1993. The protective effects of chlorophyllin in treatment with chromium (VI) oxide in somatic cells of *Drosophila*. *Mutation Res.* 301:201-204.
100. P. Foureman, J.M. Mason, R. Valencia, and S. Zimmering 1994. Chemical mutagenesis testing in *Drosophila*. IX. Results of 50 coded compounds tested for the National Toxicology Program. *Envir. and Molec. Mutagenesis* 23:51-63.
101. Olvera, O., S. Zimmering, C. Arceo, J. Guzman and M. de la Rosa 1994. Evidence for the protective effect of ascorbic acid (vitamin C) in treatment with gamma-rays and chromium (VI) oxide in somatic cells of *Drosophila*. *Mutagenesis Res.* 346:19-21.
102. Pimentel, E., S. Zimmering, M.E. de la Rosa, L. Travera, M.P.Cruces, 1996. Evidence for an effect of exposure to low levels of alpha particle irradiation in larval cells of *Drosophila* as measured in the wing-spot test. *Mutation Res.*, 354: 139-142.

103. Olvera, O., S. Zimmering, M.P. Cruces et. al., 1997. Antimutagenesis in somatic cells of *Drosophila* as monitored in the wing spot test. In *Food Factors for Cancer Prevention*. (H. Ohigashi et al, eds).
104. Zimmering, S., M. Cruces, E. Pimentel, C. Arceo, G. Carrasco and O. Olvera, 1997. On the recovery of single spots with the *flr* phenotype in the wing spot test in *Drosophila*. *Mutation Res.*, **379**: 77-82.
105. Pimentel, E., M. P. Cruces and S. Zimmering, 1999. On the persistence of the radioprotective effect of chlorophyllin (CHLN) in somatic cells of *Drosophila*. *Mutation Res.* **446**, 189-192.
106. Olvera, O., C. Arceo and S. Zimmering 2000. Chlorophyllin [CHLN] and the mutagenicity of monofunctional alkylating agents in *Drosophila*: The action of CHLN need not include an influence on metabolic activation. *Mutation Res.* **467**, 113-117.
107. Pimentel, E., M.P. Cruces and S. Zimmering, 2000. Evidence that chlorophyllin (CHLN) may behave as an inhibitor or a promoter of radiation-induced genetic damage in somatic cells of *Drosophila*. *Mutation Res.* **472**, 71-74.
108. M.P. Cruces, E. Pimentel and S. Zimmering, 2009. Evidence that low concentrations of chlorophyllin (SCC) increase genetic damage induced by gamma rays in somatic cells of *Drosophila*. *Mutat. Res.* **679**, 84-86.
109. E. Pimentel, M.P. Cruces and S. Zimmering, 2011. A study of the inhibition/promotion effects of sodium copper chlorophyllin in (SCC)-mediated mutagenesis in somatic cells of *Drosophila*. *Mutat. Res.* **722**, 52-55.
110. E. Pimentel, M.P. Cruces and S. Zimmering, 2013. A further study of the role of copper in regard to the Antimutagenic action of sodium copper chlorophyllin (SCC) in somatic cells of *Drosophila melanogaster*. *Biomark Insights*. 2013; **8**: 29–33.