

**MEIOTIC INTERSTRAND DNA DAMAGE ESCAPES PATERNAL REPAIR AND  
CAUSES CHROMOSOMAL ABERRATIONS IN THE ZYGOTE BY MATERNAL  
MISREPAIR**

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Table S1: Comparison of numbers and types of chromosomal structural aberrations in mouse first-cleavage (1-CI) zygotes after male exposure to 7.5 mg/kg MLP detected by PAINT/DAPI analysis.

Days p.t. <sup>a</sup>	1-CI zygotes	DAPI analysis				Cell eq <sup>b</sup>	PAINT analysis					
		Total	Dicentrics	Fragments	Other		Total	Dicentrics	Fragments	Translocations	Insertions	Other
Controls	282	0.014	0.003	0.010	0	166	0.018	0.006	0.012	0	0	0
3	139	0.245	0.086	0.094	0.065	82	0.219	0.073	0.024	0.098	0	0.024
7	230	0.430	0.117	0.230	0.083	135	0.488	0.081	0.163	0.207	0.022	0.015
23	293	1.689	0.464	0.843	0.382	170	1.929	0.388	0.482	0.929	0.071	0.059
37	216	0.093	0.028	0.046	0.019	127	0.064	0.024	0.024	0.016	0	0
49	167	0.012	0	0.006	0.006	93	0	0	0	0	0	0

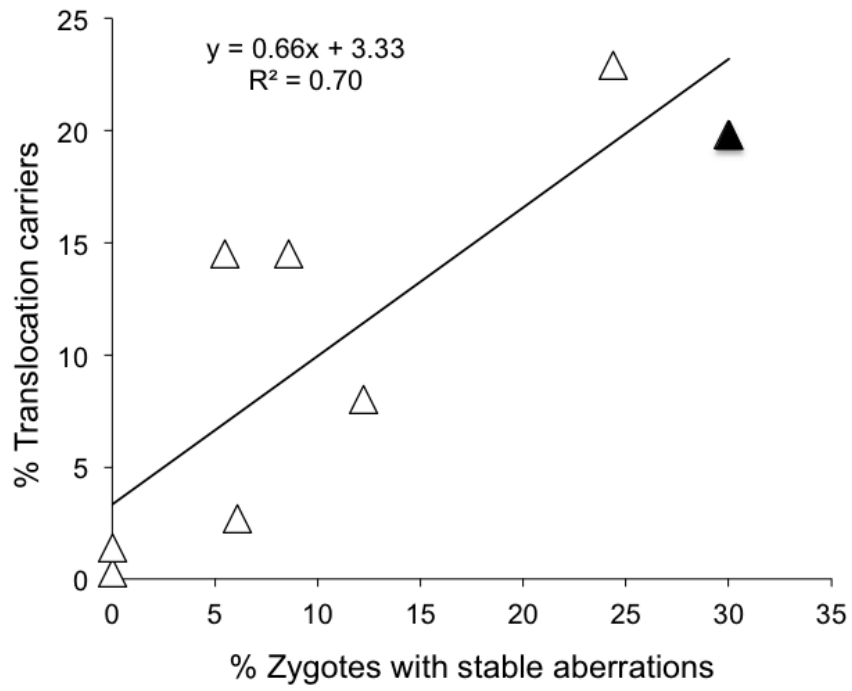
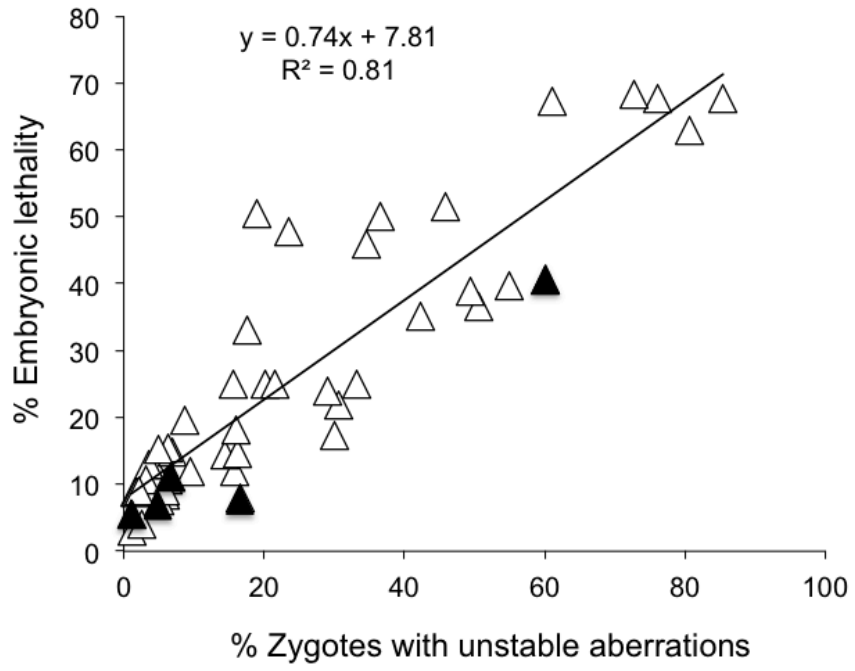
<sup>a</sup>Post treatment.

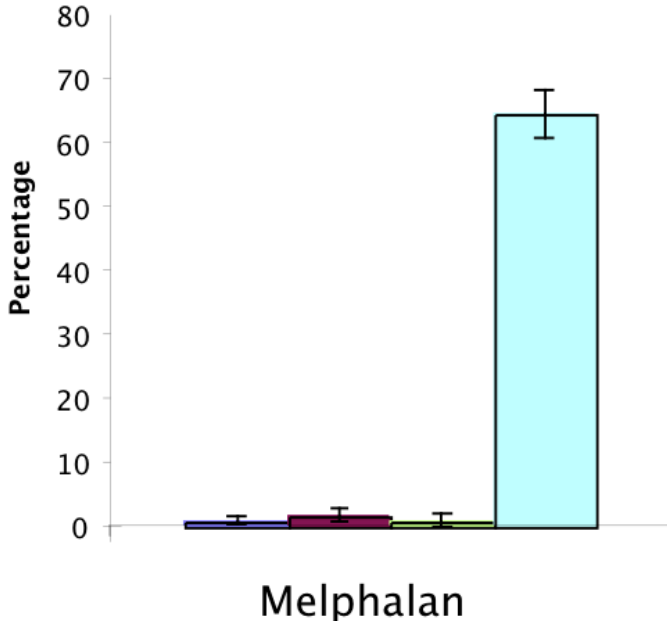
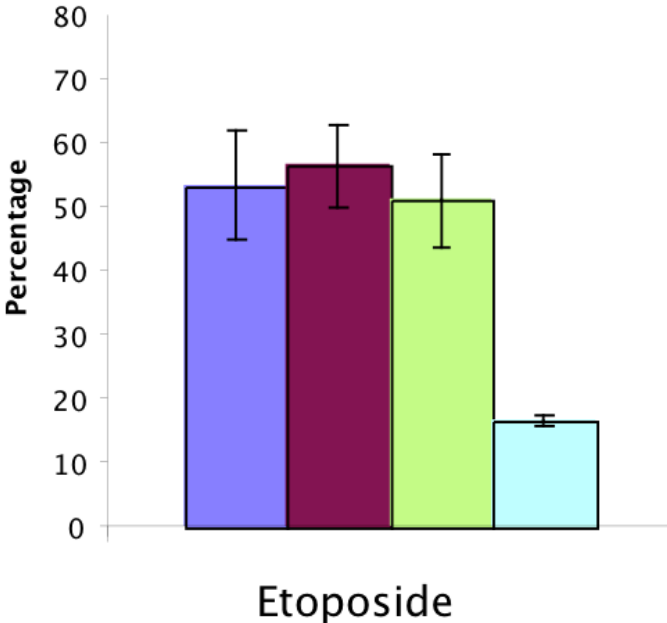
<sup>b</sup>Cell-equivalents.

**SUPPLEMENTARY FIGURE LEGENDS**

**Figure S1:** Linear regression analyses of the relationship between the frequencies of zygotes with chromosomal aberrations and reproductive outcomes. Data from the present work with MLP are indicated with black triangles; literature data after paternal exposure to 13 mutagens are indicated with white triangles. **(A)** Correlation between unstable aberrations in zygotes and embryonic lethality as measured in standard dominant lethal tests. **(B)** Correlation between reciprocal translocations in zygotes and translocation carriers after birth as measured in standard heritable translocation tests. [Adapted from Marchetti et al. 2007].

**Figure S2:** Comparison of the percentages of MI and MII spermatocyte metaphases with chromosomal aberrations, sperm with duplications and deletions by the CT8 assay and zygotes with chromosomal aberrations by PAINT/DAPI analysis after paternal exposure to etoposide (and mating 25 days after treatment) and melphalan (and mating 23 days after treatment). Bars represent the standard errors. Data for etoposide from Marchetti et al., 2001; 2006.





MI MII CT8 PAINT/DAPI