



Figure S1 Immunocytological analysis of spermatocyte chromosomes. A pair of images is shown for each genotype: the topmost shows staining for the SC axial element marker STAG3, and the lower image is a merge between STAG3 (in red) and γ H2AX (in green). The genotypes of each spermatocyte nucleus are abbreviated in the upper right of each panel pair, in which the gene symbol(s) listed indicates the gene(s) that is mutated in that sample. Each example is either a pachytene nucleus or the most advanced stage of spermatocyte occurring in the particular genotype.