

A Fanconi Anemia-like Phenotype Induced in *Xenopus laevis*

Stacie Stone¹, Tanja Reuter¹, Alex Sobeck¹, Ingrid Bijsmans¹, Yasmine Akkari³, Susan Olson³, Quinten Waisfisz⁴, Johan de Winter⁴, Hans Joenje⁴, Jan Christian², and Maureen Hoatlin¹

¹Molecular Medicine, ²Cell Biology, and ³Clinical Cytogenetics Laboratory Oregon Health and Science University, Portland, OR, 97239, and ⁴Department of Clinical Genetics and Human Genetics, Free University, Van der Boechorststraat 7, NL-1081BT Amsterdam.

‘Caretaker’ type gene diseases, such as Fanconi anemia (FA), provide an opportunity to understand fundamental mechanisms of host susceptibility to cancer. Unlike many caretaker gene diseases, where the defects have been associated with specific molecular processes, the underlying molecular defect in Fanconi anemia is unknown.

The *Xenopus laevis* model is a powerful tool for functional analysis of proteins, especially those involved in hematopoiesis and DNA metabolism. Until recently the *Xenopus* orthologs of FA genes were not available. We have cloned the *Xenopus* orthologs for FANCF and FANCC, and have identified partial sequences for FANCA and FANCE. In addition, BTB/POZ homologs and co-repressor partners related to the FANCC interactor FAZF, a sequence-specific transcriptional repressor, are also present in *Xenopus*.

As a first step in developing a *Xenopus* model for FA protein function we have examined the phenotypes of *Xenopus* embryos with dysregulated xFANCF. Following injection of *Xenopus* embryos with xFANCF antisense morpholinos (MAOs) we observed a phenotype including depressed mitotic index and spontaneous radial formation in metaphase spreads, while chromosomes from embryos injected with mismatch control MAOs were consistently normal.