

**Cell Stem Cell, Volume 2**

**Supplemental Data**

**Transparent Adult Zebrafish as a Tool**

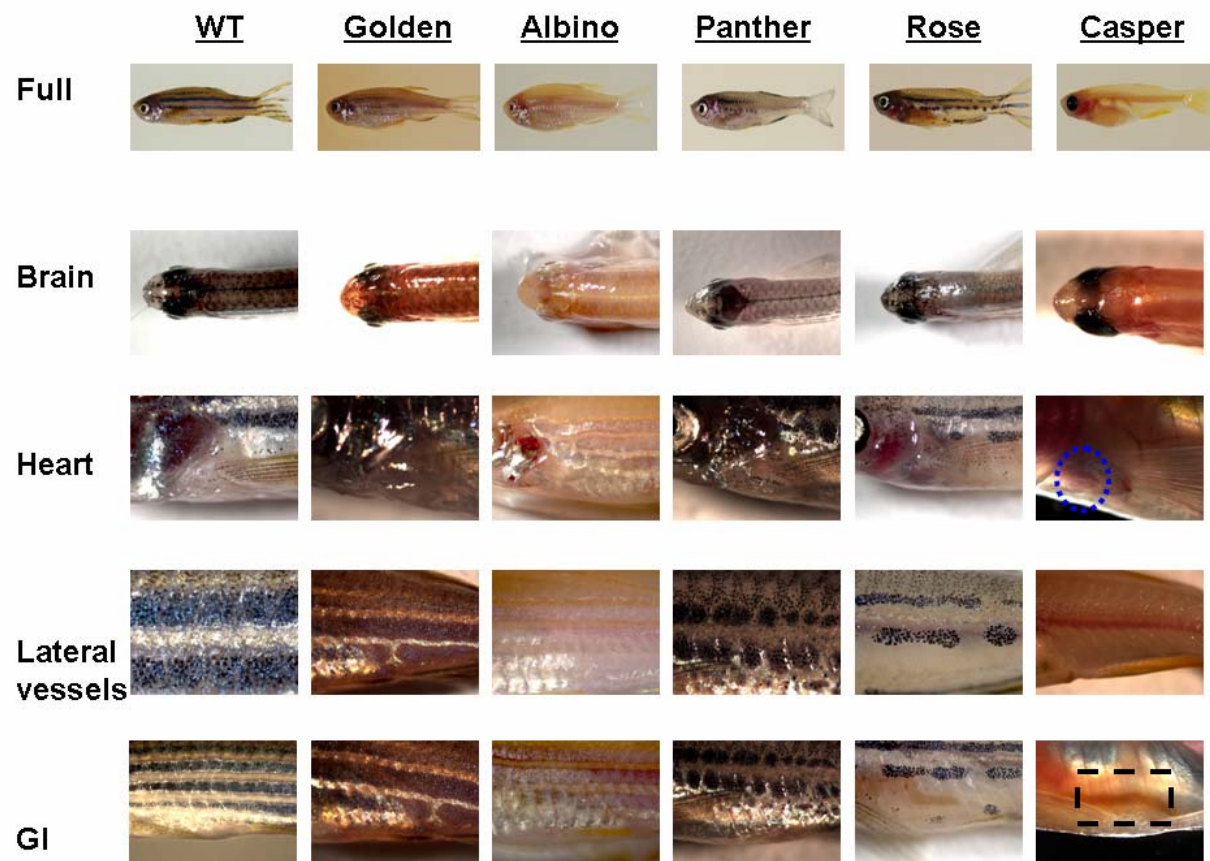
**for In Vivo Transplantation Analysis**

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### Figure S1

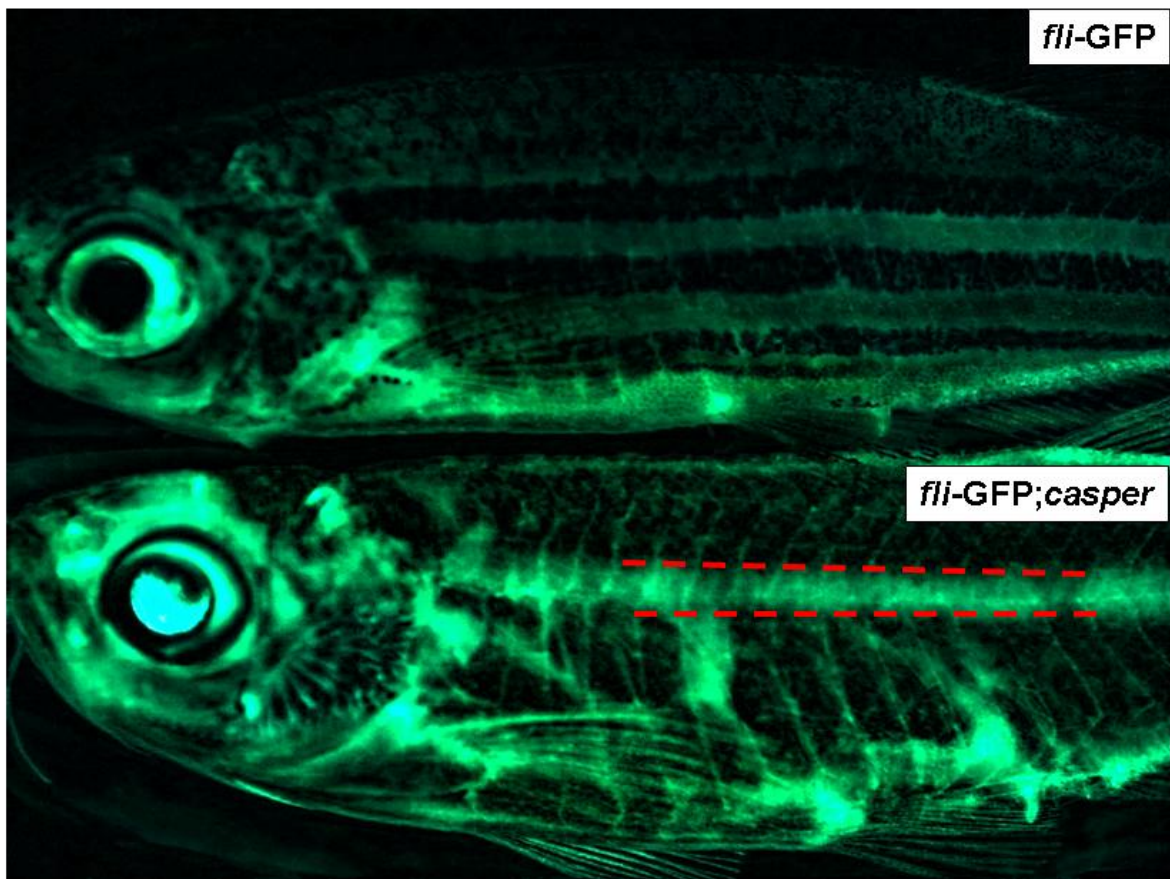
Examination of representative organs in wild-type, golden (SLC24A5 mutant), albino (gene unknown), panther (fms mutant), rose (EDNRB mutant) and casper (roy;nacre mutant).

Heart, brain, lateral vessels and intestinal tube can be visualized using standard stereomicroscopy only in the *casper* mutant. These organs are obscured in all other pigment mutants studied.



**Figure S2**

Crossing *casper* into the *fli*-GFP transgenic line yields an optically transparent animal in which macro and microvasculature is extensively labeled. Dotted lines indicate region of the aorta visible only in the *casper* line.



**Table S1**

Comparison of commonly used *in vivo* imaging technologies to the *casper* mutant zebrafish line.

	<b><u>Resolution</u></b>	<b><u>Sensitivity</u></b>	<b><u>Speed of image acquisition</u></b>	<b><u>Special requirements</u></b>	<b><u>References</u></b>
microCT	50 um-2mm	High	minutes	Specialized equipment, radiation, IV contrast	Paulus, et al, 2000 Pickhardt, et al 2005
MRI	25 um	Low	minutes-hours	Specialized equipment, IV contrast	Lee, et al, 2007
PET	1 mm	High	minutes	Specialized equipment, radiation, IV isotopes	Beckman, et al, 2007 Tai, et al, 2005
Bioluminescence	1 mm	High	minutes	IV substrate administration	Cao, et al, 2006 Dickson, et al, 2007
Fluorescence(stereo/confocal)	um-mm	High	Seconds-minutes	Confocal/dual photon for deep penetration	Sipkins, et al, 2005
Ultrasound	mm	High	minutes	Specialized equipment, technical expertise	Goessling, et al, 2007
<i>Casper</i> fish	5um	High	seconds	Double homozygous line needed; stereomicroscope and/or confocal microscope	

## Supplemental References

Dickson, P.V., Hamner, B., Ng, C.Y., Hall, M.M., Zhou, J., Hargrove, P.W., McCarville, M.B., and Davidoff, A.M. (2007). In vivo bioluminescence imaging for early detection and monitoring of disease progression in a murine model of neuroblastoma. *J. Pediatr. Surg.* *42*, 1172–1179.

Goessling, W., North, T.E., and Zon, L.I. (2007). Ultrasound biomicroscopy permits in vivo characterization of zebrafish liver tumors. *Nat. Methods* *4*, 551–553.