

| Article                               | Cancer type                                                   | Goals of the study                                                                    | Cell lines                                 | Patient xenografts    | Treatment correlation | Genetic correlation | Readouts                                                                                                                                                                                                                                        | Stage  | T (°C)           |
|---------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------------------------------|--------------------------------------------|-----------------------|-----------------------|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------------|
| <a href="#">Yan et al, 2019.</a>      | Rhabdomyosarcoma<br>Melanoma<br>Breast cancer<br>Glioblastoma | Zebrafish reared at 37 °C improve engraftment; drug response.                         | ERMS RD, ARMS Rh41<br>UACC62<br>MDA-MB-231 | 6 patients (cultured) | No                    | No                  | <ul style="list-style-type: none"> <li>• Live cell tracking;</li> <li>• Tumor growth (fluoresce. intensity);</li> <li>• H&amp;E;</li> <li>• Proliferation (Ki67);</li> <li>• Apoptosis (TUNEL).</li> </ul> Confocal microscopy                  | Adult  | 37               |
| <a href="#">Wang et al, 2019.</a>     | Pancreatic cancer                                             | Optimization of zPDX as a screening platform for clinical use.                        | -                                          | 1 patient (cultured)  | No                    | No                  | Fluorescence intensity (stereoscope)                                                                                                                                                                                                            | Larvae | 32               |
| <a href="#">Lin et al, 2019.</a>      | Hepatocellular carcinoma                                      | Tumor formation, proliferation, migration, angiogenesis                               | 293T/EDN1                                  | -                     | No                    | No                  | <ul style="list-style-type: none"> <li>• Tumor growth (fluoresce. intensity);</li> <li>• Angiogenesis;</li> <li>• Live imaging;</li> </ul> Fluorescent microscopy.                                                                              | Larvae | 28-37 (gradient) |
| <a href="#">Ji et al, 2018.</a>       | Acute myeloid leukemia                                        | Anti-tumor effects of the phytotoxin stemphol                                         | U-937                                      | 4 patients (cultured) | No                    | No                  | <ul style="list-style-type: none"> <li>• Tumor size (fluoresce. intensity).</li> </ul> Fluorescent microscopy.                                                                                                                                  | Larvae | 28.5             |
| <a href="#">Wu et al, 2017.</a>       | Gastric cancer                                                | Proliferation, angiogenic and metastatic activities, drug response                    | AGS, SGC-7901                              | 9 patients (cultured) | Yes (1 out of 1)      | No                  | <ul style="list-style-type: none"> <li>• Cell viability (CCK8 kit);</li> <li>• Nuclear stain (DRAQ5);</li> <li>• Angiogenesis;</li> <li>• H&amp;E;</li> <li>• Cell number (tumor dissociation).</li> </ul> Fluorescent and confocal microscopy. | Larvae | 32               |
| <a href="#">Leung et al, 2017.</a>    | NSCLC                                                         | Silencing of PAPSS1 sensitizes NSCLC cells to cisplatin treatment                     | A549                                       | -                     | No                    | No                  | <ul style="list-style-type: none"> <li>• Cell number (by tumor dissociation)</li> </ul> Fluorescent microscopy.                                                                                                                                 | Larvae | 35               |
| <a href="#">Canella et al, 2017.</a>  | Glioblastoma                                                  | Onalespib in combination with temozolomide as a therapeutic approach against gliomas. | U251HF                                     | -                     | No                    | No                  | <ul style="list-style-type: none"> <li>• Live imaging;</li> <li>• % xenografts survival;</li> <li>• Tumor growth (automatic quantification).</li> </ul> Confocal microscopy                                                                     | Larvae | 32               |
| <a href="#">Gaudenzi et al, 2017.</a> | Neuroendocrine tumors                                         | Tumor-induced angiogenesis and cell invasiveness                                      | --                                         | 8 patients (cultured) | No                    | No                  | <ul style="list-style-type: none"> <li>• Angiogenesis;</li> <li>• H&amp;E;</li> <li>• Migration.</li> </ul> Fluorescent and confocal microscopy.                                                                                                | Larvae | 32               |

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| <a href="#">Fior et al, 2017.</a>      | Colorectal cancer | Tumor proliferation, metastatic and angiogenic potentials; drug response. | SW480, SW620, HCT116, HT29, Hke3                                                        | 10 patients (direct)                                     | Yes (4 out of 5)      | Yes (3 out of 3)    | <ul style="list-style-type: none"> <li>• Tumor size (number of cells);</li> <li>• % apoptosis;</li> <li>• Angiogenesis;</li> <li>• % mitosis;</li> <li>• % metastasis;</li> <li>• H&amp;E;</li> <li>• Live imaging;</li> </ul> <b>Confocal microscopy.</b>               | Larvae | 34     |
| <a href="#">Roh-Johnson, 2017.</a>     | Melanoma          | Role of immune cells in tumor cell motility in vivo.                      | A375P A375M1, WM266-4, B16F10, 1205Lu, WM793, Mel-624; Zmel (zebrafish melanoma cells). | -                                                        | No                    | No                  | <ul style="list-style-type: none"> <li>• Live imaging;</li> <li>• Tumor cell dissemination;</li> <li>• % macrophages;</li> <li>• Time quantification of macrophage/tumor cell contact;</li> <li>• Whole-mount IF.</li> </ul> <b>Fluorescent and confocal microscopy.</b> | Larvae | 31     |
| <a href="#">Hung et al, 2016.</a>      | Breast cancer     | Effect of visfatin on migration and invasion.                             | MDA-MB-231                                                                              | -                                                        | No                    | No                  | <ul style="list-style-type: none"> <li>• Cell invasion (dissemination of labeled cells).</li> </ul> <b>Fluorescent microscopy.</b>                                                                                                                                       | Larvae | 32.5   |
| <a href="#">Mercatali et al, 2016.</a> | Breast cancer     | Tumor behavior.                                                           | MDA-MB-231 MCF-7                                                                        | Primary cells from bone metastasis, cultured (1 patient) | No                    | No                  | <ul style="list-style-type: none"> <li>• Metastasis.</li> </ul> <b>Fluorescent microscopy.</b>                                                                                                                                                                           | Larvae | 34     |
| <a href="#">Ghotra et al, 2015.</a>    | Prostate cancer   | Role of SYK (spleen kinase) as a potential new drug target.               | PC3, DU145, LNCaP, C4-2B                                                                | -                                                        | No                    | No                  | <ul style="list-style-type: none"> <li>• Tumor cell spreading;</li> <li>• Cumulative distance of cells per embryo;</li> <li>• Mean cumulative distance (automatic quantification).</li> </ul> <b>Confocal microscopy.</b>                                                | Larvae | 34     |
| <a href="#">Chen et al, 2015.</a>      | Retinoblastoma    | Tumor invasion and metastasis.                                            | SJmRBL-8 (mouse) RB355, WERI-Rb1                                                        | -                                                        | No                    | No                  | <ul style="list-style-type: none"> <li>• Tumor areas and disseminated tumor cell (automatic quantification);</li> <li>• % zebrafish with metastasis;</li> <li>• Averages of maximal distance of metastatic foci.</li> </ul> <b>Fluorescent and confocal microscopy.</b>  | Larvae | 28.5   |

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| <a href="#">Bentley et al, 2015.</a>     | T-cell acute lymphoblastic leukemia                | Drug response.                                                                | Jurkat, Karpas45, TALL1                                          | 2 patients (cultured 12h) (biopsy bone marrow) | No                    | Yes (2 out of 2)    | <ul style="list-style-type: none"> <li>Number tumor cells (dissociation PML + cells)</li> </ul> Fluorescent and confocal microscopy.                                                                                                                                                               | Larvae                      | 35     |
| <a href="#">Chapman et al, 2014.</a>     | Melanoma                                           | Invasion properties and cooperation of tumor cells in a heterogeneous setting | UACC62, WM266-4                                                  | -                                              | No                    | No                  | <ul style="list-style-type: none"> <li>Quantification of invasion;</li> <li>Whole-mount IF.</li> </ul> Confocal microscopy.                                                                                                                                                                        | Larvae                      | 34     |
| <a href="#">Ban et al, 2014.</a>         | Ewing sarcoma                                      | Inhibition of SIRT1 interferes with tumor growth and migration in vivo.       | TC252, A673                                                      | -                                              | No                    | No                  | <ul style="list-style-type: none"> <li>Proliferation (tumor growth) and distance of migration based on mCherry labeled foci.</li> </ul> Confocal microscopy.                                                                                                                                       | Larvae                      | 34     |
| <a href="#">Van der Ent et al, 2014.</a> | Ewing sarcoma                                      | Proliferation, migration, and angiogenesis.                                   | CADO-ES, EW3, EW7, L1062, TC32, TC71, SK-N-MC                    | -                                              | No                    | No                  | <ul style="list-style-type: none"> <li>Whole-mount IHC;</li> <li>H&amp;E;</li> <li>Angiogenesis;</li> <li>Migration;</li> <li>Interaction with immune system;</li> <li>Tumor burden (mCherry area).</li> </ul> Confocal microscopy.                                                                | Larvae and juvenile (35dpf) | 34     |
| <a href="#">He et al, 2012.</a>          | Prostate cancer<br>Breast cancer                   | Tumor cell invasion, tumor vascularization and micrometastasis formation.     | MAE, FGF-T-MAE, 4T1 (mouse) ZF4/PAC2 (zebrafish) PC3, MDA-MB-231 | -                                              | No                    | No                  | <ul style="list-style-type: none"> <li>Live imaging;</li> <li>Whole-mount IHC;</li> <li>Angiogenesis;</li> <li>% metastasis;</li> <li>Microangiography;</li> <li>Proliferation (pH3);</li> <li>Immune system interaction;</li> <li>Neutrophils migration.</li> </ul> Confocal /2-Photon microscopy | Larvae                      | 34     |
| <a href="#">Stoletov et al, 2010.</a>    | Fibrosarcoma<br>Breast cancer<br>Colorectal cancer | Behaviour of metastatic human cancer cells undergoing extravasation.          | HT1080, SW620, SW480, MDA-MB-435, MDA-MB-231,                    | -                                              | No                    | No                  | <ul style="list-style-type: none"> <li>Cell extravasation;</li> <li>Intravascular migration (live imag.);</li> <li>Whole-mount IF;</li> <li>Blood vessel wall integrity-dextran.</li> </ul> Confocal microscopy.                                                                                   | Larvae                      | 35.5   |

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| <a href="#">Marques et al, 2009.</a> | Pancreatic cancer<br>Colon cancer<br>Stomach cancer | Analysis of metastatic behaviour of human tumor cells.                                             | EpRas (mouse)<br>PaTu8988-S,<br>PaTu8988-T                       | 7 patients (direct)   | No                    | No                  | <ul style="list-style-type: none"> <li>• Whole-mount IF;</li> <li>• H&amp;E;</li> <li>• Cell invasion and metastasis.</li> </ul> Confocal microscopy.                                                                      | Larvae | 35     |
| <a href="#">Weiss et al, 2009.</a>   | Pancreatic cancer                                   | MicroRNA-10a—required and sufficient for tissue invasion and metastasis of pancreatic tumor cells. | PaTu8988T/S,<br>AsPC1, Capan1/2,<br>MiaPaCa2, PANC1,<br>PaTu8902 | 3 patients (cultured) | No                    | No                  | <ul style="list-style-type: none"> <li>• Metastasis;</li> <li>• H&amp;E.</li> </ul> Fluorescent microscopy.                                                                                                                | Larvae | 35     |
| <a href="#">Lee et al, 2009.</a>     | Ovarian cancer<br>Breast cancer                     | Tumor-induced angiogenesis, invasion and metastasis.                                               | T241 and LLC (mouse) OVCAR 8<br>MDA-MB-231                       | -                     | No                    | No                  | <ul style="list-style-type: none"> <li>• Angiogenesis (vessel density);</li> <li>• Tumor volume;</li> <li>• N° of disseminated cells;</li> <li>• Metastasis maximal distance.</li> </ul> Confocal microscopy.              | Larvae | 28     |
| <a href="#">Nicoli et al, 2007.</a>  | Ovarian<br>Breast                                   | Tumor-induced angiogenesis.                                                                        | MAE, FGF2-T-MAE and B16-BL16 (mouse) Tet-FGF2; A2780, MDA-MB-435 | -                     | No                    | No                  | <ul style="list-style-type: none"> <li>• Whole-mount in situ hybridization;</li> <li>• Angiogenesis;</li> <li>• DAPI-stained transverse sections;</li> <li>• Neo-vessel quantification.</li> </ul> Fluorescent microscopy. | Larvae | 28     |
| <a href="#">Haldi et al, 2006.</a>   | Melanoma<br>Colorectal<br>Pancreatic                | Optimization of xenotransplantation; proliferation, migration and mass formation.                  | WM-266-4<br>SW620<br>FG CAS/Crk<br>CCD-1092Sk                    | -                     | No                    | No                  | <ul style="list-style-type: none"> <li>• Single cell dissociation (Dil);</li> <li>• Angiogenesis;</li> <li>• Whole-mount IHC;</li> <li>• Whole-mount IC;</li> <li>• Fluorescent/2-photon microscopy.</li> </ul>            | Larvae | 35     |

In Blue – patient-derived cells were used.