

**Name of Journal:** *World Journal of Gastroenterology*

**Manuscript NO:** 53534

**Manuscript Type:** ORIGINAL ARTICLE

### *Basic Study*

**THE use of zebrafish embryos as avatar of patients with pancreatic cancer: A new xenotransplantation model towards personalized medicine**

Di Franco G *et al.* Zebrafish as avatar of PDAC patients

**Gregorio Di Franco\***, **Alice Usai\***, **Niccola Funel**, **Matteo Palmeri**, **Ida Elena Rosamaria Montesanti**, **Matteo Bianchini**, **Desirée Gianardi**, **Niccolò Furbetta**, **Simone Guadagni**, **Enrico Vasile**, **Alfredo Falcone**, **Luca Emanuele Pollina**, **Vittoria Raffa†**, **Luca Morelli†**

\* Equally contributing

† Equally contributing

### **Abstract**

#### BACKGROUND

The response to chemotherapy treatment of patients with pancreatic ductal adenocarcinoma (PDAC) is difficult to predict and the identification of patients who most likely will benefit from aggressive chemotherapy approaches is crucial. The concept of personalized medicine has emerged in the last years with the objective to tailor the medical treatment to the individual characteristics of each patient, and particularly to the tumor biology of each

## Match Overview

Match Number	Source	Words	Percentage
1	Internet crawled on 12-Dec-2017 <a href="http://www.nature.com">www.nature.com</a>	329 words	4%
2	Internet crawled on 19-Dec-2019 <a href="http://link.springer.com">link.springer.com</a>	296 words	4%
3	Crossref Bruna Costa, Marta F. Estrada, Raquel V. Mendes, Rita Fi or. "Zebrafish Avatars towards Personalized Medicine—...	116 words	1%
4	Internet crawled on 08-Apr-2020 <a href="http://bmccancer.biomedcentral.com">bmccancer.biomedcentral.com</a>	111 words	1%
5	Internet crawled on 13-Mar-2020 <a href="http://www.tandfonline.com">www.tandfonline.com</a>	71 words	1%
6	Crossref Chuan Yan, Dalton C. Brunson, Qin Tang, Daniel Do et al... "Visualizing Engrafted Human Cancer and Therapy Resp	62 words	1%
7	Internet crawled on 15-Jun-2016 <a href="http://championsoncology.com">championsoncology.com</a>	35 words	<1%
8	Crossref Konstantin Schlick, Teresa Magnes, Lukas Ratzinger, Ber nhard Jaud, Lukas Weiss, Thomas Melchardt, Richard Gr	32 words	<1%



ALL

IMAGES

VIDEOS

7,060 Results

Any time ▾

## [Zebrafish Models of Cancer—New Insights on Modeling Human ...](#)

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6896156>

This fact is a powerful reason for the utilization of **zebrafish** as a pre-clinical screening **model** which could lead to **patient**-derived **cancer** cell **xenotransplantation** and to **new** options for **personalized medicine**. Most of the recent transplantation studies in **zebrafish use** embryonal stages of 48 hours post fertilization (hpf) as the stage for ...

**Cited by:** 1

**Author:** Martina Hason, Petr Bartůněk

**Publish Year:** 2019

## [Zebrafish Avatars towards Personalized Medicine—A ...](#)

<https://www.mdpi.com/2073-4409/9/2/293/htm> ▾

The arrival of precision **medicine** and immunotherapy are giving hope to finally manage **cancer** treatment. Many advances were made possible due to the discovery of molecular pathways in tumor cells and on their interaction with the surrounding tumor microenvironment (TME) [], leading to the development of many **new** therapies. The latest successes in HER2-targeted therapy and the ...

**Author:** Bruna Costa, Marta F. Estrada, Raq...

**Publish Year:** 2020

## [Zebrafish patient avatars in cancer biology and precision ...](#)

<https://www.nature.com/articles/s41568-020-0252-3>

This Review outlines the recent advances in the creation of both combinatorial transgenic **cancer** models in **zebrafish** and **zebrafish patient**-derived xenograft models, and ...

**Author:** Maurizio Fazio

## [Cancers | Free Full-Text | A Model of a Zebrafish Avatar ...](#)

<https://www.mdpi.com/2072-6694/12/3/677/htm> ▾

Animal "**avatars**" and co-clinical trials are being developed for possible **use** in **personalized medicine** in oncology. In a co-clinical trial, the **cancer** cells of the **patient's** tumor are xenotransplanted into the animal **avatar** for drug efficacy studies, and the data collected in the animal trial are used to plan the best drug treatment in the **patient** trial.



7,130 Results Any time ▾

### [Zebrafish Models of Cancer—New Insights on Modeling Human ...](#)

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6896156>

This fact is a powerful reason for the utilization of **zebrafish** as a pre-clinical screening **model** which could lead to **patient-derived cancer** cell **xenotransplantation** and to **new** options for **personalized medicine**. Most of the recent transplantation studies in **zebrafish use** embryonal stages of 48 hours post fertilization (hpf) as the stage for ...

**Cited by:** 1 **Author:** Martina Hason, Petr Bartůněk

**Publish Year:** 2019

### [Zebrafish patient avatars in cancer biology and precision ...](#)

<https://www.nature.com/articles/s41568-020-0252-3>

This Review outlines the recent advances in the creation of both combinatorial transgenic **cancer** models in **zebrafish** and **zebrafish patient-derived** xenograft models, and argues that these models ...

**Author:** Maurizio Fazio

### [Cancers | Free Full-Text | A Model of a Zebrafish Avatar ...](#)

<https://www.mdpi.com/2072-6694/12/3/677/htm>

Animal "**avatars**" and co-clinical trials are being developed for possible **use** in **personalized medicine** in oncology. In a co-clinical trial, the **cancer** cells of the **patient's** tumor are xenotransplanted into the animal **avatar** for drug efficacy studies, and the data collected in the animal trial are used to plan the best drug treatment in the **patient** trial.

**Author:** Alice Usai, Gregorio Di Franco, Patrizi... **Publish Year:** 2020

### [Zebrafish Xenografts for Drug Discovery and Personalized ...](#)

<https://www.sciencedirect.com/science/article/pii/S2405803320301217>

An exciting **new use of zebrafish** xenograft models is for **personalized medicine**. The promising vision is that a tumor biopsy could be transplanted into hundreds of **zebrafish embryos** to identify a **patient-specific** chemosensitivity profile [ 12 ].

### [A Preclinical Embryonic Zebrafish Xenograft Model to ...](#)

<https://www.mdpi.com/2072-6694/12/3/567/htm>