

# Online Research @ Cardiff

This is an Open Access document downloaded from ORCA, Cardiff University's institutional repository: <http://orca.cf.ac.uk/109705/>

This is the author's version of a work that was submitted to / accepted for publication.

Citation for final published version:

Vincan, Elizabeth, Schwab, Renate H.M., Flanagan, Dustin J., Moselen, Jean M., Tran, Bang M., Barker, Nick and Phesse, Toby 2018. The central role of Wnt signaling and organoid technology in personalizing anticancer therapy. *Progress in Molecular Biology and Translational Science* 153 , pp. 299-319. 10.1016/bs.pmbts.2017.11.009 filefilefilefilefilefile

Publishers page: <http://dx.doi.org/10.1016/bs.pmbts.2017.11.009>  
<<http://dx.doi.org/10.1016/bs.pmbts.2017.11.009>>

Please note:

Changes made as a result of publishing processes such as copy-editing, formatting and page numbers may not be reflected in this version. For the definitive version of this publication, please refer to the published source. You are advised to consult the publisher's version if you wish to cite this paper.

This version is being made available in accordance with publisher policies. See <http://orca.cf.ac.uk/policies.html> for usage policies. Copyright and moral rights for publications made available in ORCA are retained by the copyright holders.



**Table 1. Two ways of generating adult tissue organoids**

	<b>Pluripotent Stem Cell (iPS)</b>	<b>Organ restricted stem cell</b>
	One stem cell can generate cell types with characteristics of divers tissues	Tissue stem cell “remembers” tissue of origin
Step 1	Isolate adult mature cell	Isolate* adult stem cell
Step 2	Reprogram it to be a pluripotent stem (PS) cell (i.e. <i>induced PS</i> )	Self-organize in culture to form “mini-tissues”
Step 3	Differentiate to different tissue cell types (embryonic cues)	Generate the tissue-specific cell types and architecture (adult cues)
	Model normal and disease tissue	Model normal and disease tissue
	Regenerative medicine/transplantation	Regenerative medicine/transplantation
		Applicable to diseased tissues e.g. solid tumors; personalized anti-cancer treatment
	Autologous diverse tissue cell types	

\*It is not necessary to isolate the adult stem cells; tissue pieces also yield organoids