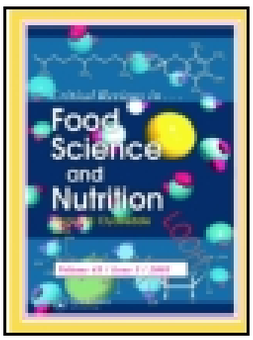

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Correction

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Correction

Article title: "Intestinal in vitro cell culture models and their potential to study the effect of food components on intestinal inflammation"

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When the above article was originally published online, table 2 had been formatted incorrectly. The corrected table 2 can be found in the original article and below.

Table 2. Gut 3D culture models.

	Model	Cell type(s) & source	Objective(s)	Particular features	Reference
HEALTHY GUT	D human small intestinal villous	Caco-2 (human colon adenocarcinoma)	Development of a 3D hydrogel scaffold model to accurately replicate the shape and size of human small intestinal villi to test drug permeability	Cells cultured on a soft-hydrogel structure.	(Yu et al. 2012)
	Multicellular organotypic model of human intestinal mucosa	HCT-8 (human ilieocecal adenocarcinoma), CCD-18Co (human colon fibroblast), HUVEC (human umbilical vein endothelial cells)	Development of an organotypic model with close structural and functional resemblance to the human intestinal mucosa	Model includes fibroblasts, lymphocytes, epithelial and endothelial cells embedded in a protein enriched collagen I matrix. Cells can differentiate into several lineages (goblet cells, M cells and differentiated enterocytes).	(Salerno-Goncalves, Fasano, and Sztein 2011)
	3D setup of intestinal mucosa	Caco-2 (human colon adenocarcinoma), THP-1 (human macrophages), MUTZ-3 (human dendritic cells)	Development of a 3D intestinal model for drug delivery studies and to assess nanomaterial toxicity in healthy or disease conditions	Immune cells were embedded in a collagen scaffold, seeded on the apical side of inserts and Caco-2 cells, on top of this layer.	(Collnot, Susewind, and Lehr 2013; Susewind et al. 2015)
	3D co-culture (intestinal epithelial cells-fibroblast model)	Caco-2 (human colon adenocarcinoma) / NHDF (normal human dermal fibroblasts)	To study TJ expression and cell differentiation in a 3D model	Co-cultures of intestinal and endothelial cells; 1L-Caco-2/1L-NHDF and 1L-Caco-2/8L-NHDF were constructed using a cell-coat (nano-ECM of fibronectin and gelatin) technology.	(Matsusaki et al. 2015)
	3D intestinal culture	T84 (human colon carcinoma, lung metastasis), Caco-2 (human colon adenocarcinoma)	Effect of TNFα and IFNγ on paracellular permeability and morphogenesis in 3D T84 and Caco-2 luminal spheres	Cells were seeded in Matrigel^{TM} in order to form spheres.	(Juuti-Uusitalo et al. 2011)
		Caco-2 (human colon adenocarcinoma)	Development of microporous, polymeric membranes that are either flat or contain controllable 3-dimensional shapes that can be integrated in microfluidic, multi-organ cell culture systems	Membranes can be integrated with microfluidic, multi-organ cell culture systems, providing access to both apical and basolateral sides.	(Esch et al. 2012)
		Caco-2 (human colon adenocarcinoma)	Study of epithelial morphogenesis	To produce cysts, Caco-2 cells were plated either on top of the ECM (Matrigel^{TM}), for time lapse or embedded in the ECM (collagen I and Matrigel^{TM}), for immunofluorescence.	(Jaffe et al. 2008)
		Caco-2 (human colon adenocarcinoma)	Toxicity and inflammatory effects of different-sized ZnO nanoparticles (NPs) at various concentrations seeded in 3D cultures	The cells were seeded and immobilized in agarose gel.	(Wu et al. 2017)
	Human gut-on-a-chip	Caco-2 (human colon adenocarcinoma)	Development of a biomimetic 'human gut-on-a-chip'	Micro-device composed of two microfluidic channels separated by a porous flexible membrane coated with ECM (collagen and Matrigel^{TM}) and lined with human intestinal epithelial (Caco-2) cells.	(Kim et al. 2012; Kim and Ingber 2013)
	Intestinal microfluidic system	Caco-2 (human colon adenocarcinoma)	Development of a microchip-based system to mimic the intestine	Microchip composed of a glass slide, a permeable membrane, and polydimethylsiloxane sheets, containing microchannels and Caco-2 cells seeded on the membrane.	(Imura et al. 2009)
	Intestinal microscale cell culture analog (μCCA)	Caco-2 and HT29-MTX (human adenocarcinoma), HepG2/C3A (human hepatocellular carcinoma)	Development of an *in vitro* microscale cell culture analog (μCCA) to the gastrointestinal tract	Intestinal cells seeded on polycarbonate (0.4 μm) membranes, μCCA coated with poly-D-lysine and plasma fibronectin and HepG2/C3A cells seeded into the liver chamber. A peristaltic pump was used to simulate medium re-circulation.	(Mahler, Shuler, and Glahn 2009)

	Intestinal microfluidic device	Caco-2 (human colon adenocarcinoma)	Development of an integrated microfluidic system for long-term perfusion culture and on-line monitoring of intestinal tissue models	The microfluidic structure is divided into two independent channels separated by a semipermeable membrane enabling the detection of polarized Caco-2 transport activity.	(Kimura et al. 2008)
	Microfluidic gut-on-a-chip	Caco-2 (human colon adenocarcinoma)	Reproduce the 3D villi structure and the fluidic shear in a microfluidic chip	Cells were seeded on a collagen scaffold (villi) incorporated into a microfluidic device consisting of three layers of polydimethyl-siloxane (PDMS), a slide glass and a polyester (PET) membrane	(Shim et al. 2017)
	Intestinal microfluidic chip	Caco-2 (human colon adenocarcinoma)	Evaluation of Ca^{2+} transport	The chip was made of two PDMS layers, two polymethylmethacrylate (PMMA) layers, a PET membrane (0.4μm) and a glass slide. Ag/AgCl electrodes were included in the device.	(Huang et al. 2014)
	Intestinal microfluidic device	Caco-2 (human colon adenocarcinoma	Development of a microfluidic device that mimics human intestinal properties	Caco-2 cells were seeded on a porous membrane coated with fibronectin between two layers of polydimethylsiloxane (PDMS).	(Chi et al. 2015)
INFLAMED GUT	3D *in vitro* intestinal mucosa model	Caco-2 and HT29-MTX (human adenocarcinoma), THP-1 (human peripheral blood -acute monocytic leukemia), MEFs, P0 (primary mouse embryonic fibroblast)	Development of an improved 3D *in vitro* intestinal mucosa model to evaluate drug absorption.	MEFs were dispersed in a type rat tail collagen solution. Intestinal cells were seeded on the top of the formed collagen gel. The co-culture was then transferred to a receiver plate pre-seeded with THP-1 derived macrophages.	(Li et al. 2013)
	Intestinal inflamed 3D cell-culture model	Caco-2, HT29, T84 (human colon adenocarcinoma) / PBMC (human peripheral blood mononuclear cells)	Development of a 3D co-culture of human intestinal and immune cells stimulated model for anti-inflammatory drug screening and their formulations	Macrophages and dendritic cells derived from PBMC were embedded in a collagen layer on a Transwell insert and Caco-2 cells were seeded on top.	(Leonard et al. 2012; Leonard, Collnot, and Lehr 2010)
		Caco-2 (human adenocarcinoma), THP-1 (human peripheral blood -acute monocytic leukemia)	Evaluation of the delivery efficacy of nanoparticles	THP-1 and Caco-2 cells were embedded in a Matrigel ™ solution.	(Huang et al. 2014)
	3D co-culture (intestinal epithelial cell-macrophage) model	HT29 (human colon adenocarcinoma), U937 (human monocyte-histiocytic lymphoma)	Study of *Salmonella enterica* colonization patterns	U937 cells were activated upon collagen-coated scaffolds. HT-29 epithelial cells were then added and the 3D model was cultured in the NASA Rotating Wall Vessel bioreactor until optimal differentiation was reached.	(Barrila et al. 2017)
	NutriChip	Caco-2 (human colon adenocarcinoma), U937 (human monocyte-histiocytic lymphoma)	Development of an integrated microfluidic platform to investigate the potential immuno-modulatory function of dairy food	The core component of the NutriChip is a miniaturized artificial human gastrointestinal tract (GIT), which consists of a confluent layer of epithelial cells separated from a co-culture of immune cells by a permeable membrane.	(Ramadan et al. 2013; Vergères et al. 2012)
	Microfluidic chip	Caco-2 (human adenocarcinoma), U937 (human monocyte- histiocytic lymphoma)	Development of a microfluidic-based dynamic *in vitro* model of human intestinal barrier	Continuous perfusion of culture media from the apical and basolateral side of the porous membrane mimics physiological flow.	(Ramadan and Jing 2016)