

Iron in Health and Disease

Group Leader: [Dr Chris Tselepis \(/staff/profiles/cancer/tselepis-chris.aspx\)](/staff/profiles/cancer/tselepis-chris.aspx)

Our Research Group

Our research group is interested in understanding how iron is regulated in the human body and how these processes are abrogated in disease, most notably cancer. By using both in-vitro and in-vivo models we have begun to dissect the importance of both systemic and luminal iron levels in gastrointestinal carcinogenesis.

The knowledge gained to date has led to several pending patents focused on the use of iron chelators as chemopreventive agents in high risk individuals. In close collaboration with both academic and industrial partners we are also assessing how iron chelators can be manipulated to provide safety, tolerability and effective delivery.

We are also now beginning to study iron metabolism in other non-gastrointestinal cancers settings most pertinently endocrine cancers, in addition to assessing the effects of iron both at the proteomic and metabolomic level.

In addition obesity is a risk factor for the development of several epithelial cancers and that iron metabolism is also deregulated in obesity. Thus we are dissecting out at the molecular and cellular level how iron deregulation can both contribute to a systemic anaemia whilst at the same time predispose to cancer. This work has further branched out to developing methodologies to identify other novel adipocyte secreted factors and how these impact on carcinogenesis.

Recent Publications

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- Ward DG, Roberts K, Stonelake P, Goon P, Zampronio CG, Martin A, Johnson PJ, Iqbal T, Tselepis C. SELDI-TOF-MS determination of hepcidin in clinical samples using stable isotope labelled hepcidin as an internal standard. *Proteome Sci.* 2008 Oct 14;6:28.
- Boult JK, Tanière P, Hallissey MT, Campbell MJ, Tselepis C. Oesophageal adenocarcinoma is associated with a deregulation in the MYC/MAX/MAD network. *Br J Cancer.* 2008 Jun 17;98(12):1985-92.
- Ward DG, Roberts K, Brookes MJ, Joy H, Martin A, Ismail T, Spychal R, Iqbal T, Tselepis C. Increased hepcidin expression in colorectal carcinogenesis. *World J Gastroenterol.* 2008 Mar 7;14(9):1339-45.
- Boult J, Roberts K, Brookes MJ, Hughes S, Bury JP, Cross SS, Anderson GJ, Spychal R, Iqbal T, Tselepis C. Overexpression of cellular iron import proteins is associated with malignant progression of esophageal adenocarcinoma. *Clin Cancer Res.* 2008 Jan 15;14(2):379-87.

Staff

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Prof Derek Alderson

Ms Olga Tucker

[Prof Ulrich Gunther \(/staff/profiles/cancer/gunther-ulrich.aspx\)](/staff/profiles/cancer/gunther-ulrich.aspx)

[Dr Douglas Ward \(/staff/profiles/cancer/ward-douglas.aspx\)](/staff/profiles/cancer/ward-douglas.aspx)

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[Prof Ian Norton \(/staff/profiles/chemical-engineering/norton-ian.aspx\)](/staff/profiles/chemical-engineering/norton-ian.aspx) (Chem Eng), Professor of Chemical Engineering

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