Electronic Supplementary Information

Nanoscale structure detection and monitoring of tumour growth with optical coherence tomography

Nandan Das*[ad], Alexandrov Sergey[a], Yi Zhou[a], Katie E. Gilligan[b], Róisín M Dwyer[b], Martin Leahy[ac]

[a]*Tissue Optics and Microcirculation Imaging (TOMI), National University of Ireland, Galway, Ireland*
[b]*Discipline of Surgery, Lambe Institute for Translational Research, National University of Ireland Galway, Ireland*
[c]*Institute of Photonic Sciences (ICFO), Barcelona, Spain*
[c]*Department of Biomedical Engineering (IMT), Linköping University, Sweden*
*email: nandankds@gmail.com

List of contents:

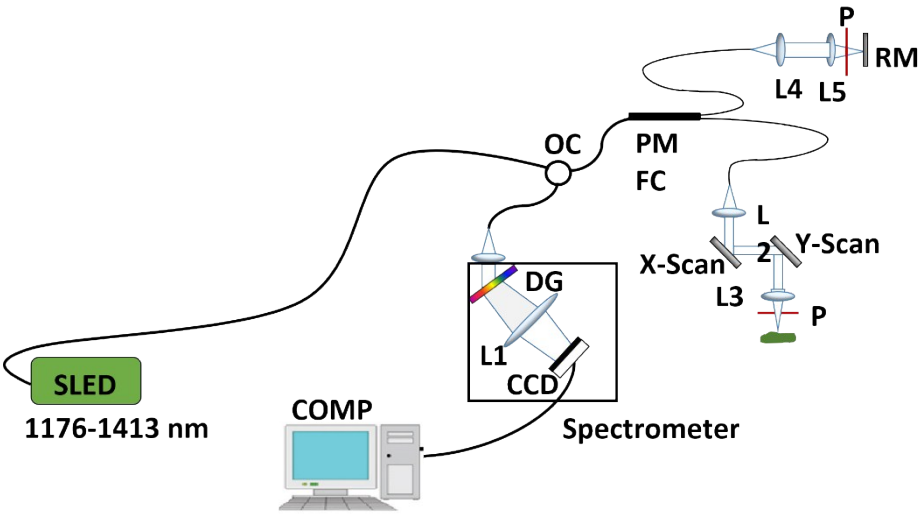

Figure S1: Schematic of optical coherence tomography.

2. **Flowchart:** nano sensitive optical coherence tomography **(nsOCT)**

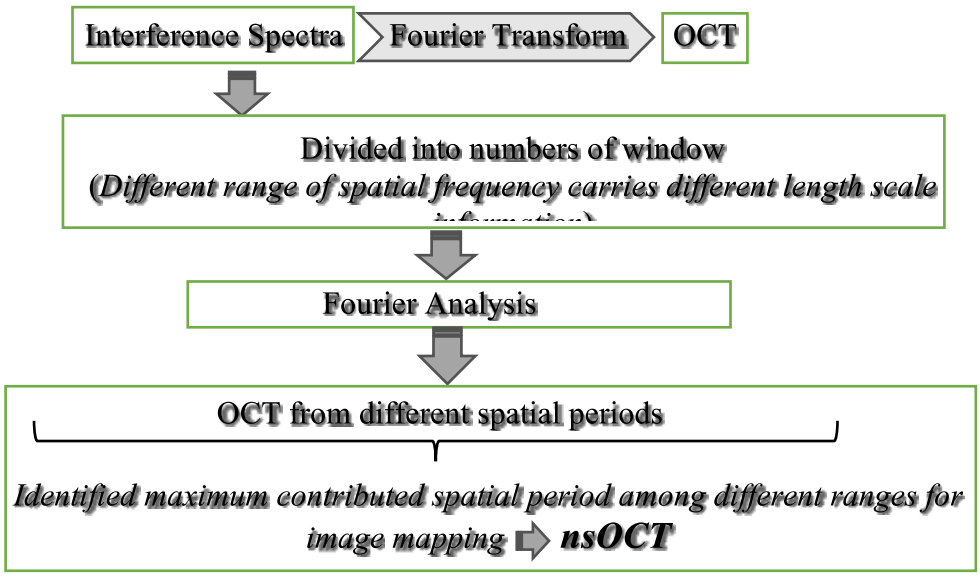

Figure S2: Flow chart of nano sensitive optical coherence tomography (nsOCT) image processing.

3. Maximum spatial period or dominant spatial period vs depth video:
   3.1 EnfaceHZvsDepth_Healthy.avi
   3.2 EnfaceHZvsDepth_Tumour.avi

4. Mean of dominant spatial period vs depth plots over number of healthy and tumour samples

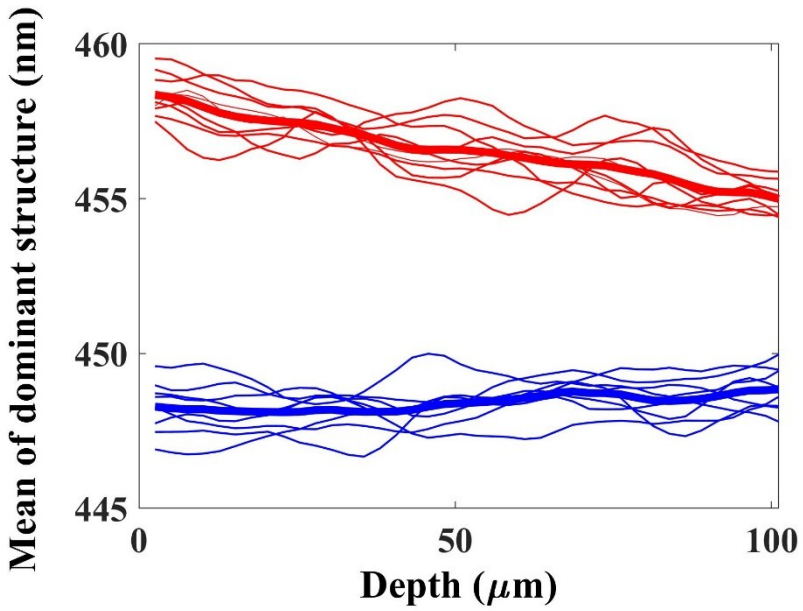

Figure S3: Mean of dominant spatial period vs depth plots over number of healthy and tumour (eight and ten samples respectively). The blue and red colour plots represent dominant submicron structure of healthy and tumour tissue respectively through ~ 100 µm tissue depth.