

THE CHERNOBYL TISSUE BANK – A QUALITY ASSURED RESOURCE FOR SYSTEMS BIOLOGY OF THYROID CANCER.

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Background/Purpose: The Chernobyl Tissue Bank (CTB) was established in 1998 to collect, store and distribute biological samples from patients with suspected thyroid cancer born on or after 26th April 1967 (i.e. under 19 at the time of the Chernobyl accident), and resident in Ukraine and Russia.

Methods: Patients give informed consent for the use of samples left over from their operation for research and a consensus diagnosis is provided by a panel of international pathologists. A sample of blood for extraction of DNA, serum and samples of both frozen (where the tumour is large enough) and formalin fixed paraffin embedded (FFPE) tumour and normal thyroid tissue are provided by each patient. The current collection includes 3969 cases of thyroid cancer and adenoma from patients aged between 5 and 45 at operation.. In order to maximise the use of the resource, nucleic acids are extracted from the same frozen tissue block, assessed for quality (e.g. RIN for RNA), aliquoted and distributed to multiple researchers. Individual sections from FFPE blocks from individual cases are also issued to multiple researchers.

Results: Researchers apply for material through an online portal (https://cisbic.bioinformatics.ic.ac.uk/ctb/html_ctb_public/). Researchers agree to provide data from their studies back to the project via a web-based interface. So far, 2547 aliquots of RNA and 1804 of DNA from tissue, 428 aliquots of DNA from blood and 7122 sections from FFPE blocks have been issued to researchers worldwide.

Discussion & Conclusion: The CTB provides a unique, quality assured resource for thyroid cancer studies on in the “omics” age.