

In March 2008, the nationwide virtual tumourbank project was launched by the Belgian Minister of Health, Ms. Laurette Onkelinx (initiative 27 of the Belgian Cancer Plan). The Belgian Virtual Tumourbank (BVT network) encompasses the tumour biobanks from eleven Belgian university hospitals ([click here](#) for the list) that collect and store residual human tumour samples locally. In order to facilitate the search for tumour samples scattered among different Belgian institutions, data collected at sample level is made available for researchers via the online BVT catalogue (BVTc) application. A high quality of the data on the tumour samples requested by scientists for research in oncology is guaranteed by automatic and manual controls performed by the BVT project team at the Belgian Cancer Registry.

CHILDHOOD CANCER SAMPLES IN THE BVT CATALOGUE

Each year, about 340 children and 180 adolescents in Belgium face the diagnosis and treatment of cancer. Childhood cancer comprises less than 1% of the total cancer burden. The BVT catalogue can facilitate the search for tumour samples scattered among different local biobanks, especially for less common cancers such as childhood cancers. If you want to know if the specific samples for your research are available in our catalogue, please request [full access](#) so you can browse freely through all available sample data and locate the matching samples for your study!

CHILDHOOD CANCER IN BELGIUM



A close collaboration between the Belgian Society of Paediatric Haematology Oncology (BSPHO) and the Belgian Cancer Registry resulted in a recent publication '[Cancer in children and adolescents – Belgium 2004-2016](#)'. The study describes 13 consecutive years of incidence data for Belgium, including survival data up to 5 (and if possible 10) years after diagnosis. In the publication as well as in this newsletter, the tumours are classified according to the International Classification of Childhood Cancer (ICCC-3)^{1,2}. As cancer is a rare disease in children and adolescents, analyses are based on small numbers.

WHICH MAIN TUMOUR TYPES ARE AVAILABLE?

In total, 95,199 registrations were available in the BVT catalogue at the moment of selection (September 2019). Based on the age criteria and taking all types of samples into account, **2,988** registrations from **1,555** patients could be retrieved in the BVTc. The BVT catalogue contains 1,928 registrations from 1,016 patients below 15 years of age and 1,060 registrations from 539 patients

¹Steliarova-Foucher E, Stiller C, Lacour B, Kaatsch P. International Classification of Childhood Cancer,. Cancer 2005;103:1457-67

²National Cancer Institute. International Classification of Childhood Cancer(ICCC) Recode ICD-O-3/WHO 2008. <https://seer.cancer.gov/iccc/>.

between 15 and 19 years. Slightly more registrations originate from boys (55.3%) than girls (44.7%). This is in line with the [publication](#) of the Belgian Cancer Registry where slightly more diagnoses are registered in boys (54%) than in girls (46%) when all malignancies are combined.

Table 1: Overview of the tumour types of childhood cancer samples in the BVTc

ICCC-3 classification	ALL (0-19y)	CHILDREN (0-14y)	ADOLESCENTS (15-19y)
I - Leukaemias, myeloproliferative and myelodysplastic diseases	19	12	7
II - Lymphomas and reticuloendothelial neoplasms	245	126	119
III - Central nervous system tumours and miscellaneous intracranial and interspinal neoplasms	307	244	63
IV - Neuroblastomas and other peripheral nervous cell tumours	71	67	4
V - Retinoblastoma	0	0	0
VI - Renal tumours	77	72	5
VII - Hepatic tumours	44	41	3
VIII – Malignant bone tumours	77	37	40
IX - Soft tissue sarcoma and other extraosseous sarcomas	94	59	35
X - Germ cell tumours, trophoblastic tumours and neoplasms of gonads	51	24	27
XI – Other malignant epithelial neoplasms and malignant melanomas	38	9	29
XII - Other unspecified malignant neoplasms	2	1	1
Total number of patients	1025	692	333

The most common tumour types of childhood cancer samples present in the BVT catalogues are lymphomas (II) and central nervous system tumours (III). All tumour types of the ICC-3 classification are available except retinoblastomas (V). Samples from hepatic tumours (VII), neuroblastomas (IV) and renal tumours (VI) are mainly originating from children; with only a few samples of adolescents.

STORAGE OF OTHER MATERIALS FROM CHILDHOOD SAMPLES

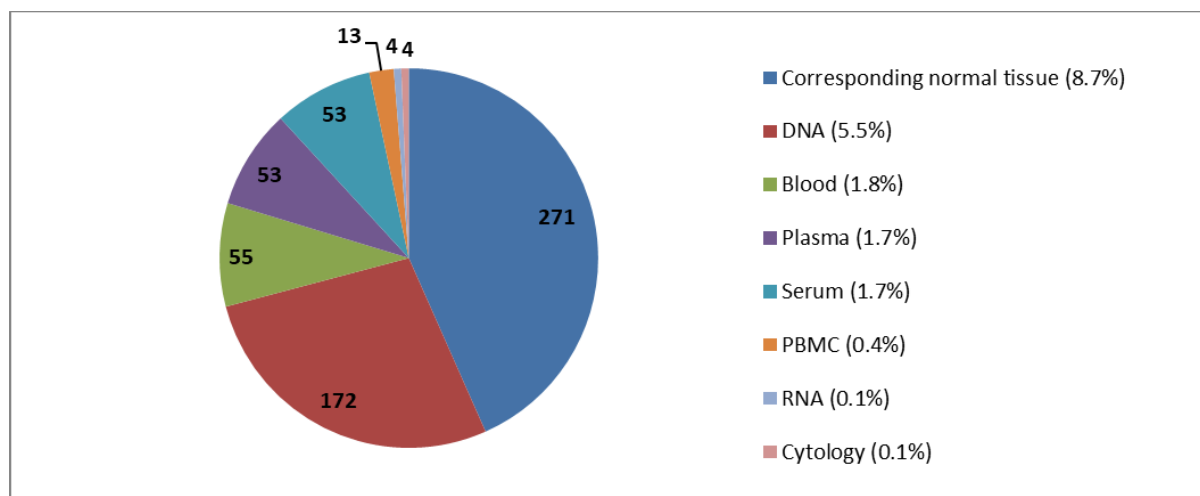


Figure 1: Overview of other available materials (beside tumour tissue) stored at the local biobanks for all childhood samples

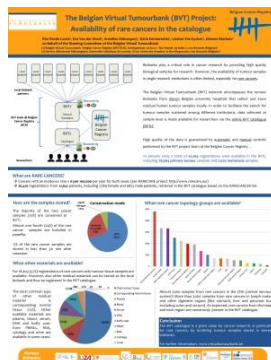
For 79.9% of the registrations, only residual tumour tissue is stored. For some patients, also additional types of material are stored at the local biobanks and registered in the BVT catalogue. The

most common types are corresponding normal tissue (8.7%) and DNA (5.5%). Blood (1.8%), plasma (1.7%) and serum (1.7%) are also available in some local biobanks. No buffy coats or urine samples of children and adolescents are registered in the BVT catalogue (figure 1).

As far as the conservation is concerned, 72.0% of the childhood samples is stored at -80°C, while 26.7% is included in paraffin blocks and 1.3% is stored in liquid nitrogen.

SPREAD THE WORD...

The Belgian Virtual Tumourbank team presented a poster at the BACR annual meeting (1st February 2019, Antwerp) and at the Europe Biobank Week (8-11th October 2019, Lübeck, Germany) in the category “Quality Assessment and Management of Data”. A paper on the [dataflow and quality controls of the Belgian Virtual Tumourbank](#) is published by Frontiers in Medicine.



Flyers on the BVT project have been distributed in 2019 at the Belgian Week of Gastroenterology (20-22nd February, Antwerp), BSMO annual meeting (22-23rd February, Liège), OncoPoint meeting (20th March, Gent), Oncoforum (7th June, Leuven) and the Europe Biobank Week (8-11th October, Lübeck, Germany).



Please let us know if you are aware of upcoming meetings where the BVT project can be presented or if you would like to receive BVT flyers for distribution in your institution.

For information on sample availability, [click here](#).

To gain full access to the online BVT catalogue, please follow the procedure indicated [here](#).

For further information: www.virtualltumourbank.be
biobank@kankerregister.org or biobank@registreducancer.org

Do you wish to be kept informed in the future?. Do you wish not to receive our information any longer?.

Send an email to biobank@kankerregister.org
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