MOSCATO 01 / PEDIATRICS
– HIGH SPEED GENOMICS
AS A DECISION TOOL FOR
MOLECULAR TARGETED
TREATMENT

Gustave Roussy’s medical researchers will be presenting their clinical and translational research papers at the 50th Annual Meeting of the American Society of Clinical Oncology (ASCO), the world’s biggest oncology gathering. This year there will be 18 oral papers presented by the Institute’s physician-researchers, including 10 on work carried out and 37 posters.
Dr Birgit Geoerger, from the children’s and adolescent cancer department of Gustave Roussy (Villejuif), has carried out a personalized medical feasibility study in pediatrics the results of which have been the subject of a written (poster) presentation at the 50th Congress of the American Society of Clinical Oncology in Chicago. This study shows that a high throughput molecular analysis of DNA from tumours sampled from children is feasible and enables these patients to be treated with therapies corresponding to detected genetic alterations. According to this work, the presence of numerous genomic alterations and limited access to target compounds in pediatric clinical trials, appear to be the limiting principal factors. This type of approach is a first in Europe.

A tissue sample, taken by biopsy or by surgical resection, was requested from 20 pediatric patients included in the study*.

The DNA of these tissues was analyzed, i.e., 74 genes of interest.

The abnormalities detected mainly concerned the signalization routes such as the PI3k/AKT/mTOR pathway, the RAS/RAF/MAPK pathway, growth factors such as ERBB, FGFR, PDGFR, cellular cycle kinases and mutation / deletion of the TP53 suppressor gene.

In 13 patients, a target gene of interest was located, 3 of them were able to receive a targeted therapy adapted to the profile found.

* Results updated since submission of the abstract
For the majority of the others, the absence of an on-going pediatric clinical trial or a too rapid progression of the tumour prevented their treatment from being adjusted.

**MOSCATO 01**
The MOSCATO protocol, promoted by Gustave Roussy (principal investigator: Prof. Jean-Charles Soria), has the aim of validating in clinical practice the implementation of high speed analytical techniques for the whole of the tumour genome of each patient.

This involves selecting patients who are carriers of a controllable molecular abnormality, that is to say, against which it is possible to act.

The first promising results were presented last year at the 49th ASCO Congress in an oral session by Dr Antoine Hollebecque.

Press release on the MOSCATO presentation at the ASCO 2013 congress

**CHILDHOOD CANCERS**
In France, close to 1,800 children develop a cancer every year, or 1 child out of 450.

During 40 years, progress in research has enabled the survival rate to be inverted.

Today, 80% of children are cured of their cancer, but for 20% of them, or 1 child out of 5, treatments are ineffective.

Furthermore, 40% of children cured of their cancer develop sequellae from the illness or due to treatment.

Cancers are the second cause of mortality in those under 15 years of age.

Only innovative research will enable treatments to be found in order to cure these cancers which together are rare, complex and rapidly progressive.

**PEDIATRIC DEPARTMENT AT GUSTAVE ROUSSY**
Forerunners in pediatric cancer treatment with the creation of the first dedicated unit in France, Gustave Roussy receives each year more than 410 new patients under 18 years of age suffering from cancer.

The medical team consists of 16 physicians and 80 healthcare support staff (nurses, psychologists, nursing auxiliary staff...)

The Institute has initially established innovate treatments which have become European or worldwide benchmarks, of early trials of innovative medicines and of research studies to reduce sequellae in adulthood in the context of long term follow-up.