2003 Dr.Ceyda Kabaroğlu,M.D. (Turkey)

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I was awarded with GSFF in 2004 to gain experience in performing with gas chromatography, and liquid chromatography with mass spectrometry in the diagnosis of inborn errors of metabolism .

Due to the requirements of my academic promotion, I was able to fullfill my fellowship in 2005.Below you will find the report of my training programme in Amsterdam.

Duration time in my host lab: 1-26 November 2005

Place of my training: Metabolic Unit, Depts of Clinical Chemistry and Pediatrics,
Vrije University Medical Center

Training programme:

On the first day I was introduced to the head of the metabolic unit, Prof.Dr. Cornelius Jakobs. After exchanging information about our universities and departments, we decided on a weekly plan for my training.During the first two days, I was introduced to the staff and was informed on the procedures being done in the laboratory.

My tutor's recommendation was that I should first learn the basic metabolic screening tests and then, to rotate on gas chromatography, and liquid chromatography with mass spectrometry.

The tests I have learned to perform which are involved in the Basic Metabolic Screening are the following;

1. **Determination of Mono-Di-Oligosaccharides in Urine Samples**:This is a chromatographic technique.After pretreatment of the specimens, samples are applied on silica gels and you make them run for 1.5 hours for two times.With coloring the bands, you are ready to intrepret the chromatogram.
2. **MPS screening in Urine Samples:** This test has two steps. In the first step, you measure the total amount of mucopolysaccharides in the specimen. If the result is

above the reference range then MPS electropheresis is performed. We only had 2 samples for the electrophoresis but it was educational.

3. **Methyl malonic acid quantification on LC/MSMS:** In this method all urine, CSF, heparinised plasma, amniotic fluid specimens can be used.
4. **Lactate And Pyruvate In CSF and deproteinated plasma:** This procedure is spectrophotometric.These two analytes are very important in interpreting metabolic acidosis observed in patients.I have also learned the pre-analytical and analytical factors influencing the procedure.
5. **Ketone Bodies (β- hydroxybutirate and acetoacetate) in blood and CSF:** These two ketoacids are important in determining mitochondrial defects .
6. **Organic Acids in Urine samples:** This procedure is the main concern of my training programme. It has two steps.After oximation and extraction phases, you load the samples to GC. The chromatogram is compared with the control.If an unknown peak is seen, then MSMS is used to identify it. I have learned the sample preparation and pre-analytical and analytical factors influencing the procedure.We had 10-15 samples every two days, therefore I did lots of chromatogram interpretations.
7. **Aminoacids in blood and urine:**For quantification and determination ,an amino acid analyser is used.I have learned the basic principles of the instrument and the tips in intrepreting the chromatograms.

Best regards,

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My personal view:

I would like to thank everyone who have approved my fellowship. It was a great experience for me. It is not just about the educational side, but the social benefits were also very pleasing.
Medical technicians working in my host lab were very experienced with their instruments. They were very helpful in learning the techniques and the principles.
I had the chance of visiting other related departments (clinical chemistry, pediatrics) and observing the health system.
The staff were very kind to perform their weekly journal watch in English just for me to understand.
I got to know my tutor, Dr. Cornelius Jakobs, who is one of the leading people in the field of organic acids.
Metabolic unit has two teams; one for the routine, one for the researches on DNA level. I did not have much time for the latter but, it was nice to meet the staff.
My host laboratory has been accredidated, therefore I saw the basic components required.
As for the social activities, I prepared a Turkish night on the last day before my departure.We had a great time. Enclosed you will find two photos;one with my tutor, one with the whole group.
Best regards,
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Picture of 2003 Dr. Ceyda Kabaroglu, Turkey