

Pesticides screening in hair by LCMS-QTOF

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INTRODUCTION

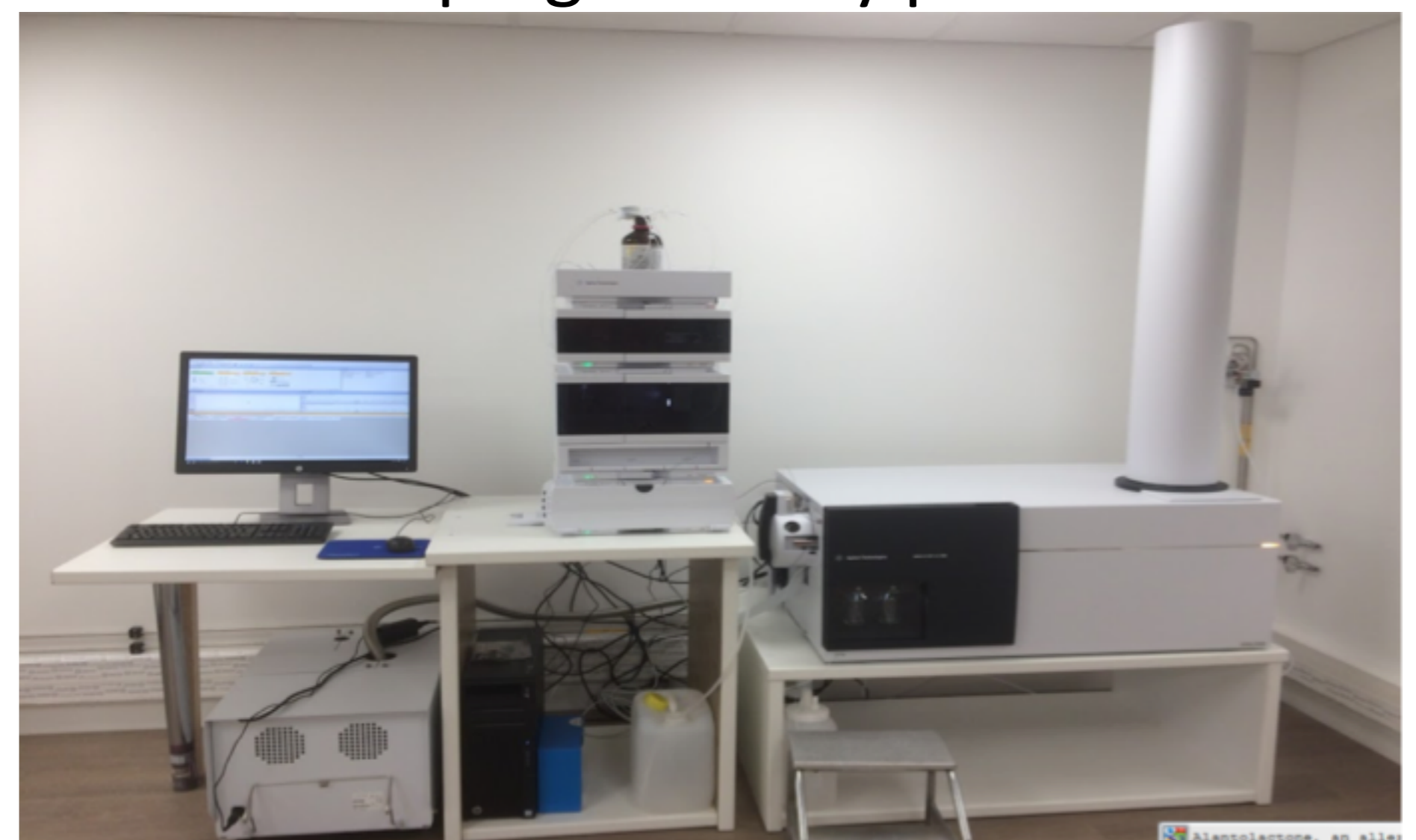
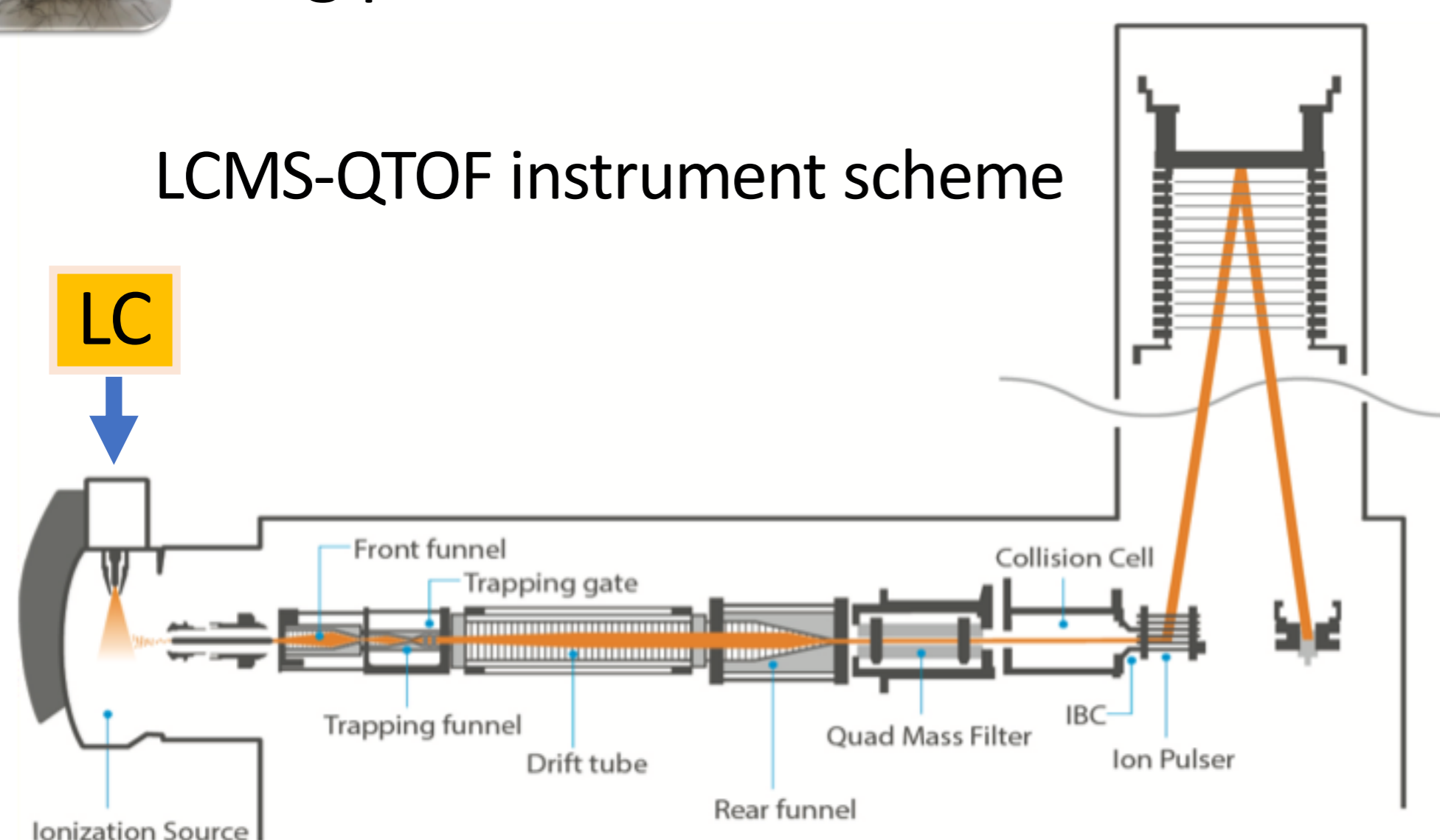
- An exponential increase of chronic diseases these last years → What responsibility for the Endocrine Disruptors (ED) ?
- **Main target** → The development of new analytical methods for the evaluation of organism's impregnation by ED.

International Medical Institute of Toxicology and pharmacology

- A pharmacotoxicology laboratory specialized in biological analysis.
- Main activities : Forensic Medicine, Addictology, Psychiatry, Toxicology in workplace and Profiles.
- **Internship** → The establishment of a person's toxicological profile, based on the analysis of his hair and nails.

Pesticides research in hair by LCMS-QTOF

 The hair = a biological matrix → Allows a research of an impregnation by pesticides over a long period.



LCMS-QTOF instrument at I-MITOX

PRINCIPLE

- The quadrupole → Enables the selection of ions of interest.
- Collision cell → Enables the ions dissociation.
- The Time Of Flight analyser → Corrects the time of flight differences between two ions with the same ratio masse/ charge (m/z): High resolution of MS.

ADVANTAGES

- Allows the analysis of organic compounds.
- Allows the analysis of complex matrix.
- Provides high sensitivity and selectivity.
- Provides high-accuracy and high resolution.
- Enables the identification of substances present at a trace level.

CONCLUSION

- ✓ Recent studies reveal the implication of ED in the increase of chronic diseases such as Type 2 diabetes, cancer, obesity, neurological disorders...
- ✓ The analysis of biological matrix as hair permits the identification of several ED in one's organism.
- ✓ Analytical methods such as LCMS-QTOF are very promising in the field of research.
- ✓ **This internship :**
 - Strengthened my motivation and my desire to pursue my future carrier in analytical chemistry.
 - Allowed me to discover new analytical methods.

Bibliography

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