



PAGés : an amazing tool for private and academic researchers !

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INTRODUCTION

Established at the end of 2012, it is supported by French national scheme for platform coordination (IBiSA) that assesses national and international standards of analytical quality. PAGés (Plateforme d'Analyse des Glycoconjugués) is dedicated to glycan and glycoconjugates analyses irrespective of their origin (i.e. glycolipids, glycoproteins, polysaccharides, oligosaccharides...). It provides strategic and technical supports in glycan and glycoprotein structural analyses for both academic and private sectors and free technical support for the research teams from the research consortium FraBio. It is open for student teaching and gives training courses. To carry out these missions, PAGés has access to a wide panel of technologies including mass spectrometry, NMR and gas chromatography through the platforms of the UMR 8576, the University Lille1 and CNRS. In particular, PAGés disposes of various NMR spectrometers that are matched to different magnetic fields (9.4, 18.8 and 21.9 Teslas) where protons resonate at 400, 800 and 900 MHz. Out of those, the 900 MHz spectrometer is equipped with a high sensitivity cryogenic probe head and a sample-jet robot for high-throughput analyses. Also, members of PAGés have access to a wide range of mass spectrometers including MALDI-TOF/TOF, GC-MS/MS or μ LC-MS. Finally, PAGés can use a large panel of chemical technics to extract, purify and modify glycans or related molecules.

PEOPLE



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Nuclear Magnetic Resonance Facilities



Figure 1 : NMR 900 equipped with a cryo-probehead and a sample jet for high-throughput analyses



Figure 2 : NMR 900 equipped with a 4mm HR-MAS probehead for the *in vivo* analyses

Mass spectrometry facilities



Figure 3 : Amazon Speed EDT (Bruker), coupled to a μ -LC for glycoproteomics



Figure 4 : 4800 plus MALDI-TOF/TOF (Sciex)



Figure 5 : GC-MS/MS (Thermo Scientific) spectrometer for glycan analyses



Figure 6 : HPAEC (donex®) with autosampler (amperometric detection)

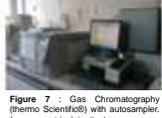


Figure 7 : Gas Chromatography (Thermo Scientific) with autosampler (amperometric detection)

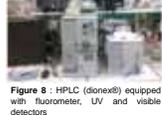
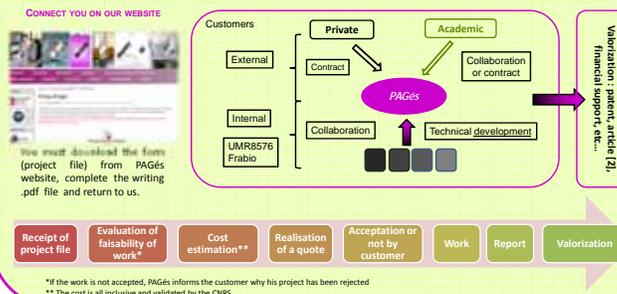


Figure 8 : HPLC (donex®) equipped with fluorometer, UV and visible detectors

How to do work with us ?



*If the work is not accepted, PAGés informs the customer why his project has been rejected
** The cost is all inclusive and validated by the CNRS

TOOLS

Chemistry-Biochemistry

PAGés has an expertise in sugar chemistry as well as hydrolysis, solvolysis, derivation, coupling etc... prior to analyses. Moreover, PAGés uses a large panel of lectins and antibodies for molecular detection and various kinds of glycoconjugates.

Chromatographies

PAGés disposes of several kinds of chromatographs : Gas chromatographs (FID and/or MS-MS detection, Fig. 7 and 5) HPLC (High Performance Liquid Chromatography) with UV, visible or fluorometric detections (μ LC, mLCC) (Fig. 8) HPAEC (High Performance Anionic Exchange Chromatography) (Fig. 6)

Mass Spectrometry

PAGés disposes of various mass spectrometers (Fig. 3, 4 and 5) allows us to achieve primary structures of all kinds of glycans, to do glycan mapping, in support of NMR analyses.

Nuclear Magnetic Resonance

PAGés disposes of various NMR spectrometers that are matched to different magnetic fields (9.4, 18.8 and 21.9 Teslas) where protons resonate at 400, 800 and 900 MHz. Out of those, the 900 MHz spectrometer is equipped with a high sensitivity cryogenic probe head and a sample-jet robot for high-throughput analyses. Moreover, PAGés is able to perform HR-MAS (High Resolution-Magic Angle Spinning) analyses for pro- and eukaryotic cells (Bacteria, yeasts) or high molecular weight molecules.

Moreover, we have developed the GlycoBase (glycobase.univ-lille1.fr) a NMR-database specialized for O- and N-glycans that uses SOACS-index [1] as request tool.

Bio-informatic

PAGés is owner and builder of the NMR database (GlycoBase) which is very original since only original spectra are presented and annotated, allowing to compare with your original spectra. PAGés is owner of a "Dell power edge 510" computer for calculation and modeling.

PARTNERS



CONTACT US

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CONCLUSION

PAGés is able to achieve primary structure of all kinds of glycans as glycolipids, free and linked O-Glycans, N-glycan and polysaccharides. Moreover, our platform can resolve glycan mapping of various types of glycoproteins, cells and tissues.

EXEMPLES

References

- 1-Maes E. *et al.* 2009, Carbohydr. Res., 344, 322-30.
- 2-Sendid B. *et al.* 2015, Clin. Microbiol. Infect., 21, 88.e1-88.e6

