

Q2 2011

AROS Applied Biotechnology

QUARTERLY NEWSLETTER

Q2- 2011



AROS now also offers Professional consultation

AROS has over the course of more than 10 years and 1000s of projects, accumulated experience in selecting the right methodology for the right purpose. It has always been an integral part of AROS services to use this experience to assist customers in choosing the solutions that will enable them to get the best possible results.

With an increasing number of inquiries about expert advice, independent of specific projects, AROS has formalized a small portfolio of consulting services to enable more customers to take advantage on our knowledge and expertise above and beyond specific projects.

Consulting area:

- Support in selecting the methodology and technical platforms for molecular analysis in specific projects
- Assistance in developing the experimental design in specific projects
- Support in developing outsourcing strategies for molecular analysis
- Advice in developing general strategies for usage of molecular analysis in research
- Specific proposals for savings in your total costs on molecular analysis based on historic and current activities
- Consultation in building in-house molecular analysis capabilities or improve productivity of in-house functions with a focus on operational excellence and bench marking
- Consulting on out-sourcing of molecular services

Formats:

- Facilitation of in-house workshop
- One day workshop on selected subjects
- Commenting and challenging your own already developed solutions at meetings with AROS
- A detailed written presentation/report with specific recommendations, prioritizations, ideas and considerations as well as expected impact, and a meeting with discussions of the report

All consulting assignments are conducted within a predefined structured framework tailored to the specific project, including:

- A Project Team
- A clear definition of objectives in a Project Brief or a Business Case
- A documented and recorded fact finding phase
- Analysis and clarification of facts
- Conclusions

The pricing for each consulting service will be fixed and determined on an hourly basis.

Consultation services are carried out by our normal staff of scientists that have hands on experience. Therefore there are constraints on the number of consultant assignments that we can take on.

Illumina Next Generation Sequencing Technology

AROS has finalized the installation of a new Illumina HiSeq 2000, and has there expanded its services in high-throughput sequencing using Illumina TruSeq protocols.

AROS offers cost competitive NGS services at our known high quality standards including among others:

- DNA sequencing using Illumina's TruSeq DNA protocol, incl. exome targeting and mitochondrial DNA enrichment.
- mRNA sequencing using Illumina's TruSeq RNA protocol, incl. ribosomal removal.
- Small RNA sequencing using Illumina's TruSeq small RNA protocol.

Though the latest Illumina flow cells have increased the capacity for whole genome sequencing, there are many situations where targeting specific regions of the genome by DNA enrichment techniques can greatly improve the efficiency. AROS has performed exome sequencing, where only the protein-coding regions are sequenced as well as custom targeted sequencing. With Illumina's TruSeq exome enrichment technique 96-112 exomes can be sequenced per run on the HiSeq 2000.

Small RNA and mRNA-Sequencing can be used to obtain a comprehensive view of the transcriptome. In contrast to micro arrays, the sequencing technology does not depend on probe selection and the generated data are completely unbiased. Therefore, in addition to gene expression analysis, mRNA sequencing allows for the discovery of novel transcripts, novel isoforms, alternative splice sites, rare transcripts, and SNPs in one experiment. One important consideration is the depth of sequence coverage required to achieve the desired sensitivity and specificity. In addition, high-throughput sequencing of small RNAs can give a complete picture of microRNA expression in the sample.

NGS is a rapidly evolving technology that is changing on an almost daily basis. With our new sequencing platform AROS can provide a huge variety of applications. Initially our services will be focused on a subset of these, however, with our trademark flexible set-up we will continue to accommodate specific needs of our customers and expand our NGS portfolio accordingly.

Completing Good Clinical Practice implementation

As you are well aware, AROS has been a leader among genomic service providers in implementing Good Laboratory Practice. Where others rely on "compliance statements", we maintain that a formal time-limited certification is the best guarantee to our customers of our quality standards. Since our first certificate in 2005 our certification has been renewed 3 times; last time as of October 2010. (valid until December 2012.)

At AROS our entire quality management system is built around Good Laboratory Practice. However handling and analysis of Clinical Trial samples are subject to Good Clinical Practice (GCP). The European guideline for Good Clinical Practice in Laboratories is in the late development phase. With respect to this AROS is in the process of implementing procedures to ensure compliance with GCP when analyzing clinical trial samples. Firstly all employees have been trained through 2010/2011 in GCP by attending a 1 day external GCP course. Secondly procedures are being revised and new procedures and documents established to cover issues concerning patient safety and confidentiality.

AROS manages government funded project to use FFPE tissue samples in NGS

For more than a century hospitals all over the world have collected and conserved patient tissue samples and embedded them in paraffin (FFPE). Globally the number of FFPE samples accompanied by clinical information totals more than a billion and represents an invaluable source of material for research into diseases, diagnostics and response to treatment, etc.

In the fall of 2010 AROS initiated a 3 years project together with CLC Bio, Roche Pharmaceuticals and Aarhus University.

Based on the participants' extensive experience with nucleic acids and optimization of molecular analysis processes as well as automating complex bioinformatic analysis, the project is focusing on developing a robust integrated platform for the large scale analysis of FFPE using *next generation sequencing* (NGS) technology.

After kick-off of the project in September, a library of available FFPE samples representative of different diseases and tissue types has been established. In order to develop optimized protocols, a series of experiments has been initiated to test and evaluate each FFPE specimen group with existing technologies, reagents and kits for extraction and sample preparation to record performance variables with different types of FFPE tissue.

We plan to bring regular updates on the projects.

Company contact:

AROS Applied Biotechnology A/S
Brendstrupgaardsvej 102
DK-8200 Århus N
Denmark
Phone: +45 70 27 11 70
Fax: +45 70 27 11 80

internet: www.arosab.com
Email: info@arosab.com

