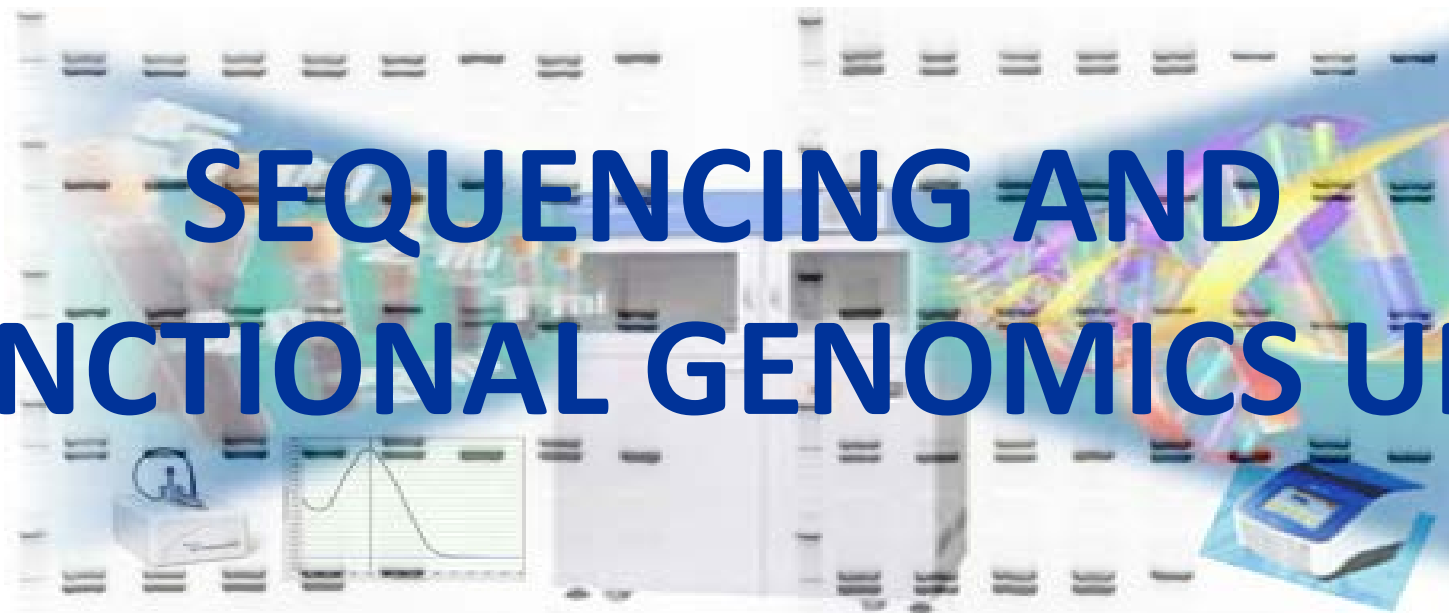
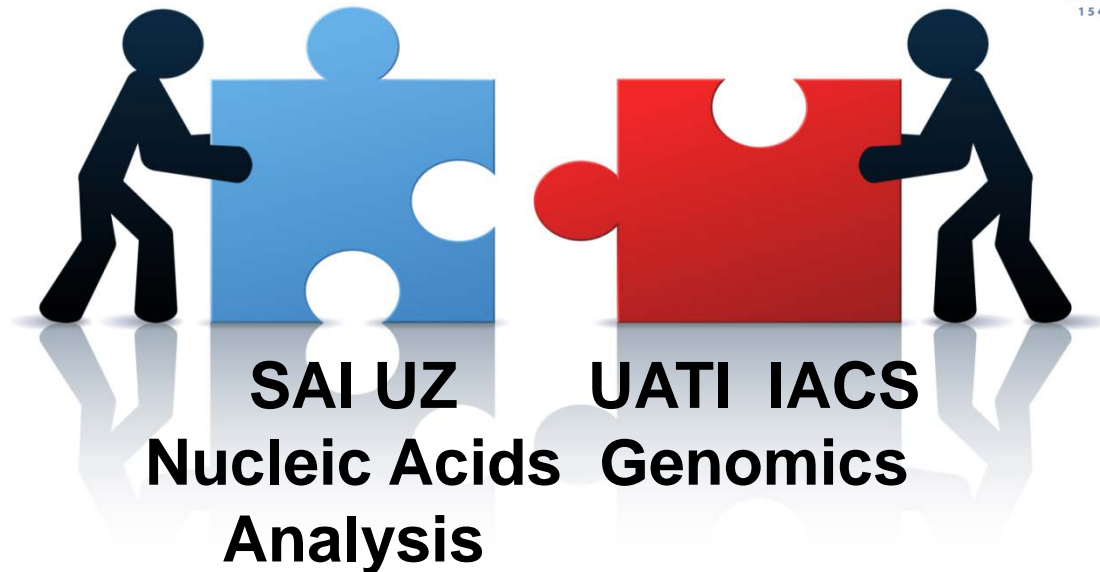


PLATFORM MEETING

SEQUENCING AND FUNCTIONAL GENOMICS UNIT

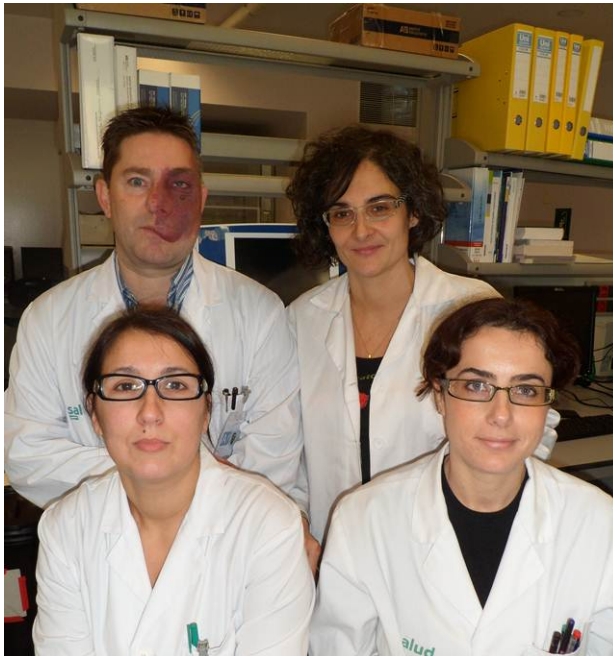


Biomedical Research Center of Aragón (CIBA)
Zaragoza





Main Services: Real Time-PCR, Sequencing and Genotyping
Study of micro-organisms, plants, animals and humans

STAFF



Pilar Mozas
Mark Strunk
Irene Santos
M^a Jesús Andrés

SERVICE PORTFOLIO

SERVICE	EQUIPMENT	
DNA extraction -Manual -Automated	✓ AutoGenFlex3000 System (Autogen) Large volume DNA extraction Whole blood, tissue samples, cultured cells and saliva 40 samples per batch	
Analysis of amount and integrity of Nucleic Acids	✓ Experion Automated Electrophoresis System (Bio-Rad) ✓ Nanodrop-1000 (ThermoScientific)	



Projects

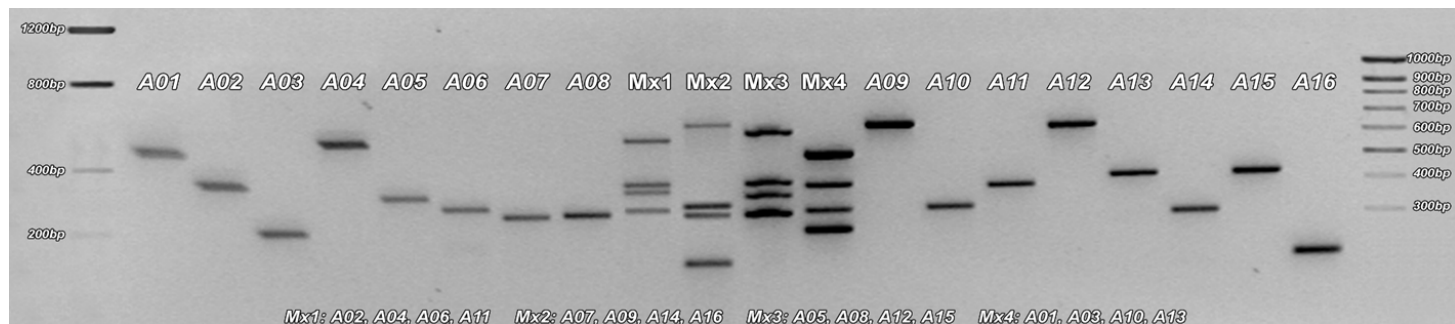
Biobank Aragón

Gastrointestinal Pathology (Program to prevent colorectal cancer)

Primary Dyslipidemia



SERVICE PORTFOLIO

SERVICE	EQUIPMENT	
Oligonucleotids design	<ul style="list-style-type: none"> ✓ Oligo 7 ✓ PyroMark Assay Design 	
Amplification of DNA by PCR	<ul style="list-style-type: none"> ✓ Verity thermocyclers (Applied Biosystems) 	



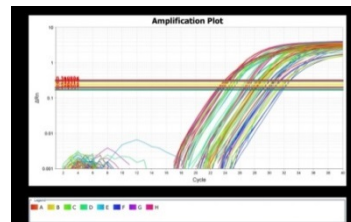
SERVICE PORTFOLIO



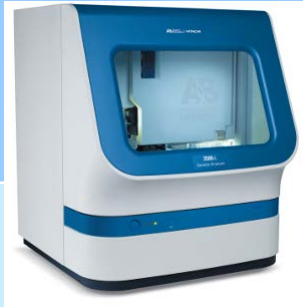

SERVICE	EQUIPMENT	
<p>Real Time-PCR:</p> <ul style="list-style-type: none"> -Gene Expression analysis -Genetic Variation analysis: <ul style="list-style-type: none"> *SNP genotyping (allelic discrimination) *Copy Number Variation (CNV) -Presence/Absence studies 	<p>Real Time PCR instruments</p> <ul style="list-style-type: none"> ✓ ViiA7 (Applied Biosystems) Up to 6 fluorophores simultaneously Medium to high throughput Interchangeable blocks <ul style="list-style-type: none"> -Fast 96-well plates -TaqMan Array Microfluidic Cards ✓ ABI PRISM 7000 (Applied Biosystems) 	 

Projects

MicroRNA study in rare diseases
 CNV study in pharmagenetics



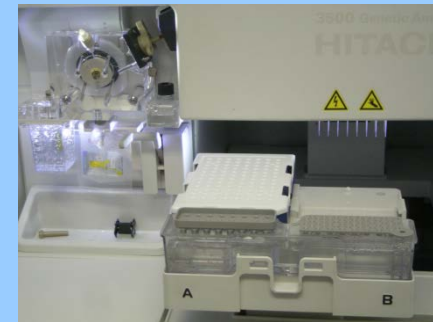
SERVICE PORTFOLIO

SERVICE	EQUIPMENT	
DNA Sequencing: -De novo sequencing -Resequencing	Sequencing instruments: ✓ 3500XL Genetic Analyzer (Applied Biosystems) ✓ MegaBACE 500 Sequencing System (GE Healthcare)	
Fragment Analysis: -Microsatellites -AFLPs -MLPA -LOH		
SNP genotyping		

SERVICE PORTFOLIO

3500XL Genetic Analyzer

24 uncoated capillary instrument
50 cm detection length
6 fluorophore detection
1 solid state laser scanning
96-well plate format
A single polymer (POP 7) and capillary array
≥850 bp read length

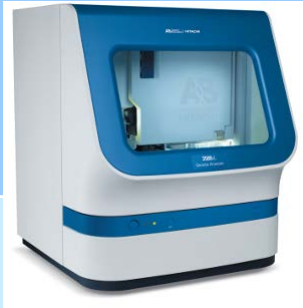



Software:

- 3500 Data Collection
- Sequencing Analysis™ v5.4
- Seq Scape v2.7
- Variant Reporter™ v1.1
- GeneMapper™ v4.1



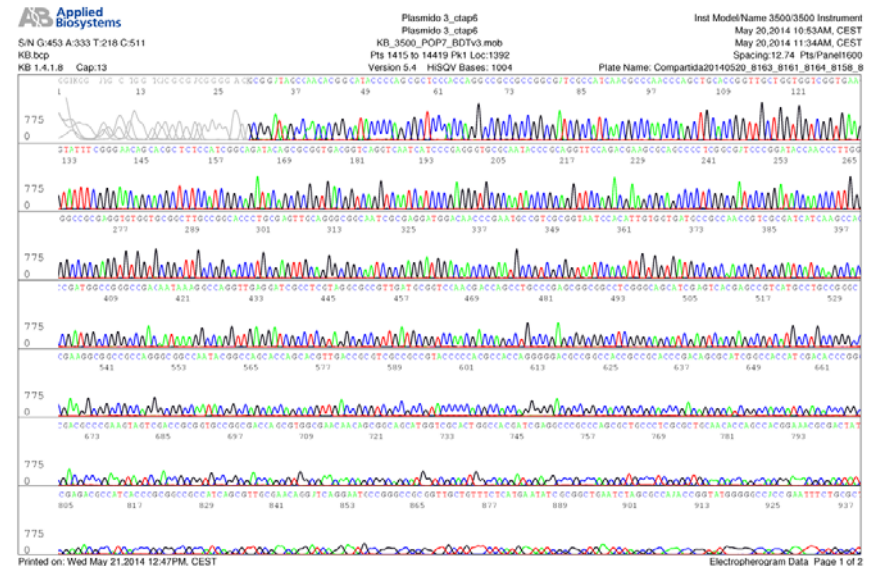
SERVICE PORTFOLIO

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Fragment Analysis: -Microsatellites -AFLPs -MLPA -LOH		
SNP genotyping		

Projects

- ✓ Mutation screening for University Hospitals:
 - Hereditary breast and ovary cancer
 - Colon cancer
 - MODY diabetes

- ✓ Resequencing to establish the molecular basis of human hereditary diseases:
 - Research on genes related to primary dyslipidemia and atherosclerosis
 - Rare diseases of plasma high-density lipoproteins
 - Investigation of the genetics of coronary heart disease risk in subjects with familial hypercholesterolaemia
 - Relationship between chitotriosidase genotype and immune response to oxidized LDL in subjects with familial hypercholesterolemia and beta-thalassemia



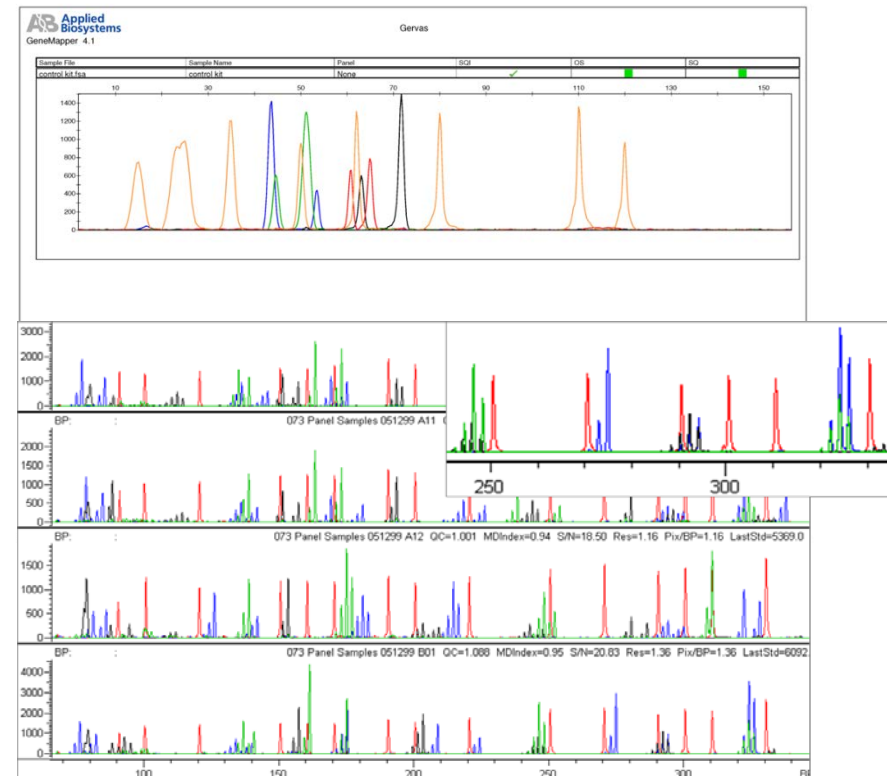
Projects

✓ Microsatellite Analysis:


- Characterization of grape vine cultivars by molecular markers
- Microsatellite fragments size determination for individual identification and parentage testing, mutation search in veterinary pathology, mutations involved in ovine prolificacy species, identification by DNA-barcoding, mitochondrial DNA biodiversity, SRY biodiversity

✓ SNaPshot:

- Classification of Tuberculosis Strains.
- Genetic variability in genes related to bone metabolism in Gaucher Disease patients



SERVICE PORTFOLIO

SERVICE	EQUIPMENT	
Pyrosequencing: -DNA Methylation studies -SNP analysis	✓ Pyrosequencer PSQ 96MA (Biotage) 96 samples simultaneously	

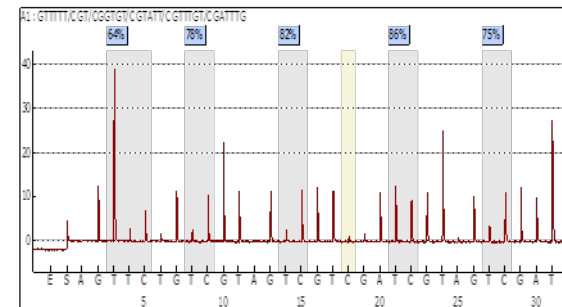
Projects

SNP genotyping:

- Photobiology and Dermatology
- Digestive Diseases

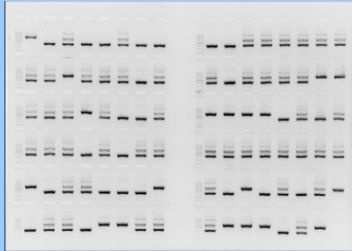
DNA methylation:

- Neurosurgery (MGMT promoter methylation in malignant gliomas)



SERVICE PORTFOLIO



SERVICE	EQUIPMENT	
Mouse Genotyping	PCR	

Projects

Neurodegeneration:

- Alzheimer
- Amyotrophic lateral sclerosis (ALS)

FUTURE

- ✓ NEXT GENERATION SEQUENCING
- ✓ Automated robotic system

Call 2010 - Sub-Project on Scientific and Technological Infrastructure co-financed with FEDER (Proposal UNZA10-4E-794. Net worth 215.990 €. Time Scale: 01/01/2010-31/12/2012. Extension 31/12/2015)

SEQUENCING AND FUNCTIONAL GENOMICS UNIT



DNA/RNA Extraction



Cloning



Pre-PCR



Post-PCR



THANKS!

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