Introducing SPREC in a software for Biobank

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BioBIM Interinstitutional Multidisciplinary Biobank IRCCS San Raffaele Pisana

OLOMEDIA

Who I am and what I do

I was born in Palermo in 1971 (Sicily,Italy) and having grown up with cartoons, a soccer ball , books and arcade games in the summer of 1986, my uncle gave me a COMMODORE 64 and this changed my life.

OLOMEDIA

PALERMO PHP USER GROUP

opendata sicilia

www. Sputnix.it

GDG Palermo

Operating System

Ubuntu, CentOS
Mac OSX
Windows
IOS
Android
Embedded OS: Raspbian,Pidora

General

Management
Team Leader
Quality Manager
Web Architect
Healthcare IT Consultant
UX Expert

Developer

PHP (5 years)
Javascript (10 years)
ASP(12 years)
MySQL (5 years)
HTML, CSS3 (14 years)
Ruby, Rails (1 year)

Olomedia

When start-up enthusiasm meets the experience of pros

Thanks to our passion and constant updating, we are the perfect partner for private and public companies that want to improve their operational processes with new technologies. We lean towards partner satisfaction with the aim of catering for the business, providing innovative software products and solutions for IT management.Our core business is to develop "web based" healthcare solutions and to develop software.

OLOMEDIA

Features of our software

USER FRIENDLY

TOTALLY CONFIGURABLE

WEB BASED

TEST TEST TEST TEST TEST

Apps for smartphone

“Io sono pulito”

The game (produced in collaboration with Rotary Organization) promotes health and civic education among adolescents in school.

“Tombola”

The Electronic version of a traditional board game, similar to the game of bingo. Tombola is mostly played during Christmas time.

“DoctOral”

Doctoral provides a guided path for:

- diagnosis of oral lesions
- a patient's dental treatment who is subject to osteonecrosis

“Word Counter”

Enter any text via keyboard (or paste it from other applications), and WordCounter calculates the number of sentences, words and characters.

Our software for Health Sector

oloREFERTI

oloCUP

The solution for healthcare organizations for managing booking, admissions, invoicing, audit reporting of out-patient visits and diagnostic tests. oloCUP allows to administer agendas, re-scheduling and exemptions.

oloPS

oloPS helps medical and paramedical teams in emergency departments for triage and the cure of patients; it simplifies the collaboration and optimization of these operations.

oloREFERTI

oloREFERTI allows to write and archive electronically signed medical reports, patients can get them through the web. The system alerts users by sms or email to allow them to download their results.

oloHEALTH

The full-featured software for medical and nursing records. It allows to manage bed occupancy, patient's personal details, admissions, discharges, therapeutic and diagnostic workflows including anamnesis, clinical records, medical prescriptions, drug dosage, admission and discharge charts, etc. oloHEALTH can also interface with other external softwares to calculate DRGs and DTSs

oloHEALTH_BioBank

“Freeing the physician from duties to honor the Hippocratic Oath”

Medical and nursing care records in a unique software, easy to use, accessible from any device and scalable to any business need. oloHEALTH allows the management of beds, master data, procedures for acceptance and resignation, prescription and therapy, and all the diagnostic and care Work Flow. And if this is not what you need lets design it together!

oloHEALTH is part of the oloHIS suite finalized for healthcare organizations.

BioBIM
Interinstitutional Multidisciplinary Biobank
IRCCS San Raffaele Pisana

ISTITUTO DI RICERCA
SDN
IRCCS

BioBIM

The BioBIM is an organized collection of biological samples obtained from individuals attending several Italian institutions. The BioBIM operates under the auspices of the San Raffaele Hospital and Research Institute in Rome, Italy, a private Scientific Institution certified by the Italian Minister of Health. The BioBIM is ISO certified.

BioBIM operates with the aims of:

- collecting and analyzing high-quality biological specimens from all participating Units, in an efficient, organized and accessible manner.
- connecting professionals with each other, to provide a multidisciplinary research structure, properly embedded into European ethical and legal frameworks.
- facilitating translational research, enabling the participants to apply biomarker discoveries to clinical outcome studies and novel targets for therapy.

What is SPREC Code?

SPREC CODE

SPREC has released by The **ISBER (International Society for Biological Environment Repositories)** Biospecimen Science Working Group. ***Sprec*** is aimed at standard coding of the preanalytical options which have been adopted, in order to track and make explicit preanalytic variations in collection, preparation and storage of specimens. Each biospecimen is assigned to a seven-element-long code that corresponds to seven preanalytical variables and contains a string of letters (different for fluid or for solid tissues) in a defined order, separated by hyphens.

SPREC Code

Fluid biospecimens

Type of sample | Type of primary container | Precentrifugation | Centrifugation | 2°Centrifugation | Post Centrifugation | Storage Condition

Solid biospecimens

Type of sample | Type of collection | Warm Ischemia time | Cold Ischemia time | Fixation Type | Fixation Time | Storage Condition

SPREC Code Tables for FLUID

Type of sample	
Ascites fluid	ASC
Amniotic fluid	**AMN**
Bronchoalveolar lavage	**BAL**
Blood (whole)	**BLD**
Bone marrow aspirate	**BMA**
Breast milk	**BMK**
Buccal cells	**BUC**
Unficolled buffy coat, viable	**BUF**
Ficoll mononuclear cells, viable	**CEL**
Fresh cells from non blood specimen type	**CEN**
Cells from nonblood specimen type (e.g., disrupted tissue), viable	**CLN**
Cord blood	**CRD**
Cerebrospinal fluid	**CSF**
Nasal washing	**NAS**
Ficoll mononuclear cells, nonviable	**PEL**
Cells from nonblood specimen type (e.g., disrupted tissue), nonviable	**PEN**
Pleural fluid	**PFL**
Plasma, single spun	**PL1**
Plasma, double spun	**PL2**
Saliva	**SAL**
Semen	**SEM**
Serum	**SER**
Sputum	**SPT**
Stool	**STL**
Synovial fluid	SYN
Tears	**TER**
24-h urine	**U24**
Urine	**URN**
Other	ZZZ

Type of primary container	
Vacutainer acid citrate dextrose or equivalent	**ACD**
Vacutainer citrate phosphate dextrose or equivalent	**CPD**
Vacutainer lithium heparin or equivalent	**HEP**
Vacutainer hirudin or equivalent	HIR
Oragene collection container or equivalent	**ORG**
Paxgene blood RNA+	**PAX**
Vacutainer potassium EDTA or equivalent	**PED**
S8820 protease inhibitor tablets or equivalent	**PI1**
Protease inhibitors	PIX
Polypropylene tube sterile	PPS
Paxgene blood DNA	PXD
Paxgene bone marrow RNA	PXR
Vacutainer sodium citrate or equivalent	**SCI**
Vacutainer sodium EDTA or equivalent	**SED**
Vacutainer sodium fluoride/potassium oxalate or equivalent	**SPO**
Vacutainer serum separator tube or equivalent	**SST**
Tempus tube	**TEM**
Vacutainer trace elements	TRC
Unknown	XXX
Other	ZZZ

Precentrifugation (delay between collection and processing)		
RT*	<2 h	A
3°C to 7°C	<2 h	B
RT	2-4 h	C
3°C to 7°C	2-4 h	D
RT	4-8 h	E
3°C to 7°C	4-8 h	F
RT	8-12 h	G
3°C to 7°C	8-12 h	H
RT	12-24 h	I
3°C to 7°C	12-24 h	J
RT	24-48 h	K
3°C to 7°C	24-48 h	L
RT	>48 h	M
3°C to 7°C	>48 h	N
35°C to 38°C	<2 h	O
Unknown		X
Other		Z

Centrifugation		
RT 10 min	<3,000 g no braking	A
RT 10 min	<3,000 g with braking	B
3°C to 7°C 10 min	<3,000 g no braking	C
3°C to 7°C 10 min	<3,000 g with braking	D
RT 10 min	3,000-6,000 g with braking	E
3°C to 7°C 10 min	3,000-6,000 g with braking	F
RT 10 min	6,000-10,000 g with braking	G
3°C to 7°C 10 min	6,000-10,000 g with braking	H
RT 10 min	>10,000 g with braking	I
3°C to 7°C 10 min	>10,000 g with braking	J
No centrifugation		N
Unknown		X
Other		Z

Second centrifugation		
RT 10 min	<3,000 g no braking	A
RT 10 min	<3,000 g with braking	B
3°C to 7°C 10 min	<3,000 g no braking	C
3°C to 7°C 10 min	<3,000 g with braking	D
RT 10 min	3,000-6,000 g with braking	E
3°C to 7°C 10 min	3,000-6,000 g with braking	F
RT 10 min	6,000-10,000g with braking	G
3-7°C 10 min	6,000-10,000 g with braking	H
RT 10 min	>10,000 g with braking	I
3°C to 7°C 10 min	>10,000 g with braking	J
No second centrifugation		N
Unknown		X
Other		Z

Postcentrifugation delay	
<1 h 3°C to 7°C	A
<1 h RT	B
1-2 h 3°C to 7°C	C
1-2 h RT	D
2-8 h 3°C to 7°C	E
2-8 h RT	F
8-24 h 3°C to 7°C	G
8-24 h RT	H
>24 h 3°C to 7°C	I
>24 h RT	J
Unknown	X
Other	Z

Long-term storage		
PP tube 0.5-2 mL†	–85°C to –60°C	A
PP tube 0.5-2 mL	–35°C to –18°C	B
Cryotube 1-2 mL	Liquid nitrogen‡	C
Cryotube 1-2 mL	–85°C to –60°C	D
Cryotube 1-2 mL	Programmable freezing to <–135°C	E
Straw	Liquid nitrogen	F
Straw	–85°C to –60°C	G
Straw	–35°C to –18°C	H
Straw	Programmable freezing to <–135°C	I
PP tube ≥5 mL	–85°C to –60°C	J
PP tube ≥5 mL	–35°C to –18°C	K
Microplate	–85°C to –60°C	L
Microplate	–35°C to –18°C	M
Paraffin block	RT	P
Unknown		X
Other		Z

SPREC Code Tables for SOLID

Type of sample	
Fresh cells from nonblood specimen type	**CEN**
Cells from nonblood specimen type (e.g., disrupted tissue), viable	**CLN**
Cells from fine needle aspirate	FNA
Hair	**HAR**
Cells from laser capture microdissected tissue	LCM
Cells from nonblood specimen type (e.g., disrupted tissue), nonviable	**PEN**
Solid tissue	**TIS**
Cells from disrupted tissue	LCM
Other	ZZZ

Cold ischemia time	
<2 min	A
2-10 min	B
10-20 min	C
20-30 min	D
30-60 min	E
>60 min	F
Unknown	X
Not applicable (e.g., autopsy)	N
Other	Z

Fixation type	
Nonaldehyde with acetic acid	ACA
Aldehyde based	ALD
Alcohol based	ETH
Nonbuffered formalin	FOR
Snap freezing	**SNP**
Nonaldehyde without acetic acid	NAA
Neutral buffered formalin	NBF
Optimum cutting temperature medium	**OCT**
RNA Later	**RNL**
Unknown	XXX
Other	ZZZ

Type of collection	
Autopsy <6 h postmortem	A06
Autopsy 6-12 h postmortem	A12
Autopsy 12-24 h postmortem	A24
Autopsy 24-48 h postmortem	A48
Autopsy 48-72 h postmortem	A72
Biopsy	**BPS**
Fine needle aspirate	FNA
Punction	PUN
Surgical excision	SRG
Swab	**SWB**
Other	ZZZ

Warm ischemia time	
<2 min	A
2-10 min	B
10-20 min	C
20-30 min	D
30-60 min	E
>60 min	F
Unknown	X
Not applicable (e.g., biopsy)	N
Other	Z

Fixation time	
<15 min	A
15 min to 1 h	B
1-4 h	C
4-8 h	D
8-24 h	E
24-48 h	F
48-72 h	G
Unknown	X
Other	Z

Long-term storage		
PP tube 0.5-2 mL*	–85°C to –60°C	A
PP tube 0.5-2 mL	–35°C to –18)°C	B
Cryotube 1-2 mL	Liquid nitrogen†	C
Cryotube 1-2 mL	–85°C to –60°C	D
Cryotube 1-2 mL	Programmable freezing to <–135°C	E
Straw	Liquid nitrogen	F
Straw	–85°C to –60°C	G
Straw	–35°C to –18°C	H
Straw	Programmable freezing to <–135°C	I
PP tube ≥5 mL	–85°C to –60°C	J
PP tube ≥5 mL	–35°C to –18°C	K
Microplate	–85°C to –60°C	L
Microplate	–35°C to –18°C	M
Paraffin block	RT	P
Unknown		X
Other		Z

SPREC for a serum specimen

SER-SST-A-E-N-A-G

This corresponds to a serum (SER) specimen that has been collected from a serum collection tube (SST), whose precentrifugation delay is <2 hours at room temperature (A); centrifugation has been done at ambient temperature at 3,000 to 6,000 g with braking (E). Only one centrifugation step was done (N) and the delay between centrifugation and freezing was <1 hour at 3°C to 7°C (A). Serum was stored in straws at a temperature between −85°C and −60°C (G).

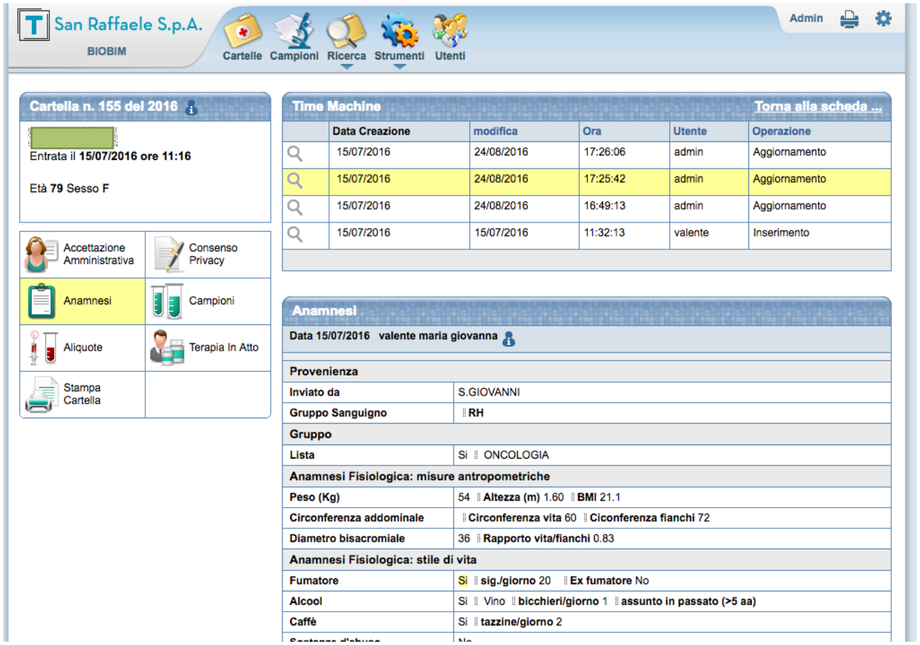
oloHEALTH-BioBank overview 1/3

Roles

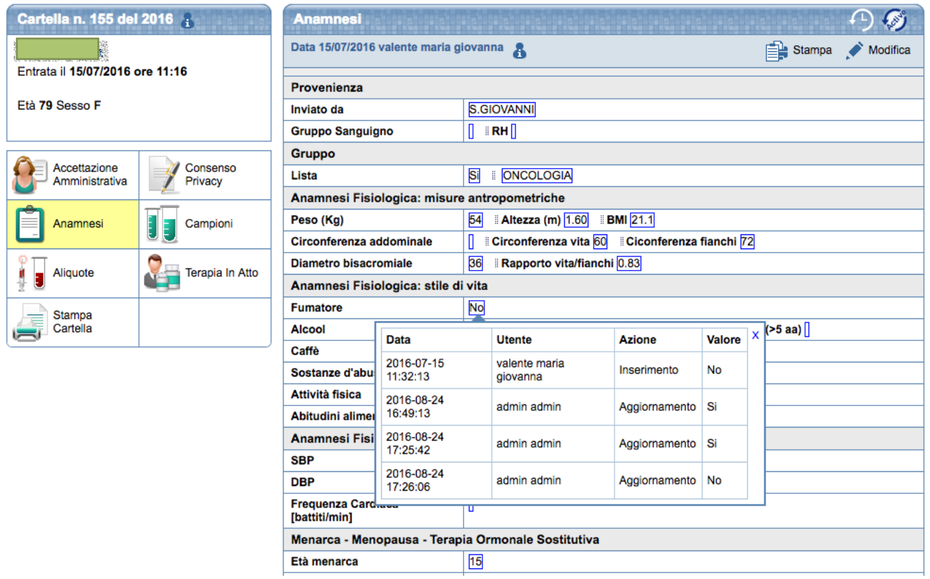
Time Machine

Configurator

Time Machine



Time Machine Express



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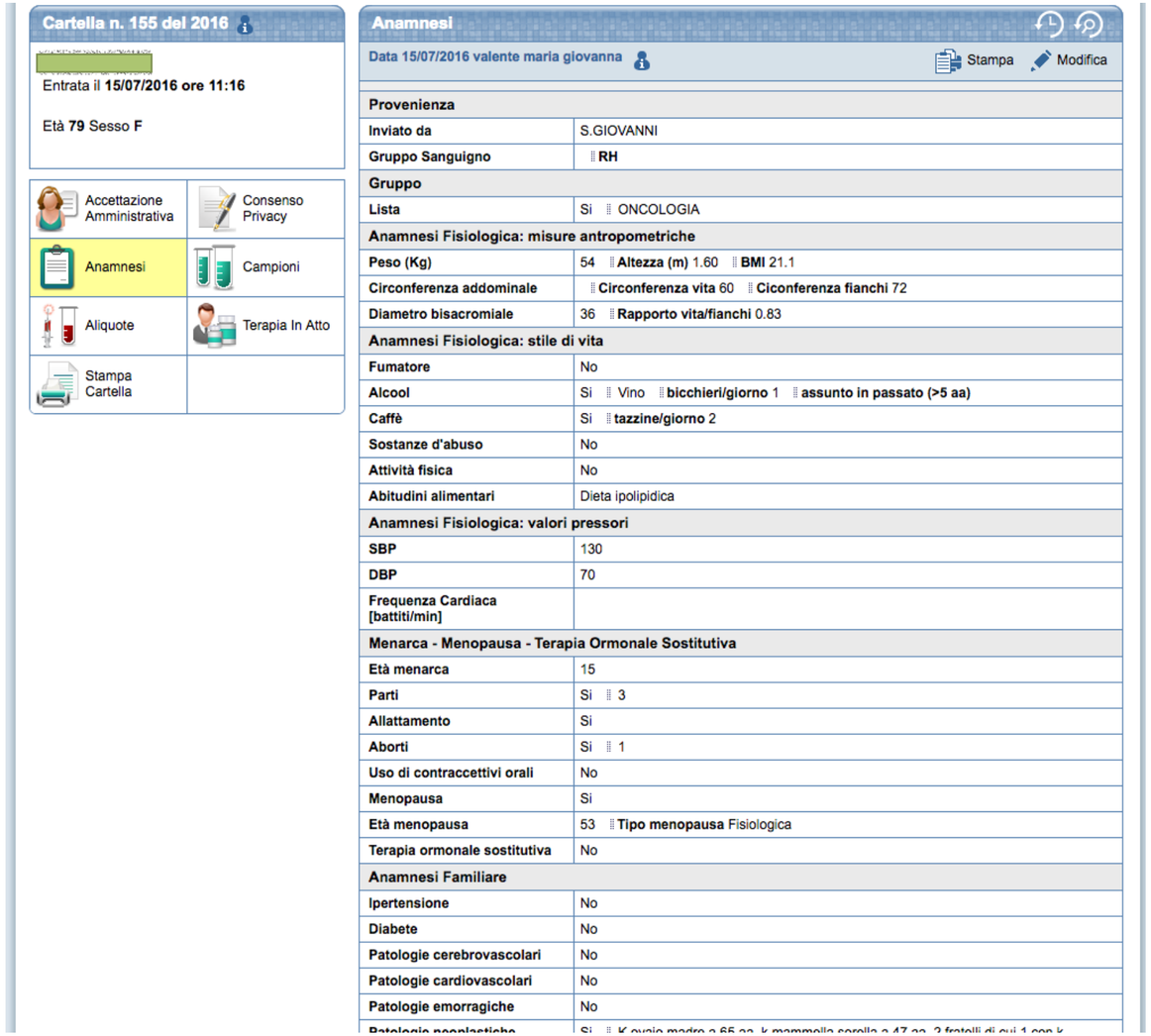

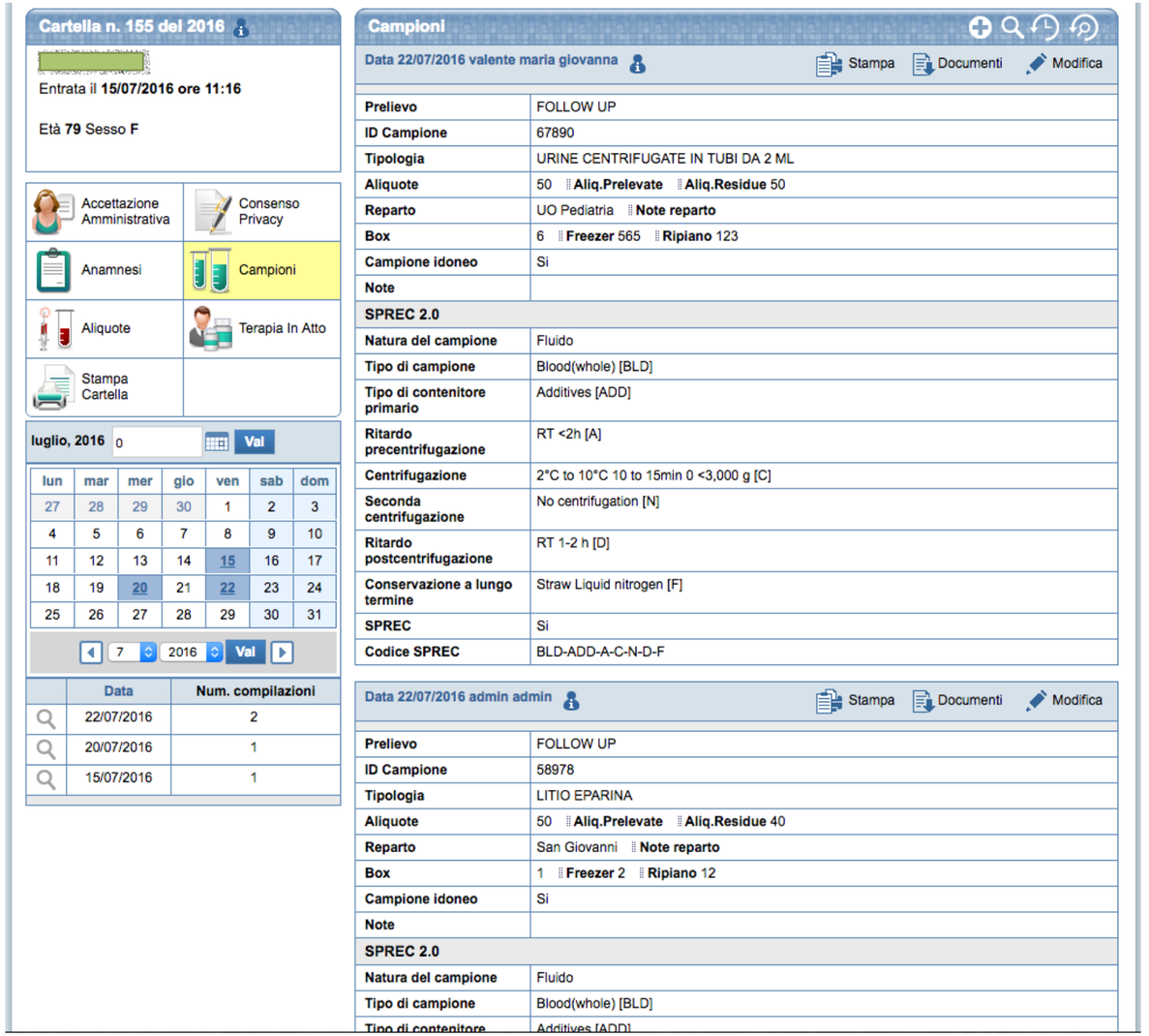

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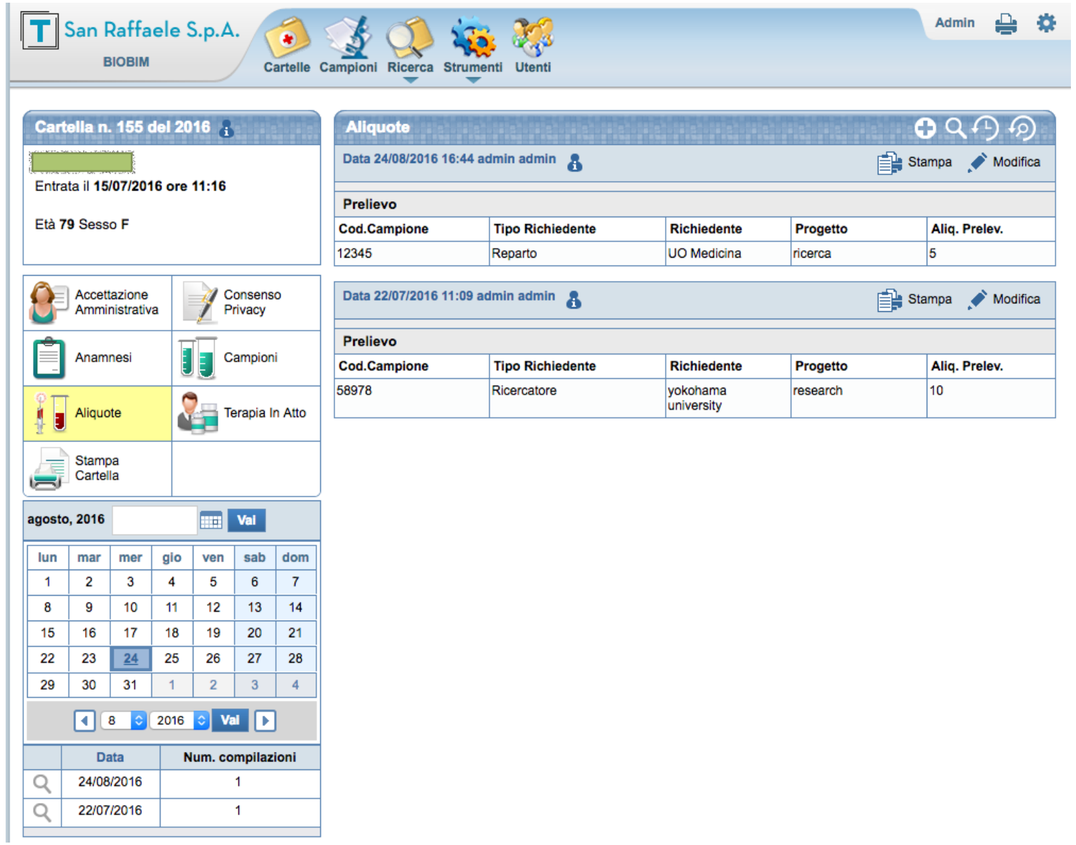

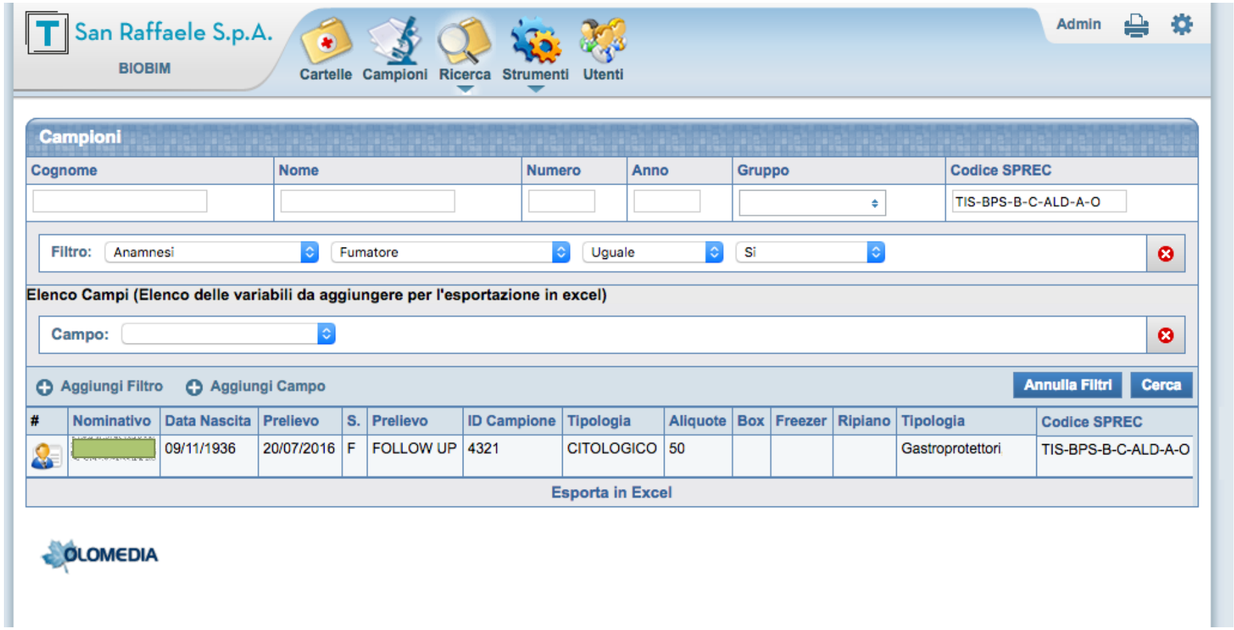

SPREC in oloHEALTH-BioBank

Data 15/07/2016 admin admin Stampa Documenti Modifica

Prelievo	1° PRELIEVO
ID Campione	12345
Tipologia	SANGUE IN TOTO
Aliquote	50 **Aliq.Prelevate** **Aliq.Residue** 50
Reparto	San Giovanni **Note reparto**
Box	**Freezer** **Ripiano**
Campione idoneo	Si
Note	
SPREC 2.0	
Natura del campione	Fluido
Tipo di campione	Blood(whole) [BLD]
Tipo di contenitore primario	Paxgene blood RNA+ [PAX]
Ritardo precentrifugazione	RT <2h [A]
Centrifugazione	RT 10 to 15min 0 <3,000 g [A]
Seconda centrifugazione	
Ritardo postcentrifugazione	
Conservazione a lungo termine	
SPREC	

Data 15/07/2016 admin admin Stampa

Prelievo	1° PRELIEVO
ID Campione	12345
Tipologia	SANGUE IN TOTO
Aliquote	50 **Aliq.Prelevate** **Aliq.Residue** 50
Reparto	San Giovanni **Note reparto**
Box	**Freezer** **Ripiano**
Campione idoneo	Si No
Note	
SPREC 2.0	
Natura del campione	Fluido Solido
Tipo di campione	Blood(whole) [BLD]
Tipo di contenitore primario	Paxgene blood RNA+ [PAX]
Ritardo precentrifugazione	RT <2h [A]
Centrifugazione	RT 10 to 15min 0 <3,000 g [A]
Seconda centrifugazione	
Ritardo postcentrifugazione	
Conservazione a lungo termine	
SPREC	
Codice SPREC	

Conferma Annulla

Thank You!!!

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