



Introducing SPREC in a software for Biobank



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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.



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.



Features of our software

USER FRIENDLY

WEB BASED

TOTALLY CONFIGURABLE



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

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	PII
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

San Raffaele S.p.A. BIOBIM

Cartelle Campioni Ricerca Strumenti Utenti

Cartella n. 155 del 2016

Entrata il 15/07/2016 ore 11:16

Età 79 Sesso F

Accettazione Amministrativa | Consenso Privacy

Anamnesi | Campioni

Aliquote | Terapia In Atto

Stampa Cartella

Data Creazione	modifica	Ora	Utente	Operazione
15/07/2016	24/08/2016	17:26:06	admin	Aggiornamento
15/07/2016	24/08/2016	17:25:42	admin	Aggiornamento
15/07/2016	24/08/2016	16:49:13	admin	Aggiornamento
15/07/2016	15/07/2016	11:32:13	valente	Inserimento

Anamnesi

Data 15/07/2016 valente maria giovanna

Provenienza

Inviato da S.GIOVANNI

Gruppo Sanguigno RH

Gruppo

Lista SI ONCOLOGIA

Anamnesi Fisiologica: misure antropometriche

Peso (Kg) 54 | Altezza (m) 1.60 | BMI 21.1

Circonferenza addominale | Circonferenza vita 60 | Ciconferenza fianchi 72

Diametro bisacromiale 36 | Rapporto vita/fianchi 0.83

Anamnesi Fisiologica: stile di vita

Fumatore Si sig./giorno 20 | Ex fumatore No

Alcool Si | Vino | bicchieri/giorno 1 | assunto in passato (>5 aa)

Caffè Si | tazzine/giorno 2

Time Machine Express

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Anamnesi

Data 15/07/2016 valente maria giovanna

Provenienza

Inviato da S.GIOVANNI

Gruppo Sanguigno RH

Gruppo

Lista SI ONCOLOGIA

Anamnesi Fisiologica: misure antropometriche

Peso (Kg) 54 | Altezza (m) 1.60 | BMI 21.1

Circonferenza addominale | Circonferenza vita 60 | Ciconferenza fianchi 72

Diametro bisacromiale 36 | Rapporto vita/fianchi 0.83

Anamnesi Fisiologica: stile di vita

Fumatore No

Data	Utente	Azione	Valore
2016-07-15 11:32:13	valente maria giovanna	Inserimento	No
2016-08-24 16:49:13	admin admin	Aggiornamento	Si
2016-08-24 17:25:42	admin admin	Aggiornamento	Si
2016-08-24 17:26:06	admin admin	Aggiornamento	No

Alcool

Caffè

Sostanze d'abu

Attività fisica

Abitudini allime

Anamnesi Fisi

SBP

DBP

Frequenza Card

[battiti/min]

Menarca - Menopausa - Terapia Ormonale Sostitutiva

Età menarca 15

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Entrata il 15/07/2016 ore 11:16

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Anamnesi | Campioni

Aliquote | Terapia In Atto

Stampa Cartella

Anamnesi

Data 15/07/2016 valente maria giovanna

Stampa | Modifica

Provenienza

Inviato da: S.GIOVANNI

Gruppo Sanguigno: RH

Gruppo

Lista: Si ONCOLOGIA

Anamnesi Fisiologica: misure antropometriche

Peso (Kg): 54 | Altezza (m): 1.60 | BMI: 21.1

Circonferenza addominale: Circonferenza vita 60 | Circonferenza fianchi 72

Diametro bisacromiale: 36 | Rapporto vita/fianchi 0.83

Anamnesi Fisiologica: stile di vita

Fumatore: No

Alcool: Si | Vino | bicchieri/giorno 1 | assunto in passato (>5 aa)

Caffè: Si | tazzine/giorno 2

Sostanze d'abuso: No

Attività fisica: No

Abitudini alimentari: Dieta ipolipidica

Anamnesi Fisiologica: valori pressori

SBP: 130

DBP: 70

Frequenza Cardiaca [battiti/min]:

Menarca - Menopausa - Terapia Ormonale Sostitutiva

Età menarca: 15

Parti: Si | 3

Allattamento: Si

Aborti: Si | 1

Uso di contraccettivi orali: No

Menopausa: Si

Età menopausa: 53 | Tipo menopausa Fisiologica

Terapia ormonale sostitutiva: No

Anamnesi Familiare

Ipertensione: No

Diabete: No

Patologie cerebrovascolari: No

Patologie cardiovascolari: No

Patologie emorragiche: No

Patologie neoplastiche: Si | K oucio madre a 65 aa | m mammella destra a 47 aa | 2 fratelli di cui 1 con k

Cartella n. 155 del 2016

Entrata il 15/07/2016 ore 11:16

Età 79 Sesso F

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Anamnesi | Campioni

Aliquote | Terapia In Atto

Stampa Cartella

luglio, 2016

lun	mar	mer	gio	ven	sab	dom
27	28	29	30	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

7 | 2016 | Val

Data	Num. compilazioni
22/07/2016	2
20/07/2016	1
15/07/2016	1

Campioni

Data 22/07/2016 valente maria giovanna

Stampa | Documenti | Modifica

Prelievo	FOLLOW UP
ID Campione	67890
Tipologia	URINE CENTRIFUGATE IN TUBI DA 2 ML
Aliquote	50 Aliq.Prelevate Aliq.Residue 50
Reparto	UO Pediatria Note reparto
Box	6 Freezer 565 Ripiano 123
Campione idoneo	Si
Note	
SPREC 2.0	
Natura del campione	Fluido
Tipo di campione	Blood(whole) [BLD]
Tipo di contenitore primario	Additives [ADD]
Ritardo precentrifugazione	RT <2h [A]
Centrifugazione	2°C to 10°C 10 to 15min 0 <3,000 g [C]
Seconda centrifugazione	No centrifugation [N]
Ritardo postcentrifugazione	RT 1-2 h [D]
Conservazione a lungo termine	Straw Liquid nitrogen [F]
SPREC	Si
Codice SPREC	BLD-ADD-A-C-N-D-F

Data 22/07/2016 admin admin

Stampa | Documenti | Modifica

Prelievo	FOLLOW UP
ID Campione	58978
Tipologia	LITIO EPARINA
Aliquote	50 Aliq.Prelevate Aliq.Residue 40
Reparto	San Giovanni Note reparto
Box	1 Freezer 2 Ripiano 12
Campione idoneo	Si
Note	
SPREC 2.0	
Natura del campione	Fluido
Tipo di campione	Blood(whole) [BLD]
Tipo di contenitore	Additives [ADD]

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Admin

Cartella n. 155 del 2016

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Anamnesi

Campioni

Allquote

Terapia In Atto

Stampa Cartella

agosto, 2016

lun	mar	mer	gio	ven	sab	dom
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	1	2	3	4

8 2016

Data	Num. compilazioni
24/08/2016	1
22/07/2016	1

Allquote

Data 24/08/2016 16:44 admin admin

Stampa Modifica

Prelievo

Cod.Campione	Tipo Richiedente	Richiedente	Progetto	Aliq. Prelev.
12345	Reparto	UO Medicina	ricerca	5

Data 22/07/2016 11:09 admin admin

Stampa Modifica

Prelievo

Cod.Campione	Tipo Richiedente	Richiedente	Progetto	Aliq. Prelev.
58978	Ricercatore	yokohama university	research	10

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Campioni

Cognome	Nome	Numero	Anno	Gruppo	Codice SPREC
					TIS-BPS-B-C-ALD-A-O

Filtro: Anamnesi Fumatore Uguale Si

Elenco Campi (Elenco delle variabili da aggiungere per l'esportazione in excel)

Campo:

Aggiungi Filtro Aggiungi Campo

Annulla Filtri Cerca

#	Nominativo	Data Nascita	Prelievo	S.	Prelievo	ID Campione	Tipologia	Allquote	Box	Freezer	Ripiano	Tipologia	Codice SPREC
		09/11/1936	20/07/2016	F	FOLLOW UP	4321	CITOLOGICO	50				Gastroprotettori	TIS-BPS-B-C-ALD-A-O

Esporta in Excel

OLOMEDIA

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 <input type="text"/>
Box	<input type="text"/> Freezer <input type="text"/> Ripiano <input type="text"/>
Campione idoneo	<input checked="" type="radio"/> Si <input type="radio"/> No
Note	<input type="text"/>
SPREC 2.0	
Natura del campione	<input checked="" type="radio"/> Fluido <input type="radio"/> 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	<input type="text"/>
Ritardo postcentrifugazione	<input type="text"/>
Conservazione a lungo termine	<input type="text"/>
SPREC	<input type="checkbox"/>
Codice SPREC	
<input type="button" value="Conferma"/> <input type="button" value="Annulla"/>	



Thank You!!!



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