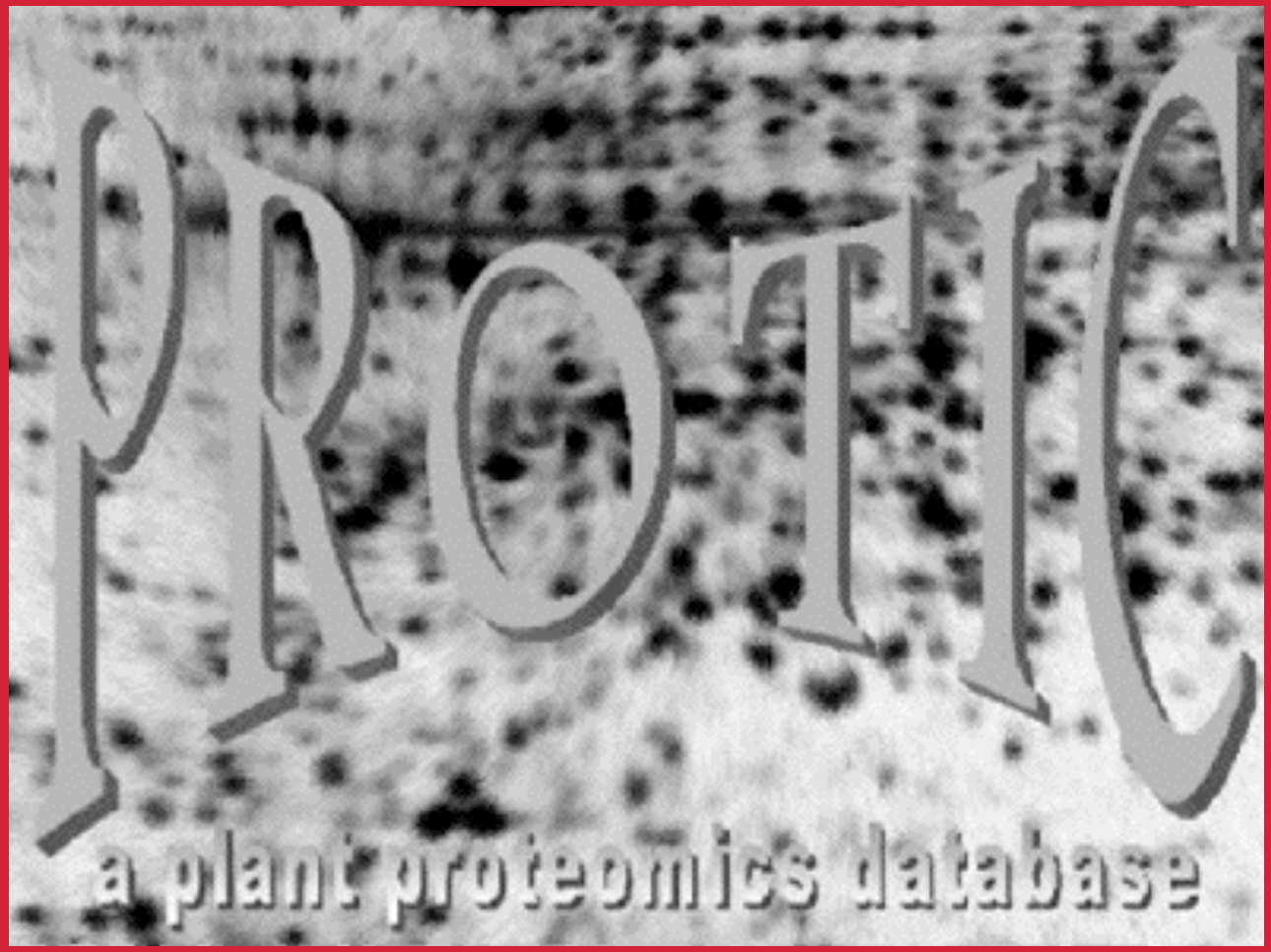
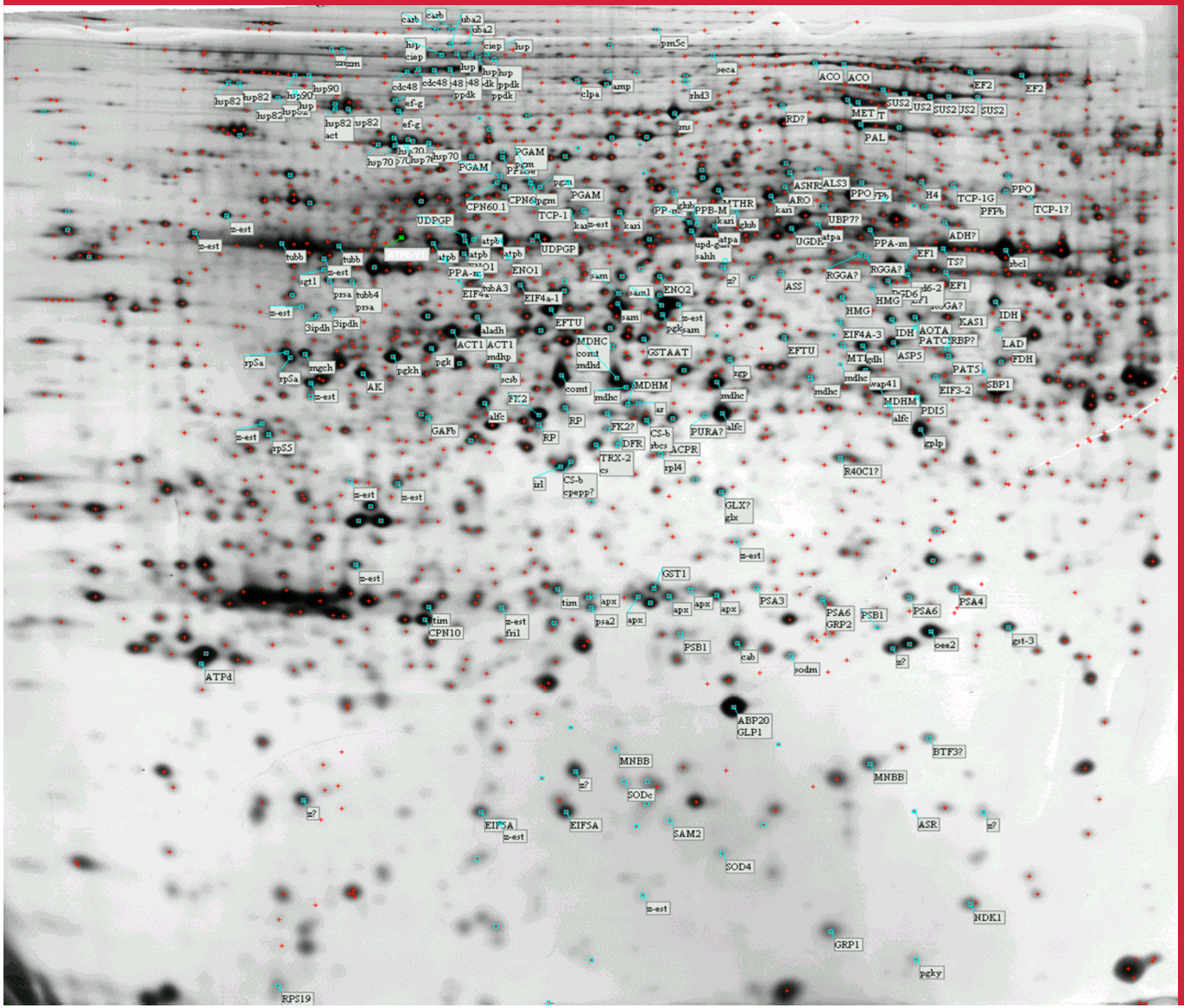
PROTICdb : a PROteomIC database



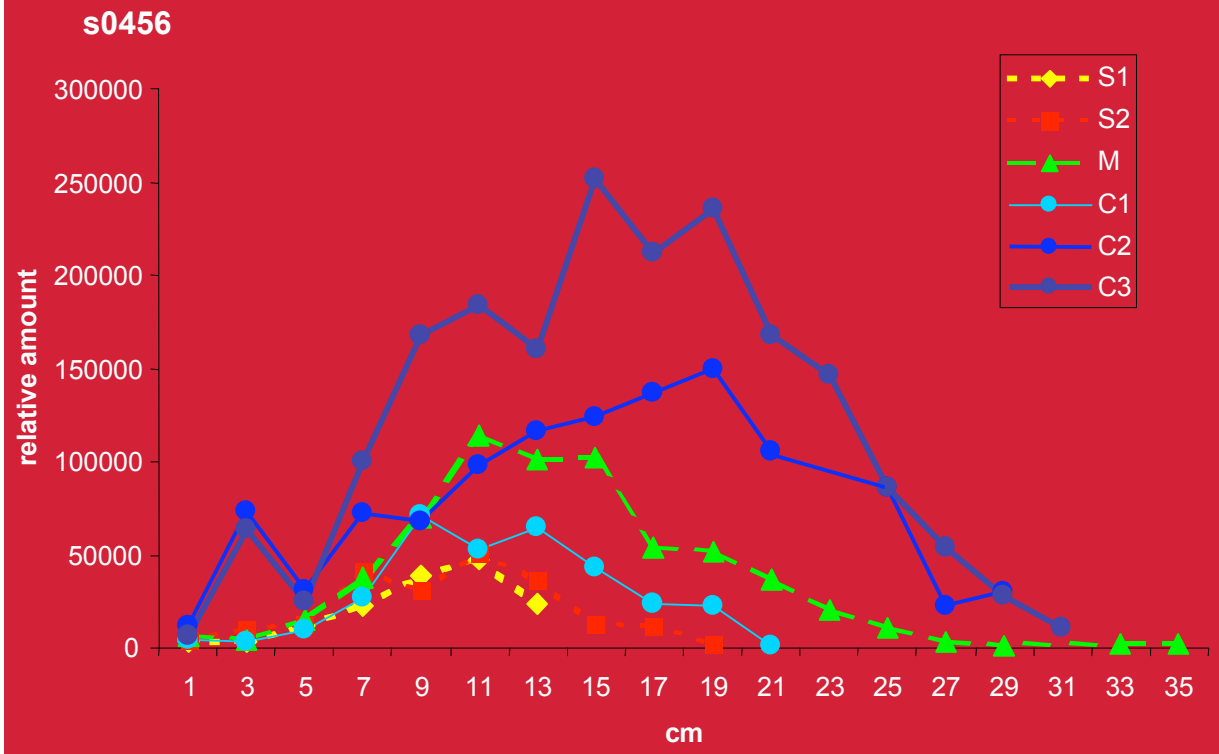
Some proteomic results on maize leaves



Protein identification

720 MS analyses
80% identifications

Some proteomic results on maize leaves



Drought stress
- Control
- Mild deficit
- Strong deficit

Several stages
- growing leaves
- mature leaves

Different leaf areas
- elongation zone
- differentiation zone

Different projects

On differents targets:

- drought
- kernel filling
- ploidy,
- wood formation

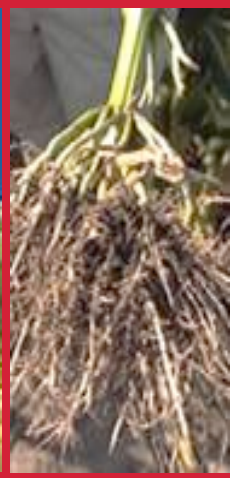
2n
4n

On differents species:

- Maize
- Rape, Cabbage
- Arabidopsis
- Pine

On differents organs:

- leaves
- seeds
- roots
- stem (wood)



Objectives

Highly heterogeneous to store in an organized way and to manage in order to extract information.

The objectives are :

1- Data storing, management, visualization and mining

2- Data export to analysis software

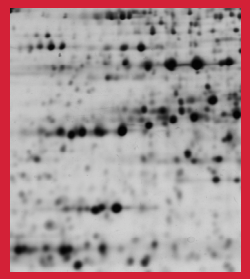
3- Knowledge management

4- Web publication

Experimental data flow

plant harvesting

protein extraction



2D-gel

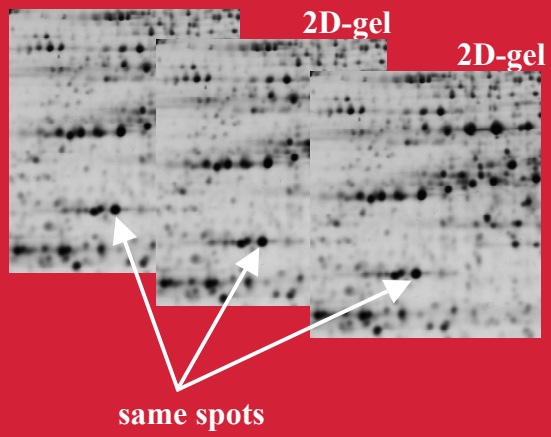
image analysis

identification

no hit

cross-analysis of data

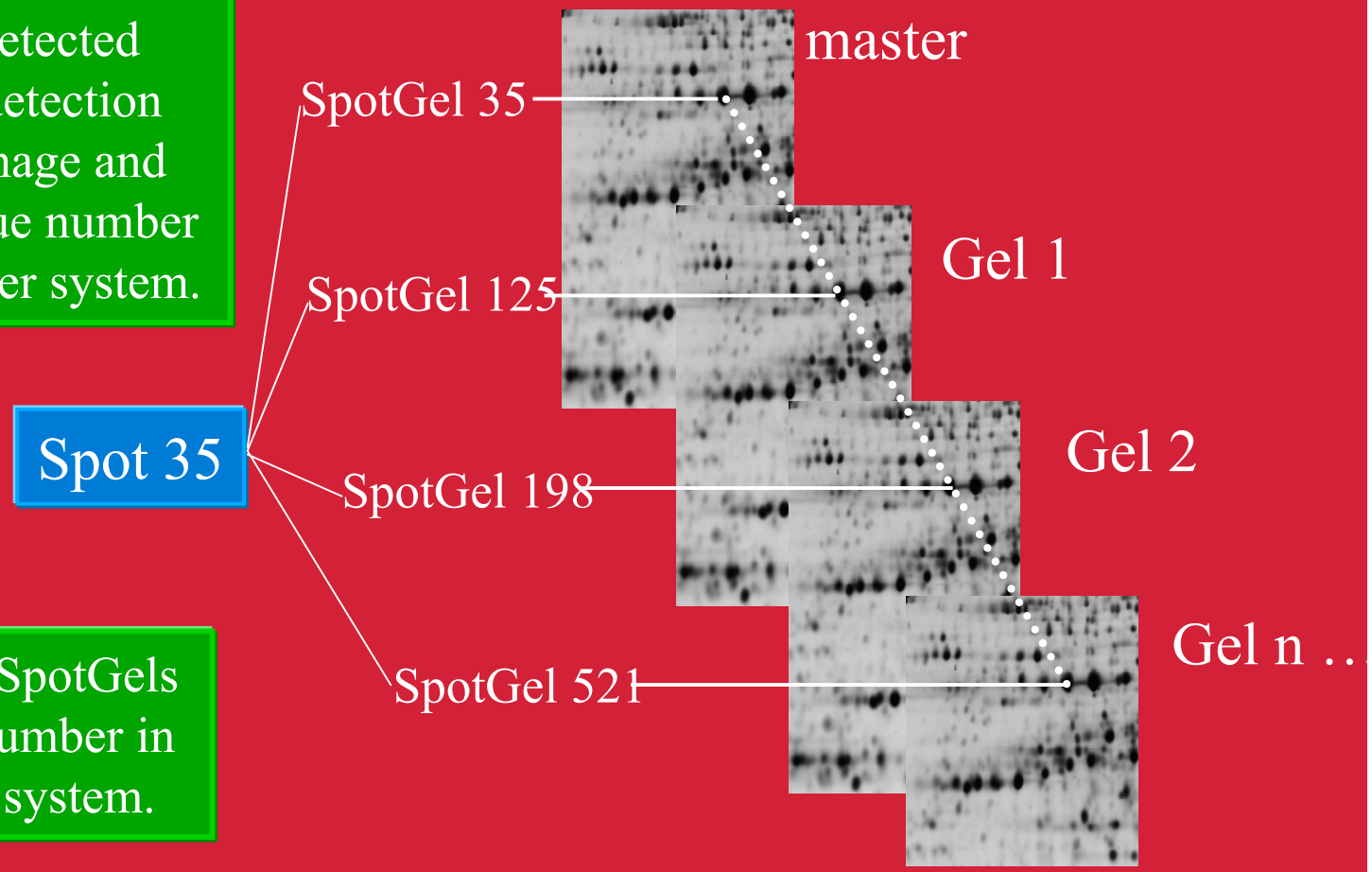
data analysis and biological inference



Data structuring

SpotGel : spot detected with a specific detection method on an image and bearing an unique number in a given number system.

Spot : group of SpotGels with the same number in a given number system.



Data structuring

same spot

post-tranlastional mdf.

phosphorylation

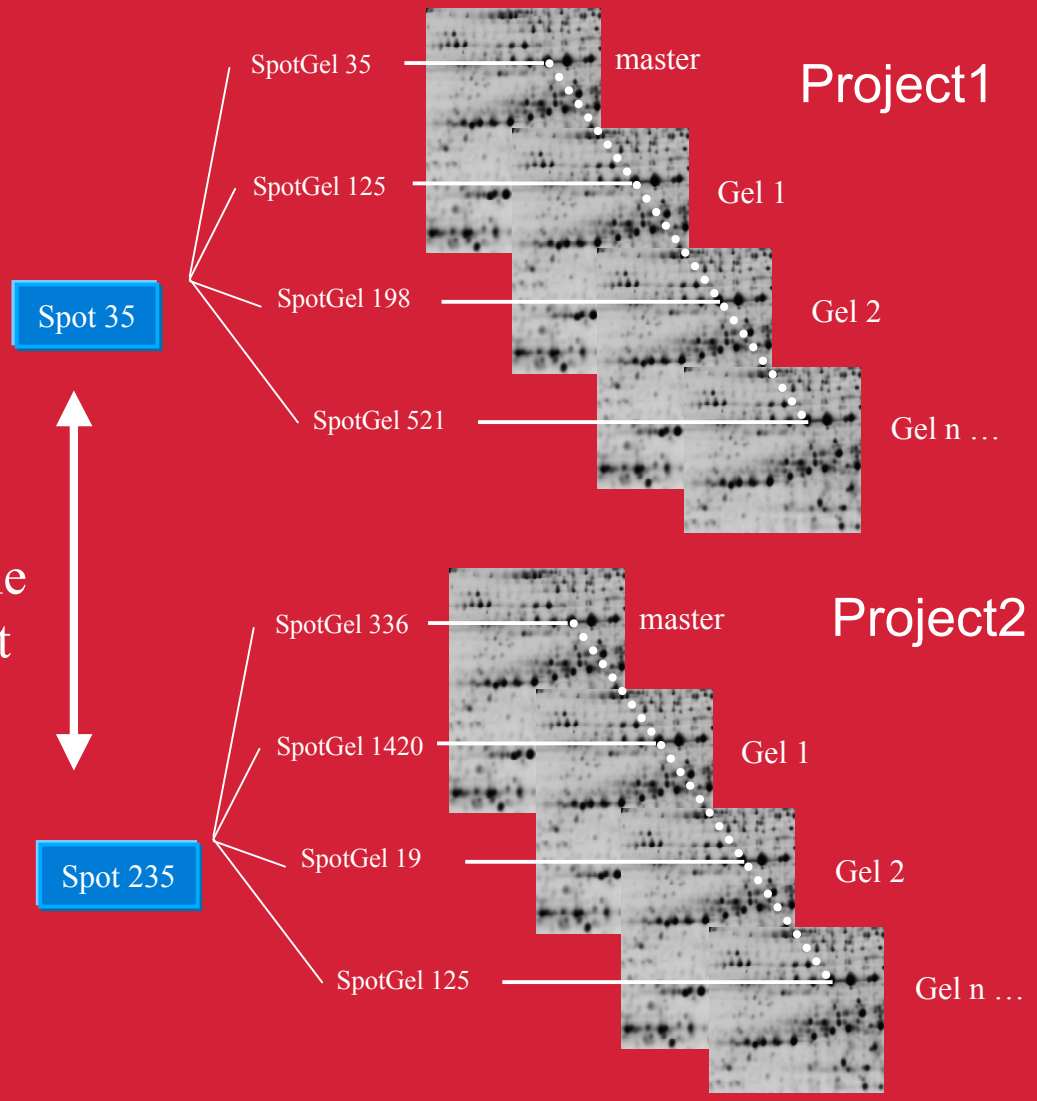
glycosylation

other post. mdf.

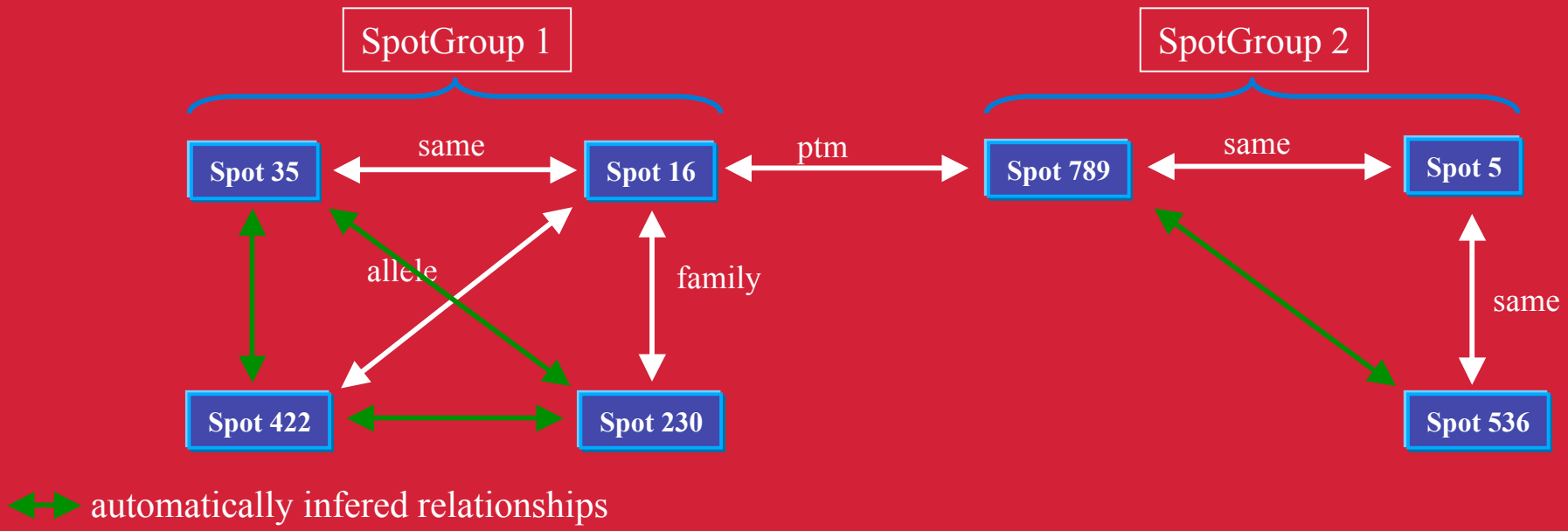
allelic form

isoform

multigenic family



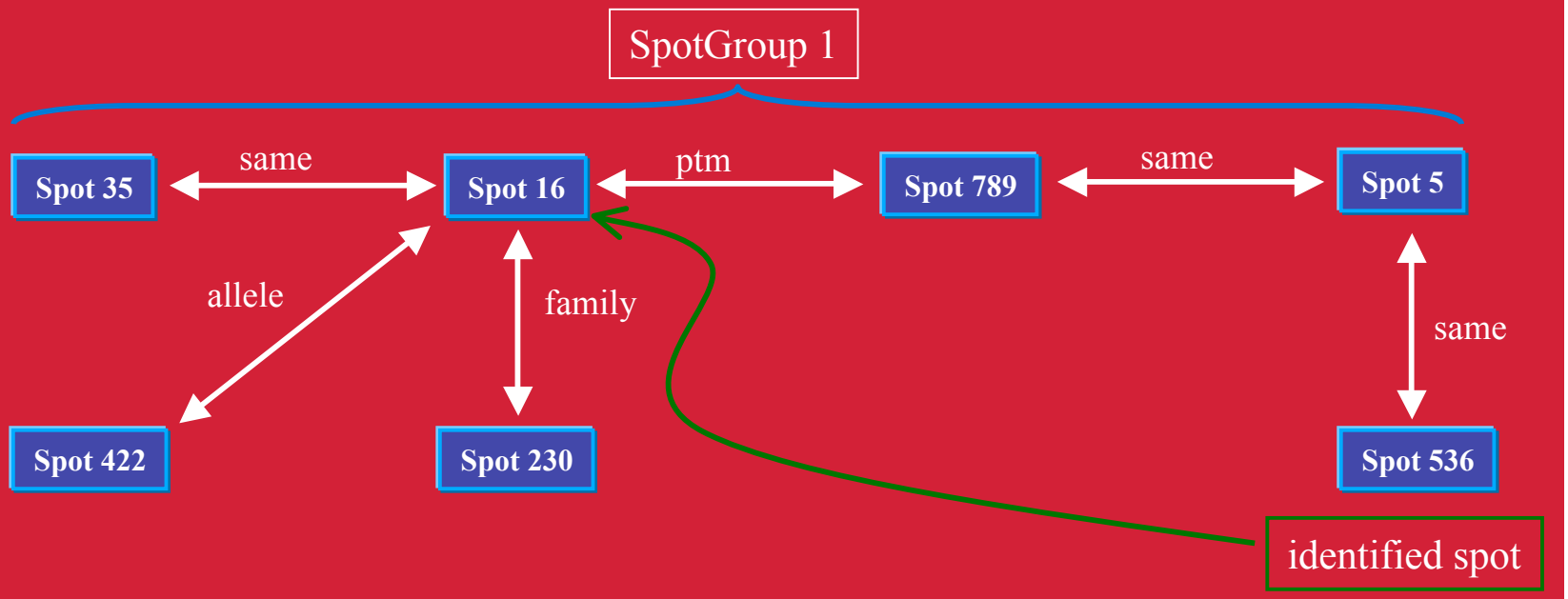
Data structuring



The relationships are evidenced by the users.

The SpotGroups are created by the database.

Data structuring



The SpotGroups are up-dated by the database.

The information is spread from one spot to another.

User: THIERRY
Project: PLANT RESPONSE TO DROUGHT

- Logout
- Help
- Project selector
- Administration
- Controlled vocabulary
- Methods
- Gel browser
- Form based feeding
- File based feeding
- Credits

PROTICdb homepage

Plant | Plant sample | Protein sample | Gel | Gel image

Plant sample update
plant sample : L073T update

Plant sample update

Sample name* L073T

Plant
plant (population/number): POPD/073 T new/update

Harvesting stage
plant stage: FLOWERING new/update
organ : EAR LEAF new/update
rank definition: — new/update
rank number:
date: 31 JULY 2003

Data status
public ○ private ●

Comment

User: THIERRY
Project: PLANT RESPONSE TO DROUGHT

- Logout
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- File based feeding
- Credits

New sample organ reference

Plant | Plant sample | Protein sample | Gel | Gel image

numerisation calibration | concentration unit | picture format | quantity unit
protein sample quality | harvesting stage | rank definition | sample organ
tissue | scanner name | detection software | scanner software
subcellular compartment | genotype | plant test | spot numerotation system

- 6TH LEAF
- 8TH LEAF
- ADULT LEAF
- ADULT STEM
- EAR LEAF
- GRAIN
- create a new reference for sample organ

Create a reference for sample organ

sample organ reference name :

Submit

PROTICdb homepage

plant2image (csv file) | virtual spot detection (update) | spot detection (new/update)

MS identification request (in) | MS identification request (out) | identification results

User: THIERRY
Project: PLANT RESPONSE TO DROUGHT

- Logout
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- File based feeding
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Plant to image file upload

here is the excel template file

Choose your experiment : CHOU RC HAPLOIDE, DIPLOIDE ET TETRAPLOIDE — new/update

Select your file : Parcourir...

Submit

Gel image file upload

image file format —

Select your gel image file : Parcourir...

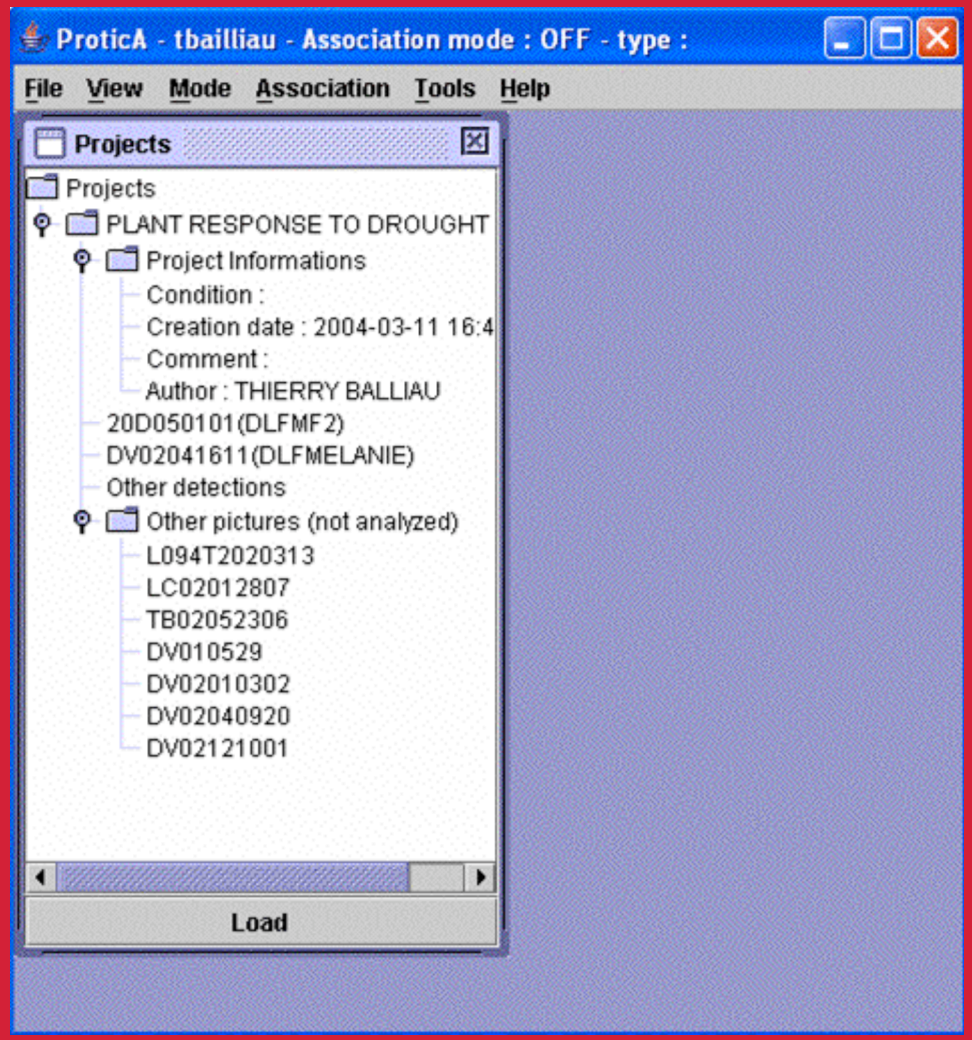
Submit

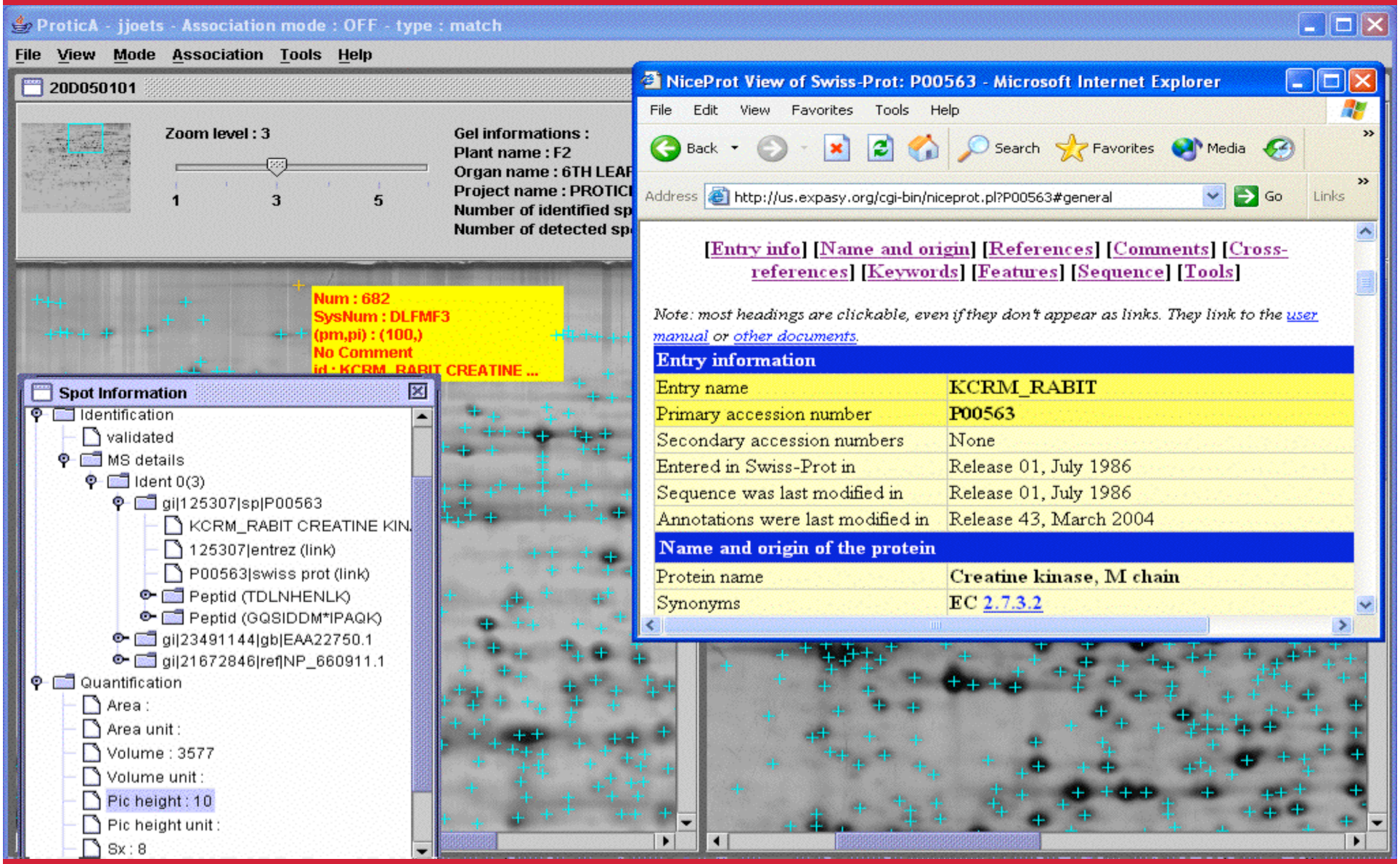
LE MOULON Génétique végétale UMR

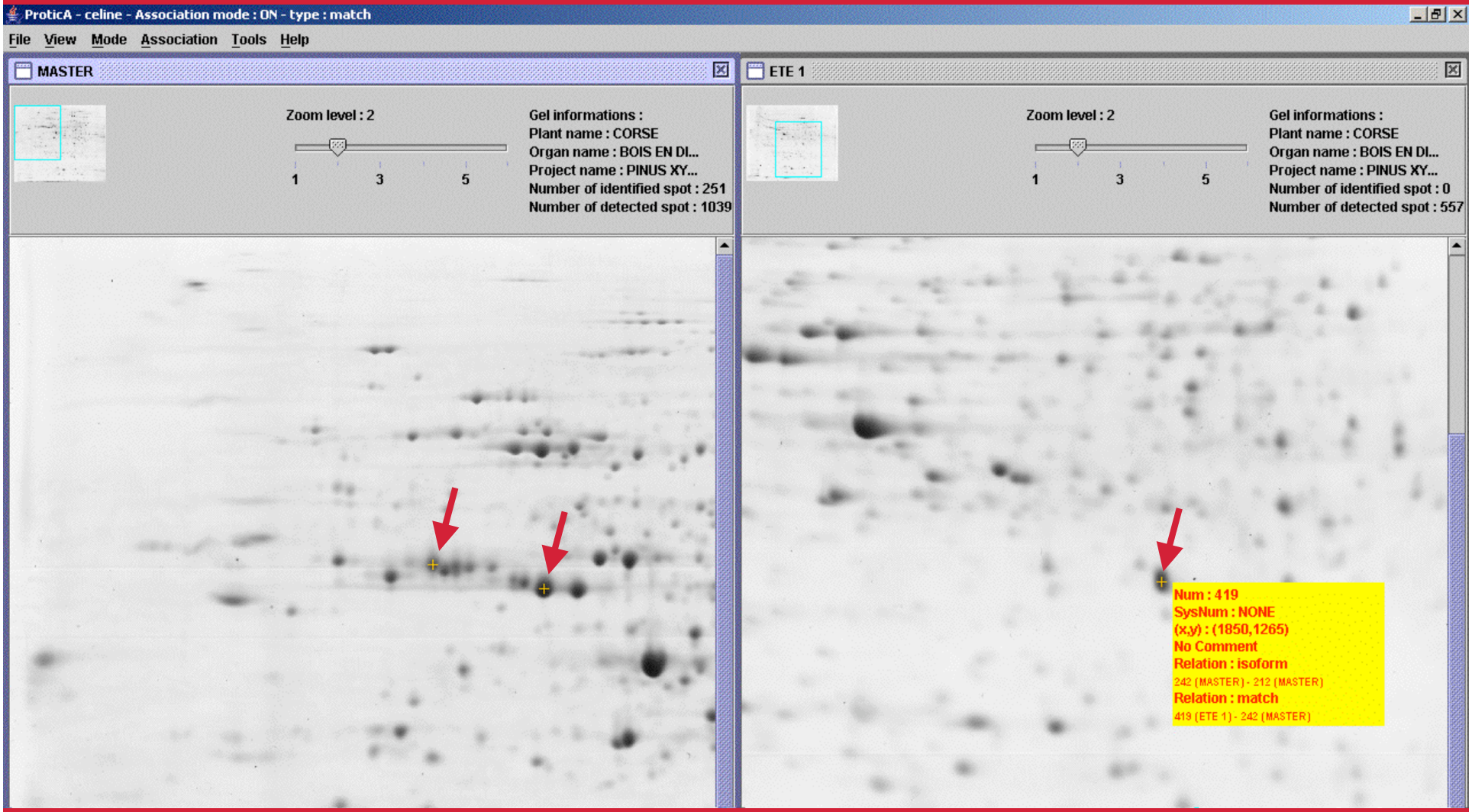
	AN	AO	AP	AQ	AR	AS	AT	AU	AV	AW	AX	AY	AZ	BA	BB	BC	BD
1	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	
2	biological sample harvesting								plant description								
3	harvesting name *	is private ? *	harvesting date	plant stage at harvesting *	organ *	rank number	rank number definition	comment	Plant name (must be unique within an experiment)*	population (N.R. if not included in a population)*	is private ? *	genus *	species *	genotype (N.A if unknown)*	test (N.R. if not relevant)*	sowing date	cultivation place *
4	200 char. Max	y/n	DD-MON-YY 05-jan-01 03-apr-01	Must be described in the controlled vocabulary	Must be described in the controlled		Must be described in the controlled vocabulary first	4000 char. Max.	255 char. Max	Must be described in the database first	y/n	as known in the NCBI taxonomy (Zea)	as known in the NCBI taxonomy (mays)	Must be described in the controlled vocabulary	Must be described in the controlled vocabulary	DD-MON-YY 05-jan-01 03-apr-01	Must be described in the database
5																	
6																	

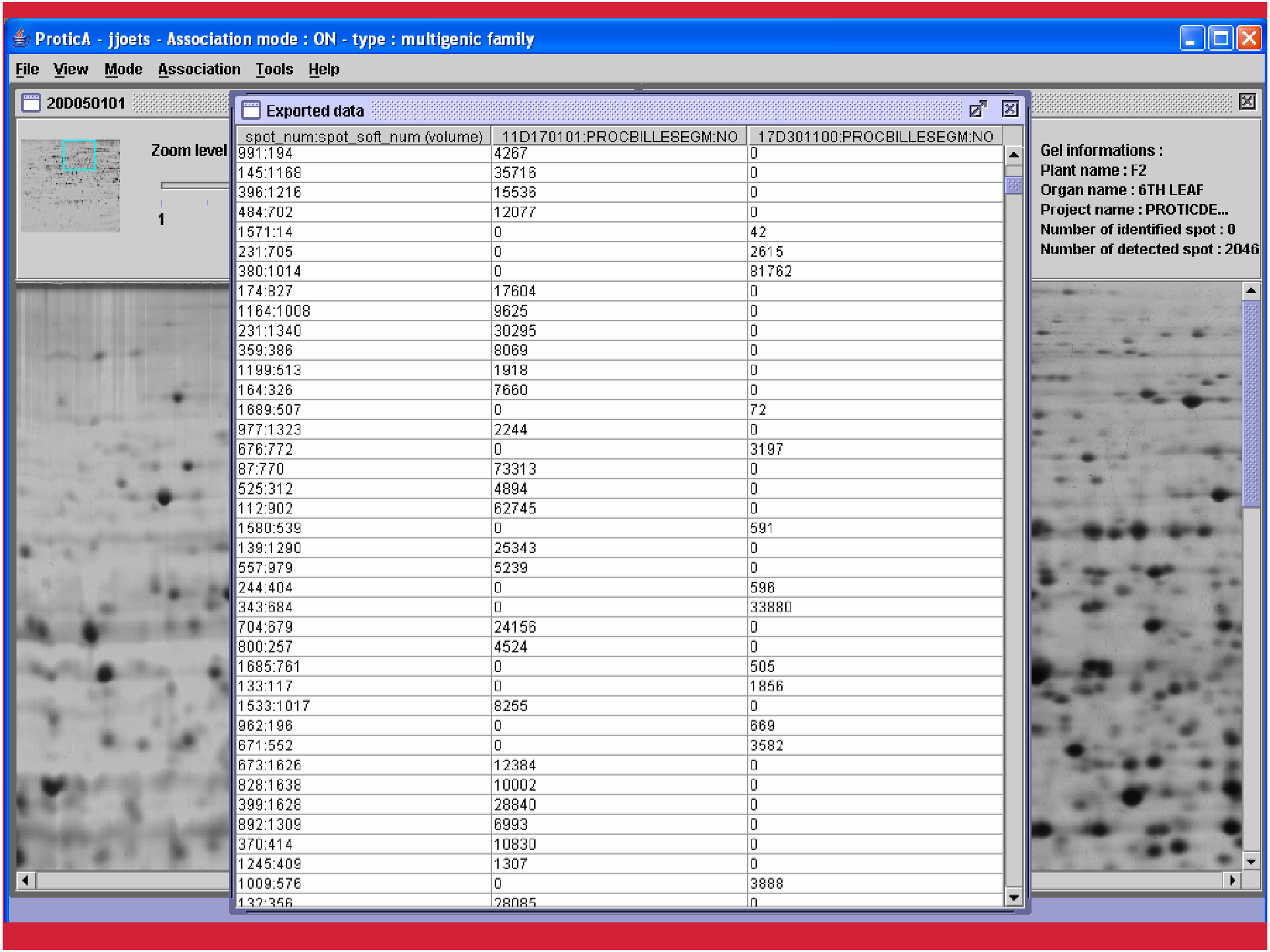
	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	
1	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	
2		protein extract preparation and gel loading																
3	comment	extract number *	extract name *	is private ? *	description	extract preparation date	tissue *	sub-cellular component *	protein extraction method *	extract quality*	protein concentration	concentration unit	initial quantity	available quantity	quantity unit	loaded quantity *	loaded quantity unit *	comment
4	4000 char. Max.	> 1 if co-migrating	200 char. Max	y/n	4000 char.	DD-MON-YY 05-jan-01 03-apr-01	must be described in the controlled vocabulary first	must be described in the controlled vocabulary first	must be described in the database first	must be described in the controlled vocabulary first		must be described in the controlled vocabulary first			must be described in the controlled		must be described in the controlled vocabulary first	4000 char.
5																		
6																		

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
1	0	1	2	3	4	5	6	7	8	9	10	11	12	13	
2	image														
3	Gel image name *	is private ? *	image file format *	numerisation software name *	scanner name (hardware)*	numerisation calibration method name*	numerisation calibration settings	CD archive name	CD pathway of the image file	file pathway on the lab computer	comment	gel name (may be the image name) *	is private ? *	I.E.F. Date	I
4	suggested format : XXYYMMDD00 (YYMMDD : date, XX initials, 00 gel number) space and special characters are not allowed	y/n	Must be described in the controlled vocabulary first.	Must be described in the controlled vocabulary first.	Must be described in the controlled vocabulary first.	Must be described in the database first (N.R if unknown).		200 char. max	200 char. max	200 char. max	4000 char. Max.	200 char. max	y/n	DD-MON-YY 05-jan-01 03-apr-01	m d d
5															


ProticA - tbailliau - Association mode : OFF - type :
File View Mode Association Tools Help
Projects
Projects
PLANT RESPONSE TO DROUGHT
Project Informations
Condition :
Creation date : 2004-03-11 16:4
Comment :
Author : THIERRY BALLIAU
20D050101(DLFMF2)
DV02041611(DLFMELANIE)
Other detections
Other pictures (not analyzed)
L094T2020313
LC02012807
TB02052306
DV010529
DV02010302
DV02040920
DV02121001
Load


ProticA - jjoets - Association mode : OFF - type : match
File View Mode Association Tools Help
20D050101
Zoom level : 3
1 3 5
Gel informations :
Plant name : F2
Organ name : 6TH LEAF
Project name : PROTICL
Number of identified sp
Number of detected sp
Num : 682
SysNum : DLFMF3
(pm,pi) : (100,)
No Comment
id : KCRM_RABIT CREATINE ...
Spot Information
Identification
validated
MS details
Ident 0(3)
gi|125307|sp|P00563
KCRM_RABIT CREATINE KIN
125307|entrez (link)
P00563|swiss prot (link)
Peptid (TDLNHENLK)
Peptid (GQSIDDM*IPAQK)
gi|23491144|gb|EAA22750.1
gi|21672846|ref|NP_660911.1
Quantification
Area :
Area unit :
Volume : 3577
Volume unit :
Pic height : 10
Pic height unit :
Sx : 8
NiceProt View of Swiss-Prot: P00563 - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites Media
Address http://us.expasy.org/cgi-bin/niceprot.pl?P00563#general
Go Links
[Entry info] [Name and origin] [References] [Comments] [Cross-references] [Keywords] [Features] [Sequence] [Tools]
Note: most headings are clickable, even if they don't appear as links. They link to the user manual or other documents.
Entry information
Entry name KCRM_RABIT
Primary accession number P00563
Secondary accession numbers None
Entered in Swiss-Prot in Release 01, July 1986
Sequence was last modified in Release 01, July 1986
Annotations were last modified in Release 43, March 2004
Name and origin of the protein
Protein name Creatine kinase, M chain
Synonyms EC 2.7.3.2


ProticA - celine - Association mode : ON - type : match
File View Mode Association Tools Help
MASTER
Zoom level : 2
1 3 5
Gel informations :
Plant name : CORSE
Organ name : BOIS EN DI...
Project name : PINUS XY...
Number of identified spot : 251
Number of detected spot : 1039
ETE 1
Zoom level : 2
1 3 5
Gel informations :
Plant name : CORSE
Organ name : BOIS EN DI...
Project name : PINUS XY...
Number of identified spot : 0
Number of detected spot : 557
Num : 419
SysNum : NONE
(x,y) : (1850,1265)
No Comment
Relation : isoform
242 (MASTER) - 212 (MASTER)
Relation : match
419 (ETE 1) - 242 (MASTER)



spot_num:spot_soft_num (volume)	11D170101:PROCBILLESEGM:NO	17D301100:PROCBILLESEGM:NO
991:194	4267	0
145:1168	35716	0
396:1216	15538	0
484:702	12077	0
1571:14	0	42
231:705	0	2615
380:1014	0	81762
174:827	17604	0
1164:1008	9625	0
231:1340	30295	0
359:386	8069	0
1199:513	1918	0
164:326	7660	0
1689:507	0	72
977:1323	2244	0
676:772	0	3197
87:770	73313	0
525:312	4894	0
112:902	62745	0
1580:539	0	591
139:1290	25343	0
557:979	5239	0
244:404	0	596
343:684	0	33880
704:679	24156	0
800:257	4524	0
1685:761	0	505
133:117	0	1856
1533:1017	8255	0
962:196	0	669
671:552	0	3582
673:1626	12384	0
828:1638	10002	0
399:1628	28840	0
892:1309	6993	0
370:414	10830	0
1245:409	1307	0
1009:576	0	3888
132:356	28085	0

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