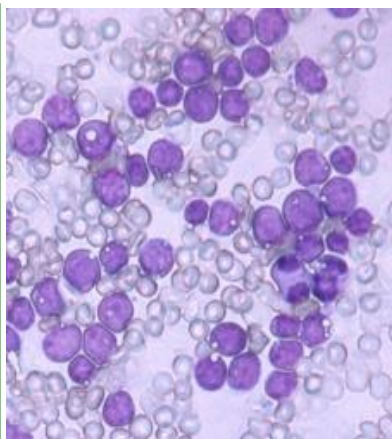


PROMETHEUS



PROMETHEUS

Software for Stem Cells Donor Registries



Internal Donor Search for Belgian Patients

Mechelen, Belgium
February 2013



Steiner Ltd.
www.steiner.cz
www.steinersw.eu
www.hlasoft.com
david@steiner.cz
Prague
Czech Republic

PROMETHEUS

Contents

- Search algorithms
- Internal search
- Search parameters
- Patient selection
- Search results
- Search reports



PROMETHEUS

Search Algorithm in Prometheus

- **DNA search algorithm** (serology is not needed)
- **Comparable with NMDP and ZKRD search algorithms**
- **Parameters: age, MM on locus, Max AB, ABDR typed donors and CBU's, etc.**



PROMETHEUS

Internal Search tool

- Is accessible through the “Search” menu option.

Or

- Switch over to the “Local Search” work panel using the panel button

Or

- Directly from the patient record, opening the panel with the Patient in question



Prometheus - Stem Cell Donor Registry

File Donor Patient Search EMDIS Service Help

Select donor

New search for selected patient

New search for patients in stack

New patient

D :

T : BETRAANS1

☐ allow all DCs☐ allow all TCs

Registry

Show search

Patient

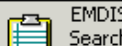
Active Patients

Local Search

Rq. w/o answ.

EMDIS - new

EMDIS - old



Patient Record

EMDIS messages [0]

Attached Files [2]

Patient Notes [A]

Patient BE60265P

Status

Name Peyerl Karel

DG AML

DG Date

Registry B

TX center BETRAANS1

Physician

DOB 14.04.1977

WEIGHT 105

ABO 0

Rh +

CMV Unknown

A*01:01
01:02B*08:02
44:02

C*05:01

DRB1*12:01
03:01

DQB1*02:01

DRB3*

DRB4*

DRB5*

Record changed on 09.02.2013 at 19:41 by Peyerl Karel

Record inserted on 09.02.2013 at 17:52 by Peyerl Karel

HLA/DNA to be validated

Medical data validated on 09.02.2013 at 17:53 by Peyerl Karel

Select	HUB
<input checked="" type="checkbox"/>	ALL
<input checked="" type="checkbox"/>	BE
<input checked="" type="checkbox"/>	AT
<input checked="" type="checkbox"/>	AU
<input checked="" type="checkbox"/>	SE
<input checked="" type="checkbox"/>	CH
<input checked="" type="checkbox"/>	CZ
<input checked="" type="checkbox"/>	DE
<input checked="" type="checkbox"/>	ES
<input checked="" type="checkbox"/>	FR
<input checked="" type="checkbox"/>	GB
<input checked="" type="checkbox"/>	IT
<input checked="" type="checkbox"/>	NL
<input checked="" type="checkbox"/>	NO
<input checked="" type="checkbox"/>	GL
<input checked="" type="checkbox"/>	WA
<input checked="" type="checkbox"/>	US
<input checked="" type="checkbox"/>	SX

PROMETHEUS

Internal Search Tool

The Panel is work flow orientated:

- New search →
- Select Patient →
- Adjust search criteria →
- Run Search →
- Report

Prometheus - Stem Cell Donor Registry

File Donor Patient Search EMDIS Service Help

Select donor Select patient New donor New patient D : T : BETRAANS1
☐ allow all DCs ☐ allow all TCs

Registry

Patient
 Active Patients
 Local Search
 Rq. w/o answ.
 EMDIS - new
 EMDIS - old

Local Search → → → → →

New Search Patients Search Options Run Search Sort Result Report Custom Report Save Search Open Search Full Screen

Search Options

Max. number of:	AB	ABDR	CB
- donors	40	40	100
- total antig. MM	1	1	0
- A antig. MM	1	1	1
- B antig. MM	1	1	1
- DR antig. MM		1	1






Patients Add View Del Up Down

Patient ID	Name	A	B	C	DRB1	DQB1
BE60265P	Peyerl Karel	01:01	01:02	08:02	44:02	05:01

PROMETHEUS

Selecting Patient

Local Search

 New Search
  Patients
  Search Options
  Run Search
  Sort Result

Search Options

Max. number of

- donors
- total antig.
- A antig. MM
- B antig. MM
- DR antig. MM

Selected patient
 Patients in stack
 Add another patient
 Clear patient list
 Save patient list to stack

Patients Add View

Patient ID	Name
BE60265P	Peyerl Karel

1 1 ▼

QMS

ISO 9001:08

ISMS

ISO 27001:05

taylorco.com taylorco.com

Steiner Ltd.

www.steiner.czwww.steinersw.euwww.hlasoft.com

david@steiner.cz

Prague

Czech Republic

PROMETHEUS

Select search criteria

Search Options OK Esc

	AB	ABDR	CB		
Max. number of donors	<input type="text" value="40"/>	<input type="text" value="40"/>	<input type="text" value="100"/>		
	HLA-A	HLA-B	HLA-DRB1	Total MD	Total CB
Max. antigen mismatches	<input type="text" value="1 MM"/>	<input type="text" value="1 MM"/>	<input type="text" value="1 MM"/>	<input type="text" value="1 MM"/>	<input type="text" value="none"/>
Max. allele mismatches	<input type="text" value="2 MM"/>	<input type="text" value="2 MM"/>	<input type="text" value="2 MM"/>	<input type="text" value="2 MM"/>	
Min. age of the donor	<input type="text" value="18"/>				
Max. age of the donor	<input type="text" value="60"/>				
(Preliminary) Request date	<input type="text" value="10.02.2013"/>			Search date	<input type="text" value="10.02.2013"/>
Comment					1:33 / 1:32
<input type="text" value="My comment saved with the search"/>					





✓ OK ✗ Cancel ? F1

1 / 1

PROMETHEUS

Summary of criteria

Local Search

 New Search
  Patients
  Search Options
  Run Search

Search Options

Max. number of:	AB	ABDR	CB
- donors	40	40	100
- total antig. MM	1	1	0
- A antig. MM	1	1	1
- B antig. MM	1	1	1
- DR antig. MM		1	1

Patients Add

Patient ID	Name
BE60265P	Peyerl

QMS

ISO 9001:08

ISMS

ISO 27001:05

tayllorcox.com tayllorcox.com

Steiner Ltd.

www.steiner.czwww.steinersw.euwww.hlasoft.com

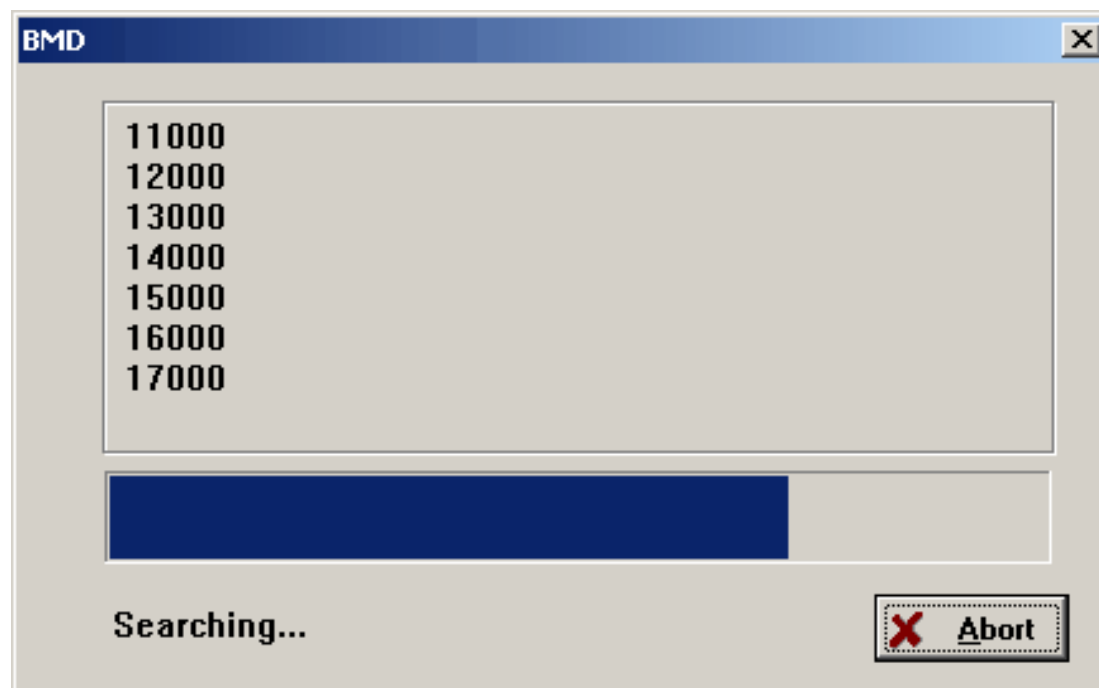
david@steiner.cz

Prague

Czech Republic

PROMETHEUS

Running the Search



Prometheus - Stem Cell Donor Registry

File Donor Patient Registry Search EMDIS Servis Help

Select donor Select patient New donor New patient

Test Database 29.12.2008 Steiner David Administrators Exit

Registry

Donor Patient Local Search EMDIS - new EMDIS - old Interfaces

Local Search 5

New Search Patients Search Options Run Search Sort Result Report Custom Report Save Search Open Search Full Screen

Search Options

Max. number of: AB ABDR CB

- donors 10 10 0
- total antig. MM 1 1 2
- A antig. MM 1 1 1
- B antig. MM 1 1 1
- DR antig. MM 1 1 1

Patients Add View Del Up Down

Patient ID	Name	A	B	C	DRB1	DQB1
FI2P	Kozlowski Thaddeus	0101	0201	0801	4402	0501 0701 0401 1103

Search Results Pat HLA Don HLA View Don

Drag a column header here

Donor ID	Type	Sex	DOB	Match grade	A.1 [0101]	A.2 [0201]	B.1 [0801]	B.2 [4402]	C.1 [0501]	C.2 [0701]	DR. [0401]
	D	F	1983	5/6 Antigen Match	1	2	61	44	5	2	4
	D	M	1986	5/6 Antigen Match	01XX	02XX	08CCWF	44XX			04AF
	D	F	1987	5/6 Antigen Match	01XX	02XX	08XX	44XX			04XX
	D	M	1981	5/6 Antigen Match	1	2	8	44			4
	D	F	1981	5/6 Antigen Match	1	2	8	44			4
	D	F	1980	3/4 AB Antigen Match	1	2	8	62	3	7	
	D	F	1981	3/4 AB Antigen Match	1	2	8	13			

Report Maker (Custom Report)

Insert Donor Remove Donor Clear List

Donor ID Patient ID

Change order

Double click
Right click

Ctrl, Shift
Drag and drop

PROMETHEUS

Search Results

- Evaluate search results in context of search parameters
- This is interactive tool, not sheet of paper
- If you are not happy with search results, change search parameters and perform search again



Local Search 141

New Search
 Patients
 Search Options
 Run Search
 Sort Result
 Report
 Custom Report
 Save Search
 Open Search
 Full Screen

Search Options

Patients

Add

View

Del

Up

Down

Max. number of:	AB	AEDR	CB
- donors	40	40	100
- total antig. MM	1	1	0
- A antig. MM	1	1	1
- B antig. MM	1	1	1
- DR antig. MM		1	1

Patient ID	Name	A		B		C		DRB1		DQB1	
BE60265P	Peyerl Karel	01:01	01:02	08:02	44:02	05:01		12:01	03:01	02:01	

Search Results

Pat HLA

Don HLA

View Don

Don reports

Probability

Rows 82

Drag a column header here to group by that column

Patient BE60265P
 A 01:01 01:02 B 08:02 44:02 C 05:01 DRB1 12:01 03:01 DQB1 02:01

Donor ID	Type	Sex	DOB	Match grade	A.1 [01:01]	A.2 [01:02]	B.1 [08:02]	B.2 [44:02]	C.1 [05:01]	C.2	DR.1 [12:01]	DR.2 [03:01]	DQ.1 [02:01]	DQB1.2	Sample ID	DNA II
6 MD	M	M	1956	5/6 Antigen Match	1	25	8	44			12	17	2	7		
9 MD	M	M	1958	5/6 Antigen Match	1	2	8	44	3	7	12:XX	03:XX				
6 MD	F	F	1953	5/6 Antigen Match	1	2	8	44	5		12:XX	03:XX				
0 MD	F	F	1964	5/6 Antigen Match	1	3	8	44			12:XX	03:XX				
1 MD	M	M	1965	5/6 Antigen Match	1	23	8	44			12	3				
0 MD	M	M	1959	5/6 Antigen Match	1	10	8	12	5		12	3				
6 MD	F	F	1965	5/6 Antigen Match	1	2	8	44			12	3				
1 MD	F	F	1980	5/6 Antigen Match	01:FDYw	32:01	08:XKT	44:ENWF	05:AC	07:CVAI	12:DUKV	03:01:01	02:MS	03:ENW		
0 MD	M	M	1989	5/6 Antigen Match	01:FDYw	32:01	08:XKT	44:ENWF	05:AC	07:CVAI	12:DUKV	03:01:01	02:MS	03:ENW		
0 MD	F	F	1966	5/6 Antigen Match	01:FDYw	02:DFKI	08:XKT	44:ENWF	05:AC	07:CVAI	12:DUKV	03:01:01	02:MS	03:ENW		
0 MD	F	F	1990	5/6 Antigen Match	01:FDYw	02:DFKI	08:XKT	44:ENWF	05:AC	07:CVAI	12:DUKV	03:01:01	02:MS	03:ENW		
0 MD	F	F	1991	5/6 Antigen Match	01:FKNG	24:ECAZ	08:XKT	44:XX	05:AC	07:CVAI	12:DUKV	03:01:01	02:MS	03:ENW		
0 MD	M	M	1964	5/6 Antigen Match	01:FDYw	11:BDFZ	08:XKT	44:41	05:AC	07:CVAI	12:DUKV	03:01:01	02:MS	03:ENW		
6 MD	F	F	1964	5/6 Antigen Match	1		8	18			12	17	2	8		
1 MD	M	M	1960	5/6 Antigen Match	1		8				5	17				
0 MD	M	M	1988	5/6 Antigen Match	01:XX		08:XX	4:XX	07:XX	16:XX	11:01	03:01				
8 MD	M	M	1959	5/6 Antigen Match	1		8	44			11:AD	03:01				
2 MD	F	F	1973	5/6 Antigen Match	1		8	44	7		11	17	2	7		

PROMETHEUS

HLA codes

Search Options

Max. number of:	AB	AEDR	CB
- donors	40	40	100
- total antig. MM	1	1	0
- A antig. MM	1	1	1
- B antig. MM	1	1	1
- DR antig. MM		1	1

Patients

Add	View	Del	Up	Down
-----	------	-----	----	------

Patient ID	Name	A	B	C	DRB1	DQB1
BE602						

Search Results

Drag a column header here to group by that column

Donor ID	Type	Sex	DOB	Match grade
	CB	?	1996	6/6 Potential (Allele)
	CB	?	2001	6/6 Potential (Allele)
	MD	F	1955	6/6 Potential (Allele)
	MD	F	1992	5/6 Antigen Match
	MD	F	1978	5/6 Antigen Match
	MD	F	1983	5/6 Antigen Match
	MD	F	1990	5/6 Antigen Match
	MD	M	1958	5/6 Antigen Match
	MD	M	1970	5/6 Antigen Match
	MD	M	1962	5/6 Antigen Match
	MD	M	1956	5/6 Antigen Match

Multiple allele codes

Possible alleles of donor BEANT10011700

DNAA*01:FDYW = ?
DNAA*02:DFKP =
 02:01/02:01Q/02:01L/02:09/02:43N/02:43/02:66/02:75/02:83N/02:83/02:89/02:97/02:132/02:134/02:140
DNAB*08:BRUN = 08:01/08:02/08:19/08:19N
DNAB*44:FMYX = 44:02S/44:02/44:09/44:19/44:19N/44:27/44:66
DNAC*05:AC = 05:01/05:03
DNAC*07:CVAG = 07:01/07:06/07:18/07:52
DRB1*12:DUKV = 12:01/12:06/12:10/12:17
DRB1*03:01:01 = 03:01
DQB1*02:MS = 02:01/02:02/02:04
DQB1*03:ENWH = 03:01/03:09/03:19/03:21/03:22/03:24

Steiner Ltd.
www.steiner.cz
www.steinersw.eu
www.hlasoft.com
david@steiner.cz
 Prague
 Czech Republic

PROMETHEUS

Intelligent columns

- **A1, A2** – intelligent columns for HLA-A donor locus. If the donor has a typology at DNA level the DNA data will appear here (allele or the NMDP code). If not a serology code will appear.
- **B1, B2** - for HLA-B.
- **C1, C2** - for HLA-C.
- **DR1, DR2** - for HLA-DR/DRB1.
- **DQ1, DQ2** - for HLA-DQ/DQB1.
- You can filter, sort, group



PROMETHEUS

Match Grades in Prometheus

6/6 Allele Matched

- The donor is tested at I. class as well as II. class (A, B, DRB1).
- A full allele match at HLA- A, B and DRB1.

6/6 Potential (Allele) Matched

- The donor is tested at I. class as well as II. class (A, B, DRB1).
- Potential allelic match at HLA- A, B and DRB1.

6/6 Antigen Match (Allele Mismatch)

- The donor is tested at I. class as well as II. class (A, B, DRB1).
- A full match at serological level at HLA- A, B and DR
- A mismatch at DNA level

5/6 Antigen Match

- The donor is tested at I. class as well as II. class (A, B, DRB1).
- One mismatch at serological level at HLA- A, B or DR.



PROMETHEUS

Match Grades in Prometheus

4/6 Antigen Match

- The donor is tested at I. class as well as II. class (A, B, DRB1).
- Two mismatches at serological level at HLA- A, B and DR.
- This match grade has mostly sense just for a donor CB (cord blood).

4/4 AB Antigen Match

- The donor is tested at I. class (HLA- A, B).
- A full or potential match at serological level at A, B.

3/4 AB Antigen Match

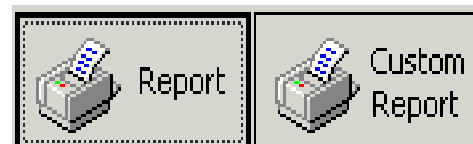
- The donor is tested at I. class (HLA- A, B).
- One mismatch at serological level at A or B.

Unknown match grade / Too many MM

- The level of match of the donor and the patient is not possible to count or the number of mismatches is too high.

PROMETHEUS

Search Report



Local Search Result Options OK Esc

Filters:

Validity Latest

Type of donors ?

0 ?
1 Cord Blood
2 Marrow Donor

Show only selected DNA m Cancel

6/6 Allele Match ☒ yes

6/6 Potential (Allele) Match ☒ yes

6/6 Antig.Match - Allele MM ☒ yes

5/6 Antigen Match ☒ yes

4/6 Antigen Match ☒ yes

4/4 AB Antigen Match ☒ yes

3/4 AB Antigen Match ☒ yes

2/4 AB Antigen Match ☐ no

Unknown / To many MM ☐ no

Order:

Sorting Best first

Options:

Show ☐ no Match probabilities ☐ no

Show ☐ no Record updates ☐ no

Show Sample ID ☐ no Show RS donor ☐ no

Show donor weight ☒ yes CMV interpretation ☐ no

Show donor TX ☐ no

Match grade summary ☒ yes

Lists of HUBs ☒ yes

Multiple allele codes ☒ yes

✓ OK ✗ Cancel ? F1

1 / 1

PROMETHEUS

Local Search 141

New Search
 Patients
 Search Options
 Run Search
 Sort Result
 Report
 Custom Report
 Save Search
 Open Search
 Full Screen

Search Options

Patients

Add

View

Del

Up

Down

Max. number of: AB ABDR CB
 - donors 40 40 100
 - total antig. MM 1 1 0
 - A antig. MM 1 1 1
 - B antig. MM 1 1 1
 - DR antig. MM 1 1 1

Patient ID	Name	A	B	DRB1	DQB1
BE60265P	Peyerl Karel	01:01	01:02	08:02	44:02

Search Results

Pat HLA

Don HLA

View Don

Don reports

Probability

Rows 82

Report Maker (Custom Report)

Insert Donor

Remove Donor

Clear List

Drag a column header here to group by that column

Patient BE60265P										A 01:01 01:02	B 08:02 44:02	C 05:01	DRB1 12:01 03:01	DQB1 02:01		
Drag a column header here to group by that column																
Donor ID	Type	Sex	DOB	Match grade	A.1 [01:01]	A.2 [01:02]	B.1 [08:02]	B.2 [44:02]	C.1 [05:01]	C.2	DR.1 [12:01]	DR.2 [03:01]	DQ.1 [02:01]	DQB1.2	Sample ID	DNA I
		?	1996	6/6 Potential (Allele)	01:XX		08:XX	44:XX			12:01	03:XX				
		?	2001	6/6 Potential (Allele)	01:XX		08:XX	44:XX			12:XX	03:XX				
		F	1955	6/6 Potential (Allele)	1		8	44			12	3	2	3		
		F	1992	5/6 Antigen Match	01:FDYw	02:DFKI	08:BRUN	44:FMYX	05:AC	07:CVAI	12:DUKV	03:01:01	02:MS	03:ENw		
		F	1978	5/6 Antigen Match	01:XX	02:XX	08:XX	44:XX	05:XX	07:XX	12:01	03:01				
		F	1983	5/6 Antigen Match	01:XX	02:XX	08:XX	44:XX	05:XX	07:XX	12:DUKV	03:01				
		F	1990	5/6 Antigen Match	01:XX	02:XX	08:XX	44:XX	05:XX	07:XX	12:01	03:01				
		M	1958	5/6 Antigen Match	1	24	8	44	5	7	12:01	03:01				
		M	1970	5/6 Antigen Match	1	24	8	44			12:01	03:01				
		M	1962	5/6 Antigen Match	1	2	8	44	5		12:01	03:01				
		M	1956	5/6 Antigen Match	1	2	8	44	7	7	12:01	03:01				
		M	1968	5/6 Antigen Match	1	29	8	44			12:01	03:01				
		M	1955	5/6 Antigen Match	1	2	8	44	5		12:01	03:01				
		F	1982	5/6 Antigen Match	1	32	8	44	5	7	12:XX	03:VG				
		M	1955	5/6 Antigen Match	1	23	8	44	5		12	3	2	3		
		M	1968	5/6 Antigen Match	1	3	8	44			12:01	03:AE				
		M	1960	5/6 Antigen Match	1	3	8	44	7		12	17	2	7		
		M	1956	5/6 Antigen Match	1	25	8	44			12	17	2	7		
		M	1956	5/6 Antigen Match	1	24	8	44	7		12:XX	03:XX				
		M	1958	5/6 Antigen Match	1	2	8	44	3	7	12:XX	03:XX				

Donor ID	Patient ID
BECBUCLM35937L	BE60265P
BECBULG300361	BE60265P
BEANT0000066	BE60265P
BEANT10011700	BE60265P
BEANT10005093	BE60265P
BEANT10001918	BE60265P
BEANT10000128	BE60265P

PROMETHEUS

Saving Search Results

- Button „Save search“



- Search result gets an ID and is frozen and will not be updated
- Searches may be selected using Patient ID or Search ID
- Save searches for audit reasons
- You can do new search for the patient
- One patient can have more saved search results
- Program will ask about saving a search when exiting



F4



1/1

1:1



?

Print + Close (F1)

2x Print + Close (F2)

3x Print + Close (F3)

4x Print + Close

Grid

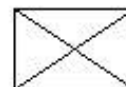
cm 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21

Search Report

Search ID: 141

Generated on 10.02.2013

Search coordinator: Peyerl Karel



Marrow Donor Program Belgium - Registry

Motstraat 40
2800 Mechelen
BelgiumPatient: **Peyerl Karel** Patient ID: **BE60265P** Doctor:Gender: **M** DOB: **14/04/1977** ABO: **0** Rhesus: **+** Diag: EMDIS Diag: **AML** TC: **BETRAANS1**

Patient's phenotype				01:01	08:02	05:01	12:01	02:01	
				01:02	44:02		03:01		
Donor's ID	Stat	Eth	A or	B or	C or	DR or	DRB345	DQ or	DPB1
Born	G	BGr	CMV	A*	B*	C*	DRB1	DQB1	

6/6 Potential Allele Matched ABDR Typed Donors

1	-	AV	01:XX	08:XX		12:01			
				44:XX		03:XX			
NC									
2		AV	01:XX	08:XX		12:XX			
				44:XX		03:XX			
NC									
3		AV	1	8		12		2	
				44		3		3	

5/6 Antigen Matched ABDR Typed Donors (1 Antigen Mismatch)

4	AV	01:FDYW	08:BRUN	05:AC	12:DUKV	02:MS
		02:DFKP	44:FMYX	07:CVAG	03:01:01	03:ENWH
5	AV	01:XX	08:XX	05:XX	12:01	
		02:XX	44:XX	07:XX	03:01	
6	AV	01:XX	08:XX	05:XX	12:DUKV	