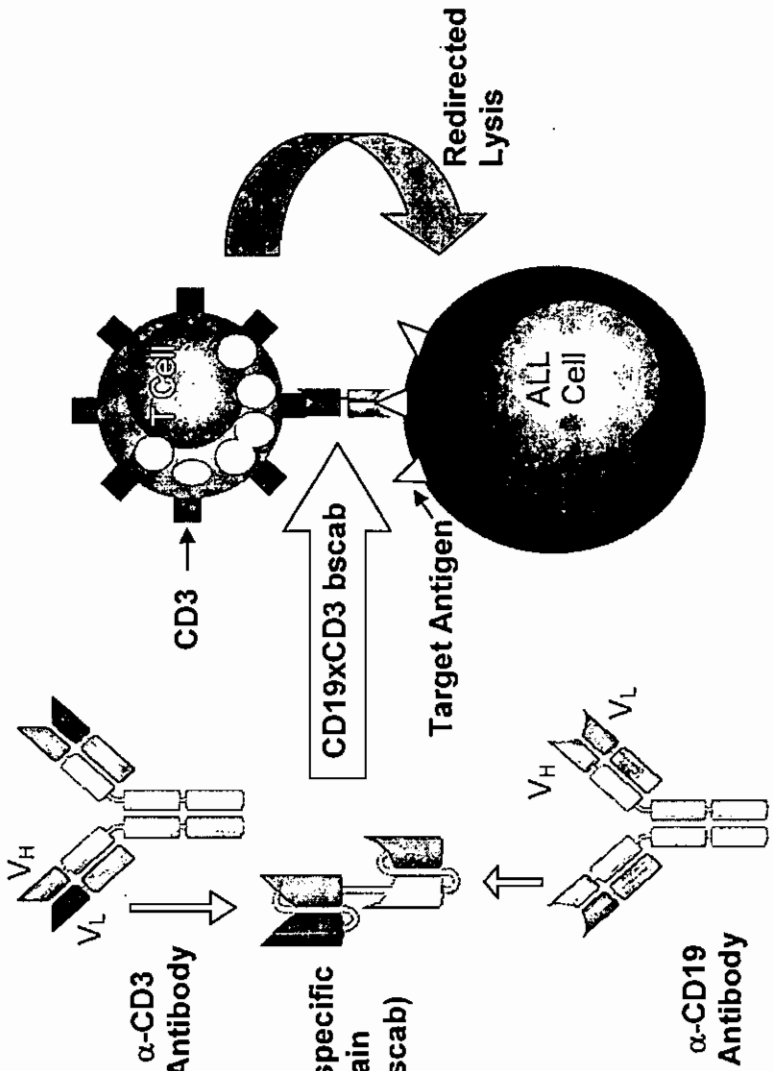
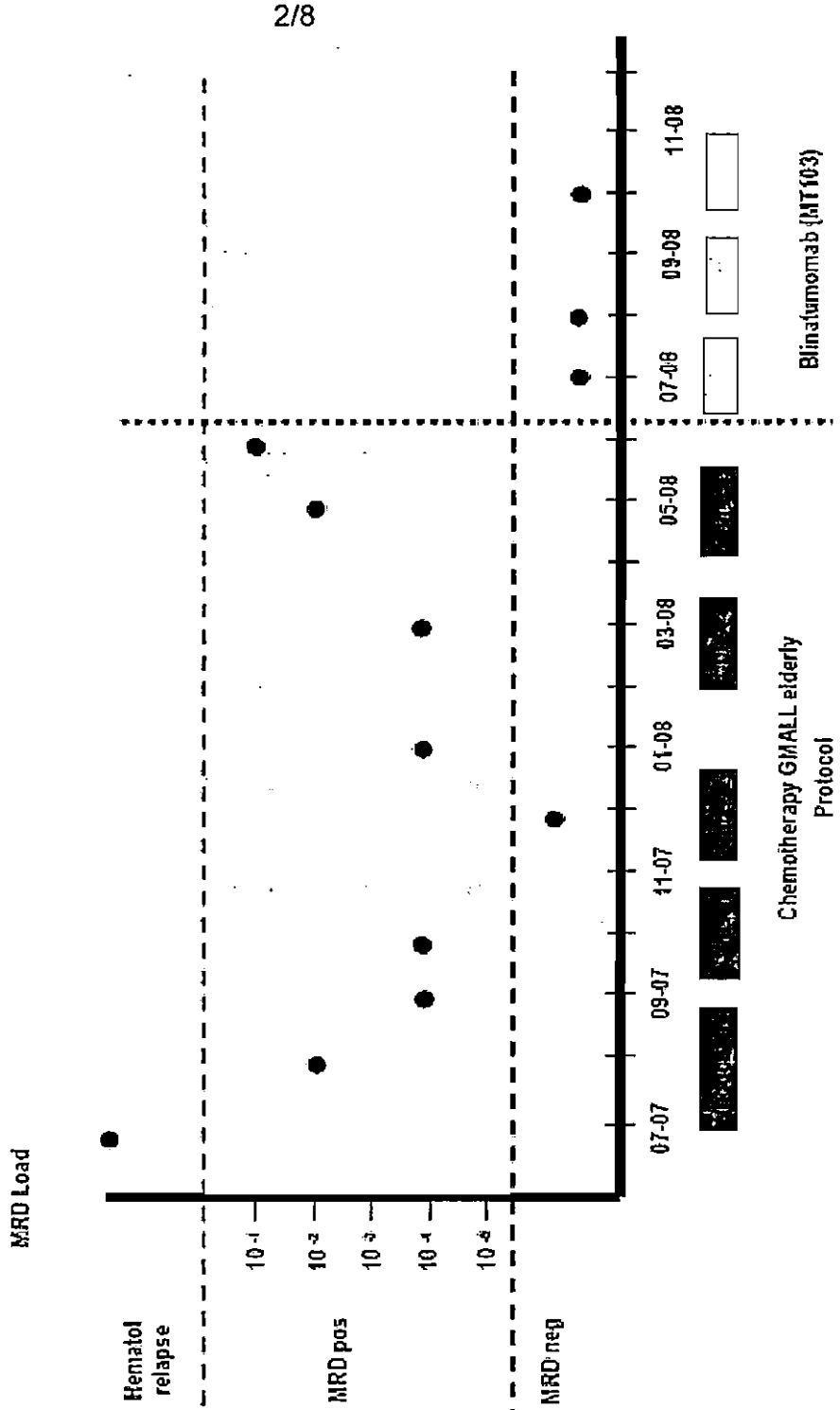

Redirected Lysis
T Cell
ALL Cell
CD3
CD19xCD3 bscab
Target Antigen
V_H
V_L
α-CD3 Antibody
CD19xCD3 Bispecific Single-chain Antibody (bscab)
V_H
V_L
α-CD19 Antibody

Figure 1

Figure 2


MRD Load
Hematol relapse
MRD pos
MRD neg
10 -1
10 -2
10 -3
10 -4
10 -5
07-07
09-07
11-07
01-08
03-08
05-08
07-08
09-08
11-08
Chemotherapy GMALL elderly Protocol
Blinatumomab (MT103)

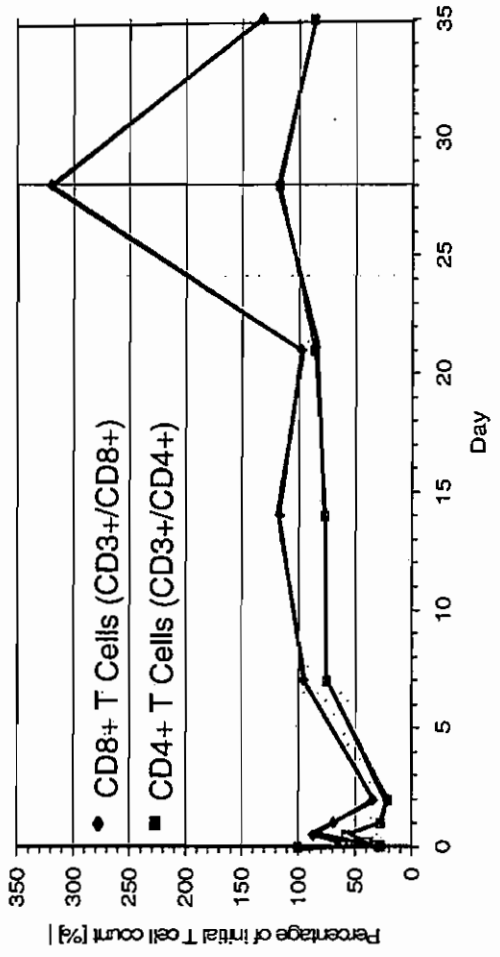

Percentage of initial T cell count [%]
350
300
250
200
150
100
50
0
0
5
10
15
20
25
30
35
Day
CD8+ T Cells (CD3+/CD8+)
CD4+ T Cells (CD3+/CD4+)

Figure 3

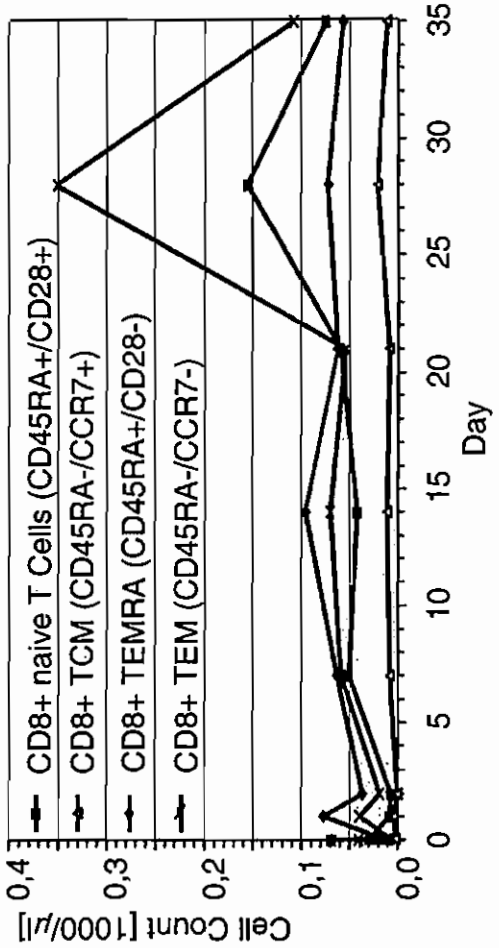

CD8+ naive T Cells (CD45RA+/CD28+)
CD8+ TCM (CD45RA-/CCR7+)
CD8+ TEMRA (CD45RA+/CD28-)
CD8+ TEM (CD45RA-/CCR7-)
Cell Count [1000/µl]
0,4
0,3
0,2
0,1
0,0
0
5
10
15
20
25
30
35
Day

Figure 4

Figure 5

Patient number	Gender age	Diagnosis	MRD
111001	Female 31 years	c-ALL	Ig-rearrangement
108001	Female 57 years	Pre-B-ALL	Ig-rearrangement
109002	Male 62 years	c-ALL	TCR-rearrangement
110002	Male 65 years	c-ALL	bcr/abl

Figure 6

Patient no.	Screening	MRD status after first cycle	Follow up
111001	$8x10^{-4}$	Negative	MRD negative from 23.06.2008 to 27.10.2008 Successful allogeneic stem cell transplantation No relapse to date
108001	$1x10^{-3}$	Negative	Ongoing negative MRD status since 07/28/2008
109002	$1x10^{-1}$	Negative	Testicular relapse followed by hematological relapse after 19 weeks of MRD-negativity
110002	bcr/abl $1.73x10^{-4}$	$5.54x10^{-4}$	Ongoing stable MRD status

Figure 7

	Number of patients	MRD-negativity achieved
Individual rearrangements (Immunoglobulin or TCR)	11	9
t(4;11) translocation	2	1
Bcr/abl positive	4	3
total	17	13
MRD response rate among 16 evaluable patients		81%

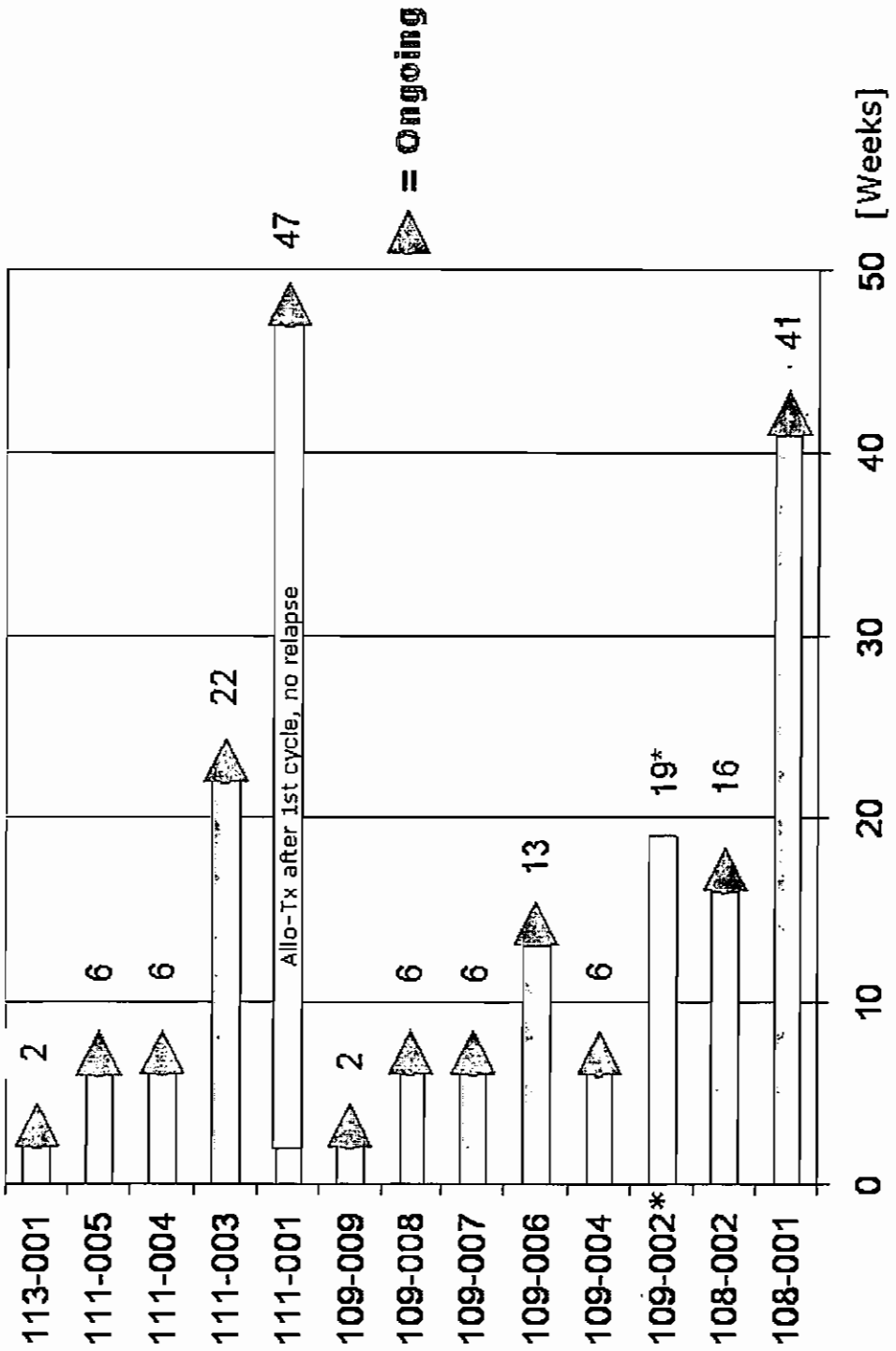

= Ongoing
0
10
20
30
40
50
[Weeks]
113-001
111-005
111-004
111-003
111-001
109-009
109-008
109-007
109-006
109-004
109-002*
108-002
108-001
2
6
6
22
47
Allo-Tx after 1st cycle, no relapse
2
6
6
13
6
19*
16
41

Figure 8