

| CODE | Age | Gender | Karyotype/DI/FISH | WBC (x10 ⁹ /L) | Treatment protocol | MRD status post-ind* | Time to relapse (y) | DFS (y) | Death post-relapse | date of dx | date of rel | date last visit | chr gains (%) chr18 | chr10 | % Major clone | Major clone | Clone | Predicted prognostic | Relapse (Yes/No) |
|--------|-----|--------|---|---------------------------|--------------------|----------------------|---------------------|---------|--------------------|------------|-------------|-----------------|---------------------|-------|---------------|-------------|---------------------------------|----------------------|------------------|
| HHD-01 | 2.4 | F | 55,XX,-X,-4,-6,+8,+10,+14,+17,-18,der(19)t(19;21)(q10;55,XX,-4,-6,+8,+10,+17,-18,-21)(q44,X)(2) | 11 | SHOP-2005 | neg | - | 9.7 | - | 13/03/2010 | - | 07/01/2020 | 71.6 | 78.6 | 28.9 | 433 | +10,+18,+21,+21 | FAVORABLE | NO |
| HHD-02 | 2.2 | M | 57,XY,-X,-4,+6,+9,-10,-14,+15,-17,+18,-21,-mar[20]/46,XY[5] | 3.7 | SHOP-2005 | neg | - | 12 | - | 07/04/2008 | - | 17/06/2020 | 60.1 | 78.4 | 30.3 | 433 | +10,+18,+21,+21 | FAVORABLE | NO |
| HHD-03 | 6.9 | F | 56,XX,-X,-1,der(1)del(1)(p34)dup(1)(q21q42),+4,-6,+10,-13,-14,-17,-18,-21(20)/46,XX[10] | 9.1 | PETHEMA LAL | neg | - | 6.3 | - | 23/01/2014 | - | 17/06/2020 | 62.9 | 74.6 | 27.7 | 433 | +10,+18,+21,+21 | FAVORABLE | NO |
| HHD-04 | 4.7 | F | 61,XX,-X,-2,+4,+5,+6,+8,+10,-12,-14,-15,-17,-18,-21[20] | 15.9 | SHOP-2005 | neg | - | 9.6 | - | 28/08/2010 | - | 19/05/2020 | 70.7 | 70.7 | 48.3 | 333 | +10,+18,+21,+21 | FAVORABLE | NO |
| HHD-05 | 4 | M | 60,XYY,add(2)(q31),-4,-5,-5,-6,del(9)(q15q21),+8,-10,-11,del(11)(q13q21),-17,-18,-14,-17,-18,-21[20] | 226 | PETHEMA LAL | neg | 3 | No | No | 18/09/2010 | 03/04/2014 | 16/07/2020 | 56.3 | 88.0 | 39.4 | 433 | +10,+18,+21,+21 | FAVORABLE | YES |
| HHD-06 | 12 | M | 53,XY,-X,-8,+10,-14,t(10;10),+18,-21,-21(17)53,XY,-X,del(4)(p21)3[53,XY,-X,del(6)(p21)2][615,q24]53,XY,-X,del(4)(p21)2[4]46,XY[2] | 2.7 | PETHEMA LAL | 1.6 | - | 10 | - | 21/09/2011 | - | 25/08/2020 | 60.3 | 84.2 | 38.8 | 433 | +10,+18,+21,+21 | FAVORABLE | NO |
| HHD-07 | 18 | M | 50-56,XY,-X,+4,+5,+6,+10,+14,+17,+18,-21,-21(12)46,XY[2] | 6.4 | PETHEMA LAL | neg | 2 | - | Yes | 25/01/2012 | 14/04/2014 | 23/05/2016 | 55.9 | 0.5 | 46.5 | 323 | +18,+21 | NFAVORABLE | YES |
| HHD-08 | 2 | M | 54-55,XY,-X,+4,+6,+8,+10,+17,+18,-21,-21(11)46,XY[9] | 115.3 | PETHEMA LAL | neg | - | 5 | - | 30/04/2012 | - | 02/08/2017 | 71.9 | 82.8 | 53.2 | 333 | +10,+18,+21 | FAVORABLE | NO |
| HHD-09 | 7 | F | 52,XX,-X,-X,+14,-21,-21,-mar[18]/46,XX[1] | 6 | PETHEMA LAL | neg | 2 | - | Yes | 10/03/2009 | 10/09/2011 | 17/07/2020 | 0.0 | 0.0 | 51.0 | 322 | +21 | NFAVORABLE | YES |
| HHD-10 | 3 | M | 51-53,XXY,-9,-14,t(17)(q10)-19,-21[6]46,XY[2] | 8.7 | PETHEMA LAL | neg | - | 9 | - | 15/02/2011 | - | 03/03/2020 | 84.0 | 72.8 | 18.9 | 333 | +10,+18,+21 | FAVORABLE | NO |
| HHD-11 | 2 | M | 55,XX,der(1),+4,+6,+8,+14,+18,-21,-21[6]46,XX[14] | 9.8 | PETHEMA LAL | neg | - | 10 | - | 03/08/2006 | - | 26/06/2017 | 65.2 | 84.1 | 47.3 | 333 | +10,+18,+21 | FAVORABLE | NO |
| HHD-12 | 2 | M | 53,XX,-6,+10,-14,+17,-18,-21,-21(11)46,XX[9] | 8.5 | PETHEMA LAL | neg | - | 8 | - | 05/07/2012 | - | 22/09/2020 | 59.2 | 71.6 | 37.3 | 333 | +10,+18,+21 | FAVORABLE | NO |
| HHD-13 | 8 | M | 53,XY,-X,-4,+6,+10,+14,+17,-18,-21,-21(17)56,XY,-X,del(1)(q23q42),+4,-6,+10,-10,+14,-17,-18,-21,-21(2)46,XY[4] | 115 | PETHEMA LAL | neg | - | 7 | - | 27/07/2012 | - | 10/02/2020 | 78.4 | 95.3 | 31.5 | 443 | +10,+18,+21,+21 | FAVORABLE | NO |
| HHD-14 | 5 | M | 60-e1,XY[3]46,XY[8] | 6.6 | PETHEMA LAL | neg | - | 13 | - | 31/07/2006 | - | 11/12/2019 | 63.4 | 76.8 | 34.5 | 433 | +10,+18,+21,+21 | FAVORABLE | NO |
| HHD-15 | 4 | M | 50,XX,-1,der(1)(p22),+9,-21,-21[6]50,XX,-1,del(1)(p22),+17,-21,-21,add(2)(p11)3[46,XX[1] | 2.7 | PETHEMA LAL | neg | 1 | No | No | 05/03/2013 | 02/07/2014 | 20/03/2017 | 0.0 | 2.4 | 66.4 | 422 | +21,+21 | NFAVORABLE | YES |
| HHD-16 | 5 | M | Di-1:14 FISH: Trisomies 4-10-17 | 8.86 | PETHEMA LAL | neg | - | 9 | - | 24/10/2011 | - | 18/11/2020 | 72.2 | 73.2 | 30.1 | 333 | +10,+18,+21 | FAVORABLE | NO |
| HHD-17 | 2 | M | 60-65,XY,-2,+5,+6,+8,+10,+11,+14,+15,+16,+17,+18,-21,-22(7)46,XY[9] | 3.7 | PETHEMA LAL | neg | - | 9 | - | 28/02/2011 | - | 13/07/2020 | 79.2 | 97.1 | 38.2 | 333 | +10,+18,+21 | FAVORABLE | NO |
| HHD-18 | 1 | F | Di-1:17 (13% blasts): FISH aneuploidy | 65.14 | PETHEMA LAL | neg | - | 8 | - | 17/01/2012 | - | 17/09/2020 | 90.7 | 92.6 | 20.4 | 466 | +10,+10,+10,+18,+18,+18,+21,+21 | FAVORABLE | NO |
| HHD-19 | 3 | M | 49-56,XY,-X,-Y,+4,+6,+7,-8,-10,+14,+19,-21,-21(11)46,XY[9] | 2 | PETHEMA LAL | neg | - | 7 | - | 16/10/2012 | - | 14/10/2020 | 0.5 | 69.0 | 31.4 | 432 | +10,+21,+21 | NFAVORABLE | NO |
| HHD-20 | 5 | M | 55,XY,-X,del(1)(q22q42),+4,+5,+6,del(6)(q21q25),+10,+14,+17,-21,-21(17)46,XY[3] | 6.1 | PETHEMA LAL | neg | 1 | - | Yes | 04/10/2011 | 12/09/2012 | 31/12/2014 | 0.0 | 83.7 | 46.5 | 432 | +10,+21,+21 | NFAVORABLE | YES |
| HHD-21 | 9 | M | Di hyperdiploidy FISH: Trisomies 4-10-17 | 1.65 | PETHEMA LAL | neg | - | 8 | - | 16/04/2012 | - | 22/10/2020 | 58.8 | 80.3 | 31.1 | 333 | +10,+18,+21 | FAVORABLE | NO |
| HHD-22 | 5 | M | 53,XX,-X,-4,der(4),-6,del(9)(p11)(10;13)(p26;q12),-14,-13,add(16)(q23),t(17)(p10)-21,-21,-mar[22]46,XX[2] | 88.3 | PETHEMA LAL | neg | - | 7 | - | 31/12/2012 | - | 16/11/2020 | 2.0 | 1.3 | 59.4 | 322 | +21 | NFAVORABLE | NO |
| HHD-23 | 3 | F | 53,XX,del(1),+4,+6,+14,-15,-17,-18,-21,-22(7)46,XX[6] | 33.9 | PETHEMA LAL | neg | - | 12 | - | 06/05/2008 | - | 14/07/2020 | 50.6 | 73.2 | 30.0 | 432 | +10,+21,+21 | FAVORABLE | NO |
| HHD-24 | 1 | M | 52,XY,-X,-6,+14,-17,-21,-21(17)46,XY[3] | 61530 | AIEOP-BFM ALL | 0.0093 | 1.2 | 1.2 | No | 20/02/2017 | 04/05/2018 | 19/12/2018 | 0.5 | 0.5 | 61.1 | 322 | +21 | FAVORABLE | YES |
| HHD-25 | 1 | M | 52-53,XY,-Y,inc[4]46,XY[16] | 9600 | AIEOP-BFM ALL | 0.0063 | 2.1 | 2.1 | No | 19/02/2015 | 26/03/2017 | 29/01/2019 | 1.4 | 0.5 | 64.3 | 322 | +21 | NFAVORABLE | YES |
| HHD-26 | 3 | M | 53,XY,inc[2] | 22060 | AIEOP-BFM ALL | neg | 1.6 | 1.6 | Yes | 19/11/2010 | 25/06/2012 | 21/09/2013 | 0.5 | 0.0 | 52.2 | 322 | +21 | NFAVORABLE | YES |
| HHD-27 | 5 | M | na | 5850 | AIEOP-BFM ALL | neg | - | 6 | - | 29/10/2014 | - | 13/11/2018 | 58.4 | 0.9 | 36.9 | 323 | +18,+21 | NFAVORABLE | NO |
| HHD-28 | 2 | M | 60,X,Y,(1)(7)(q7?),-21,-22,inc[6]46,XY[5] | 13890 | AIEOP-BFM ALL | neg | - | 5.1 | - | 27/06/2013 | - | 19/07/2018 | 63.2 | 79.4 | 40.2 | 333 | +10,+18,+21 | FAVORABLE | NO |
| HHD-29 | 7 | M | 55,XY,-X,+7,+9,+10,+14,+18,-21,-21(24)46,XY[16] | 2230 | AIEOP-BFM ALL | neg | - | 7 | - | 03/10/2013 | - | 04/10/2018 | 65.9 | 85.0 | 34.6 | 333 | +10,+18,+21 | FAVORABLE | NO |
| HHD-30 | 1 | M | 51-53,XY,inc[4]46,XY[7] | 42300 | AIEOP-BFM ALL | neg | 3.8 | 3.8 | No | 20/01/2012 | 07/11/2015 | 05/12/2018 | 0.0 | 0.0 | 68.3 | 322 | +21 | NFAVORABLE | YES |
| HHD-31 | 4 | M | Di-1:20 FISH: +4,+10,+17,-21 | 2.68 | PETHEMA LAL | neg | - | 6 | - | 17/02/2015 | - | 11/03/2020 | 83.8 | 82.8 | 53.4 | 333 | +10,+18,+21 | FAVORABLE | NO |
| HHD-32 | 5 | M | 54,XY,-X,-4,+6,+10,+16,-18,-21,-22(17)46,XY[8] | 14820 | AIEOP-BFM ALL | neg | 3.5 | - | No | 05/09/2011 | 05/03/2015 | 08/11/2018 | 65.8 | 74.4 | 45.2 | 333 | +10,+18,+21 | FAVORABLE | YES |
| HHD-33 | 2 | M | na | 9800 | AIEOP-BFM ALL | neg | 4.2 | 12 | No | 26/02/2009 | - | 24/04/2013 | 74.0 | 84.3 | 55.9 | 333 | +10,+18,+21 | FAVORABLE | NO |
| HHD-34 | 1 | F | 57-59,XX,-4,+5,+6,inc[5]46,XX[7] | 12980 | AIEOP-BFM ALL | neg | - | 4 | No | 28/11/2014 | - | 30/11/2018 | 69.0 | 84.5 | 51.6 | 333 | +10,+18,+21 | FAVORABLE | NO |
| HHD-35 | 5 | M | 56,XY,inc[4]46,XY[10] | 18480 | AIEOP-BFM ALL | neg | 2.3 | - | No | 14/12/2012 | 02/04/2015 | 16/11/2018 | 60.83 | 76.04 | 30.41 | 333 | +10,+18,+21 | FAVORABLE | YES |
| HHD-36 | 3 | F | 57,XX,-X,add(4)(q34),+6,+8,+10,+14,+17,+18,+20,-21,-21,inc[20] | 10190 | AIEOP-BFM ALL | neg | 5 | 8 | No | 25/01/2013 | - | 25/01/2018 | 88.79 | 92.06 | 39.72 | 333 | +10,+18,+21 | FAVORABLE | NO |
| HHD-37 | 10 | F | 55,XX,-X,-X,+4,+5,+6,+10,-17,-18,-21,-21(5)55,XX,del(8)(7)(p21),12q[3]46,XX[21] | 1.45 | SHOP-2005 | neg | 8 | No | No | 15/10/2012 | 15/06/2015 | 17/04/2020 | 60.78 | 82.35 | 34.31 | 333 | +10,+18,+21 | FAVORABLE | YES |
| HHD-38 | 3 | M | 53,XY,-X,-4,+5,+6,+14,-16,-17(2)46,XY[30] | 4.86 | SHOP-2005 | neg | 2.4 | 10 | No | 28/04/2008 | 10/08/2008 | 15/06/2020 | 3.53 | 2.35 | 78.82 | 322 | +21 | NFAVORABLE | YES |
| HHD-39 | 3 | M | 53,XY,-X,-6,+10,+14,-18,-21,-mar[4]46,XY | 124.95 | SHOP-2005 | neg | - | 9 | - | 26/11/2010 | - | 19/12/2019 | 67.32 | 82.35 | 46.41 | 333 | +10,+18,+21 | FAVORABLE | NO |
| HHD-40 | 5 | F | 56,XX,-4,+6,+7,+8,+14,+17,+18,-21,-22 | 7.51 | SHOP-2005 | neg | - | 13 | - | 29/08/2007 | - | 14/12/2020 | 58.88 | 13.08 | 39.72 | 323 | +18,+21 | NFAVORABLE | NO |
| HHD-41 | 1 | M | 57-58,XY,-4,+5,+6,+9,+10,-17,-18,-19,-21,-3mar[4]46,XY[65] | 4.57 | SHOP-2005 | neg | - | 9 | - | 08/07/2011 | - | 21/10/2019 | 68.71 | 82.31 | 46.94 | 333 | +10,+18,+21 | FAVORABLE | NO |
| HHD-42 | 2.3 | M | 56,XXY,-3,+4,+6,+10,+14,-18,-21,-21(5)46,XY[15] | 25.4 | SHOP-2005 | neg | - | 8.8 | - | 22/10/2010 | - | 23/09/2019 | 68.69 | 89.25 | 41.12 | 333 | +10,+18,+21 | FAVORABLE | NO |
| HHD-43 | 1 | F | 57,XX,-X,-4,+6,+10,+14,+17,-18,-18,-21,-21(19)46,XX[9] | 14.2 | PETHEMA LAL | neg | - | 6.8 | - | 27/08/2013 | - | 14/07/2020 | 87.68 | 86.26 | 37.44 | 333 | +10,+18,+21 | FAVORABLE | NO |
| HHD-44 | 3 | F | 58,XXXX,+4,+5,del(7)(q11),+8,+10,+13,+17,-18,-21,-21(9)58,XXXX,+4,+5,+8,+10,+13,+17,-18,-21,-21(11) | 9.7 | SHOP-2005 | neg | - | 6.7 | - | 18/09/2012 | - | 24/07/2019 | 55.71 | 89.05 | 44.76 | 333 | +10,+18,+21 | FAVORABLE | NO |
| HHD-45 | 2 | M | High hyperdiploid by FISH | 11.9 | UKALL2003 | 0.05 | 1.8 | 1.8 | Yes | 10/08/2010 | 25/05/2012 | 01/01/2013 | 0.50 | 74.75 | 54.95 | 332 | +10,+21 | NFAVORABLE | YES |
| HHD-46 | 6 | M | na | 35080 | AIEOP-BFM ALL | neg | 4.3 | - | No | 04/08/2008 | 20/11/2012 | 08/05/2013 | 2.94 | 0.49 | 33.33 | 422 | +21,+21 | NFAVORABLE | YES |
| HHD-47 | 6 | M | 57,XY,-Y,(1)(7)(q7?),+3,7del(3)(p21),-21,inc[13]46,XY[7] | 8500 | AIEOP-BFM ALL | 0.001 | - | 4.4 | - | 09/09/2014 | - | 21/01/2019 | 82.68 | 96.10 | 19.05 | 333 | +10,+18,+21 | FAVORABLE | NO |
| HHD-48 | 1 | M | 56-58,X,-X,-Y,-4,+5,+6,+8,+10,+14,-18,-20,-21,-21[8]46,XY[12] | 4940 | AIEOP-BFM ALL | 0.0013 | 2.2 | - | No | 22/09/2014 | 03/12/2016 | 17/01/2019 | 3.88 | 84.95 | 56.80 | 332 | +10,+21 | NFAVORABLE | YES |
| HHD-49 | 1 | M | 61-63,XY,-Y,-3,+4,-5,+6,+8,-10,-7(10),-7(12),-14,+17,-18,-21,-22,-22mar[cp]7]46,XY[14] | 3370 | AIEOP-BFM ALL | neg | - | 4.1 | - | 13/11/2014 | - | 13/12/2018 | 73.02 | 82.79 | 46.51 | 333 | +10,+18,+21 | FAVORABLE | NO |
| HHD-50 | 14 | M | 53,XY,-X,-Y,+4,+6,-7,-10,-11,-13,-14,-21,-21(5)53,XY,-Y,del(4)(p16)(q24),-17[15] | 5.19 | PETHEMA LAL | 4.7 | - | - | No | 25/09/2018 | 21/11/2019 | 18/09/2020 | 1.44 | 82.21 | 54.33 | 432 | +10,+21,+21 | NFAVORABLE | YES |

*MRD measured by flow cytometry or Ig clonotype detection

Supplementary Table 1: Cytogenetic and clinical data of all the childhood HHD-B-ALL samples used for blind validation analysis.