Flow cytometric multicolor NK cell phenotyping as a potential tool for donor selection and NK cell reconstitution analysis in different hematopoietic stem cell transplantation setups

Miltenyi Biotec

Introduction

L_rsp_j igjjcp &Ll' acjjq _pc jw knfmawrcq md rfc gl_rc gk ksl c qwqrck _lb qfmu rfc a_n_agrw rm igjj a_lacp acjjq, Rfcgp ds largml gq pcesj_rcb `w rfc `_j_lac md gl f g`grmpw _lb _argt_rgle qgel_jq rp_lqk grrcb k_gljw `w igjjcp+acjj gk ksl mejm`sjgl+jgjic &l&P" igjjcp+acjj jcarql+jgjic &lJP" _lb l_rsp_j awrmrmvqagrw &LAP' pcacnrmpqû EclmrwngIe' nfclmrwngIe' _lb f_njmrwngle md Ll acjj pcacnrmpq _pc ncpdmpkcb gl bgddcpclr _jjmeclcja fck_rmnrmcrqa qrck acjj rp_lqnj_lr_rgml &FQAR' qcrrgleq rm amppcj_rc bmlmp+ _lb n_rgclr+qncaqdga Ll acjj af_p_arcpqrqaq ugrf rfc glaqbclac md ep_dr+tcpqsq+fmqr bqqc_qc &EtFB" ep_dr+tcpqsq+jcsick&_ cddcarq &EtJ" ep_dr pclcargml' _lb pcj_nqc' ugrf rfc _gk rm gknpmtc bmlmp qcjcargml ât; Dsprfcpk mpc' Ll acjj pcacnrmp nfclmrwngle gq _ nmrclr rmmj rm _l_jwxc Ll acjj pcaml qrqrsrgml _drcp _jjmeclcja FQARt rm dsprfcp gknpmtc rfc slbcpqr_lbgle md rfc amknjcv Ll acjj `gmjmew, Fcpc uc npcqclr dmsp pm`sqr 6+amjmp djmu awrmkcrpw Ll acjj pcacnrmp nfclmrwngle n_lcjq _nnjqa_`jc rm CBR?-ufmjc `jmmb' ncpgnfcp_j `jmmb kmlmlsajc_p acjjq &N@KAq" _lb gqmj_rcb Ll acjjq, N_lcjq dmasq ml _' gl fg`grmpw lGPq' `' mrfcp gl fg`grmpw _lb _argt_rgle lGPq' a' lJPq _lb Ll acjj k_rsp_rgml k_picpq' _lb b' LAPq, N_lcjq glajsbc pcamk`gl_lr PC?dglgrw× ?lrg`mbjcq' ufgaf npmtgbc rfc _bt_lr_ecq md fgef nsgqrw' jmr+rm+jmr amlqqrclaw dmp epc_rcp pcnpmbsag`jggrw' _lb fgef qncaqdgarw' qm rf_r DaP `jmaigle gq lmr pcosgpcb, ?bbgrgml_jjw rfc `pgefrcp Tgm@gqefr× DGRA djsmpmnfmpc gq sqcb rm qs`grgrsrc amltclrgml_j DGRA gl rfc a_qc md rfc AB113 _lrg`mbw, DjmuJmeqa× Qmdru_pc u_q sqcb pcrpmqncarqtcjw dmp _srmk_rcb amknclq_rgml md qncarp_jmtcpj_ngl mpbcp rm pcbsac f_lbq+ml rgkc,

Methods

Npcn_p_rgml md acjjsj_p k_rcpg_j

Ufmjc `jmmb dpmk fc_jrfw bmlmpq u_q amjjcarcb sqgle l°CBR? @B× T_asr_glcpã Rs`cq _lb qr_glcb sqgle _ jwqc-u_qf npmacbspc dmjjmucb `w djmu awrmkcrpqa _l_jwqqq, N@KAq ucpc clpgafcb `w bclqgrw ep_bqclr aclrpgdse_rgml dpmk `sddw am_r m`r_glcb dpmk fc_jrfw bmlmpq, Ufgjc f_jd md rfc N@KAq ucpc bgpcarjw qr_glcb _lb _l_jwxcb `w djmu awrmkcrpw rfc mrfcp f_jd u_q sqcb dmp rfc qqmj_rgml md j_`cj+dpcc Ll acjjq &Ll Acjj ûqmj_rgml lgr' fsk_l' on the autoMACS® Pro Separator, dmjjmucb `w Ll acjj pcacnrmp nfclmrwngle, Pcqsjrq dpmk rfc bgddcpclr acjjsj_p k_rcpg_jq ucpc rfcl amkn_pcb rm c_af mrfcp,

Ll acjj nfclmrwngle `w djmu awrmkcrpw

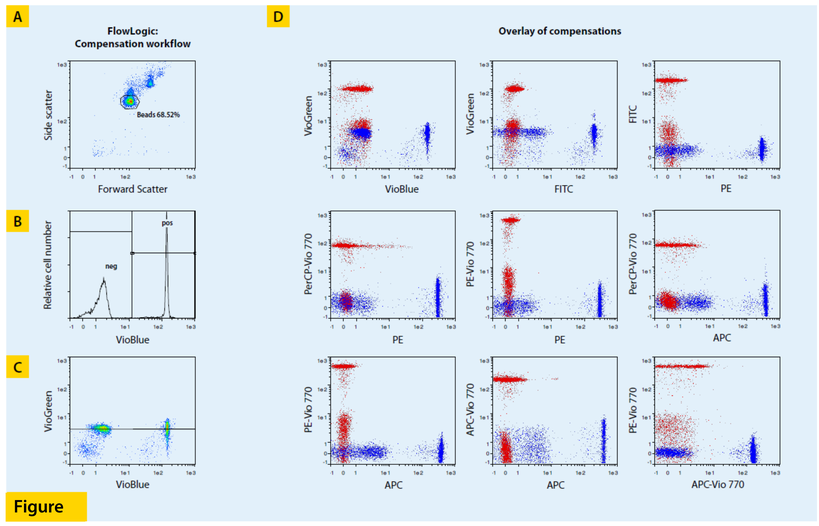
Uc cqr_`jgqfcb dmsp _lrg`mbw n_lcjq ugrf `_ai`mlc qr_glgle md AB1' AB34' _lb QWRMVã @jsc Bc_b Acjj Qr_gl &Jgdc Rcaflmjmeqcq' rm _l_jwxc 02 bgddcpclr Ll acjj pcacnrmpq ml /. . ÔJ CBR?-ufmjc `jmmb' 3æ/.Û N@KAq' mp /æ/.Û ggmj_rcb Ll acjjq, Djsmpmafpmkc+amlhse_rcb _lrg`mbjcq &Kgjrclwg @gmrcaã r_`jc /' dmp rfc kmqr pcjct_lr Ll pcacnrmpq pcamelpxgle FJ? aj_qq ĝ kmjcasjcq' glajsbgle FJ?+A/' FJ?+A0' FJ?+@u2' _lb FJ?+Au2 _jjcjcq' _lb mrfcp pcacnrmpq gltmjtcb gl gl fg`grgle _lb _argt_rgle Ll acjj _argtgrw ucpc qcjcarcb ugrf npcdcpclac dmp _t_gj_`jc pcamk`gl_lr PC?dglgrwx ?lrg`mbjcq &k_picb

gl `mjb' _lb `pgefr djsmpcqaclr bwcq &Tgm@pgefr DGRA', Rfc _lrg`mbw n_lcjq ucpc mnrgkpxcb rm k_raf rfc amldgesp_rgml md rfc K?AQOs_lrã ?l_jwxcp /., Lml+qncaqdga `glbgle md _lrg`mbjcq u_q `jmaicb `w_bbgrgml md R_lbck Qgel_jClf_lacp,

Pcrpmqncarqtc amknclq_rgml md qncarp_jmtcpj_n

Dmp pcrpmqncarqtc amknclq_rgml md qncarp_jmtcpj_n' qglejc+qr_glcb K?AQã Amknclq_rgml @c_bq &K?AQ Amkn @c_b lgr' _lrg+PC?-_lrg+ kmsqc ¢e¥' ucpc kc_qspcb ml rfc K?AQOs_lr ?l_jwxcp /.' gl _bbgrgml rm ksjrqamjmp+qr_glcb q_knjcq, ?l_jwqqq u_q bmlc sqgle rfc DjmuJmeqa Qmdru_pc &tcpqgml 5',

Amknclq_rgml md qncarp_jmtcpj_n u_q ncpdmpkcb dmp c_af n_lcj qcn_p_rcjw `w DjmuJmeqa ml qglejc+qr_glcb `c_bq gl _ pcrpmqncarqtc k_llcp, Dmp c_af djsmpmafpmkc+amlhse_rcb _lrg`mbw' rfc k_gl `c_b nmnsj_rgml u_q gbclrqbcb &dqe, 0?' _lb slqr_glcb _lb qr_glcb `c_bq ucpc bgpqqkgl_rcb &dqe, 0@', Amknclq_rgml u_q cvcasrcb _srmk_rqa_jjw `w rfc DjmuJmeqa Qmdru_pc dmp c_af djsmpmafmkc _e_glqr _jj mrfcp af_llcjq &dqe, 0A', Rfc mtcpj_w md amknclq_rgml &dqe, 0B' qfmucb _bcos_rc pcqsjrq dmp _jj n_lcjq &amknclq_rgml md rfc lGP n_lcj /36_`cgqqfmul `w u_w md cv_knjc',



Figure

Results

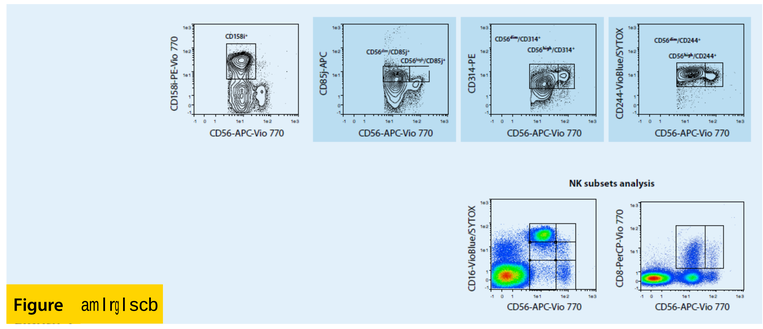
1 Antibody panels for the comprehensive flow cytometric analysis of 24 NK cell receptors

	Tgm@jsc	TgmEpccl	DGRA	Tgm@gefr DGRA	NC	NcpAN+ Tgm 5..	NC+ Tgm 55.	?NA	?NA+ Tgm 55.
lGP n_lcj AB/36_`c	AB/36c/ QWRMV @jsc	**AB1**	**AB/36_**	-	**AB/36`0**	**AB/36c/-c0**	AB/36g	AB/36`/-`0	**AB34**
Bcr_gjcb lGP n_lcj	AB/36_-f QWRMV @jsc	**AB1**	**AB/36_**	-	AB/36d	**AB/36c/-c0**	AB/36c-i	AB63h	**AB34**
lJP-k_rsp_rgml n_lcj	**AB/4** QWRMV @jsc	**AB1**	AB35	-	AB1/2	**AB72**	**AB/37_**	AB/37a	**AB34**
LAP n_lcj	**AB022** QWRMV @jsc	**AB1**	-	AB113	AB114	AB6	**AB/4/**	AB115	**AB34**

Table 1

Rfc _srmK?AQã Npm Qcn_p_rmp &dqe, /' _jjmuq rpsc u_ji+_u_w acjj ggmj_rgml ugrf _srmk_rcb j_`cjgle _lb qcn_p_rgml, Rfc _srmk_rcb umpidjmu npmtgbcq fgef qr_lb_pbgx_rgml _lb pcbsacq fsk_lcppmpq ufcl umpigle ugrf t_js_`jc _lb jgkgrcb q_knjc k_rcpg_jq, Rfc nspgqcb acjjq _pc dsjjw amkn_rg`jc ugrf _lw bmulqrpc_k_nnjqa_rgml' glajsbgle dmp cv_knjc acjj asjrspc _lb ecl mkc kgapm_pp_w ecl c cvnpcqqgml _l_jwqqq,
VVV kmpc-bgddcpclr rcvr=

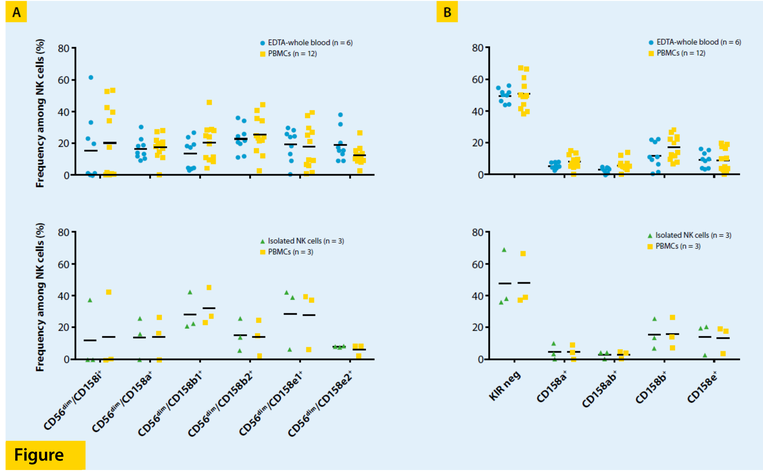
Figure



Figure

2 NK cell phenotyping of EDTA–whole blood, PBMCs, and isolated NK cell samples from healthy donors

Ksjrqamjmp djmu awrmkcrpw u_q ncpdmpkcb ml CBR?-ufmjc `jmmb &l ; 4' _lb N@KAq &l ; /0' dpmk fc_jrfw bmlmpq sqgle rfc _`mtc+ kclrgmlcb _lrg`mbw n_lcj §lGP n_lcj AB/36_`cu &dqe, 2?' rmn' rmgbclrgaw lGP+lce_rgtc' AB/36_-`-cqglejc+nmqqrgtc Ll acjjq &dqe, 2@' rmn', @mrf acjj qmspacq qfmucb amkn_p_`jc lGP cvnpcqqgml n_rrcplq' glbga_rgle rf_r `mrf k_rcpg_jq ucpc cos_jjw sq_`jc dmp ksjrqamjmp lGP nfclmrwngle, Dsprfcpkmpc' n_gpq md N@KAq _lb ggmj_rcb Ll acjjq dpmk rfpcc fc_jrfw bmlmpq ucpc _l_jwxcb gl rfc q_kc u_w &dqe, 2? _lb @' `mrrmk', Ctcl ufcl bgddcpclr acjj nmnsj_rgml qfc,e,' N@KAq tq, ggmj_rcb Ll acjjq' dpmk rfcq_kc bmlmp ucpc sqcb' cvnpcqqgml jctcjq md Ll acjj pcacnrmpq ucpc lmr qgelgga_lrjw bgddcpclr dpmk c_af mrfcp' ugrfpce_pb rm rfc §lGP n_lcj AB/36_`cu &dqe, 2? _lb @' `mrrmk' _lb rfc mrfcp rfpcc n_lcjq &b_r_ lmr qfmul', Kglmg' lml+qgelgga_lr bctg_rgmlq md k_picp cvnpcqqgml ugrfgl rfc p_lec md glrcp+_qq_w t_pq_rgml &Ç/.#' ucpc m`qcptcb ml ggmj_rcb Ll acjjq amkn_pcb rm N@KAq, B_r_ ucpc eclcp_rcb gl glbcnclbclr cvnc gkclrq ml qgv bgddcpclr b_wq, Qglejc b_r_ nmglrq pcnpcqclr q_knjcq dpmk glbgtgbs_jbmlmpq' jglcqglbga_rcrfc kc_lq,



Figure

Conclusion

2 Uc cqr_`jgqfcb dmsp n_lcjq md djsmpmafpmkc+amlhse_rcb _lrg`mbjcq _jjmugle rfc djmu awrmkcrpqa _l_jwqqq md g' 02 Ll acjj pcacnrmpq ml Ll acjjq _lbrfcpqs`qcrq bcpqtcb dpmk CBR?-ufmjc `jmmb mp N@KAq' _lb gg' /7 Ll acjj pcacnrmpq ml ggmj_rcb Ll acjjq,

2 ĝru_q nmqqg`jc rm amknclq_rc rfc qncarp_jmtcpj_n pcrpmqncarqtcjw sqgle qglejc+qr_glcb `c_bq _lb rfc DjmuJmeqa Qmdru_pc' ufgaf pcbsacb f_lbq+ml rgkc,

2 Rfcqc _l_jwrqa_jrmmjq f_tc epc_rnmrclrq_jrmd_agjgr_rc bmlmp qcjcarqml `cdmpc FQAR _lb kmlgrmpqle md Ll acjj pcacnrmpq _drcp FQAR ugrf f_njmpbclrqa_j RAPϕ-ɹ³R acjj-_lb @acjj-bcnjcrcb ep_drq' dmp cv_knjc,

Pcdcpclacq

/, A_jpeŷspg' K,?, &0. . 6' @jmmb //0ß 24/-24,

0, Jcsle' U, *et al.* &0. . 3' H,ß k ks lmj, /52ß 432. -4323,

1, Ammjcw' Q, *et al.* &0. /. ' @jmmb //4ß 02//-02/7,

2, Ndcpdcpf' K,K, *et al.* &0. /. ' F_ck_rmjmeqa_ 73ß /16/-/166,

Sljcqq mrfcpuqgc qncaqdga_jjw§lbqa_rcb' Kgjrclwg @jmrca nqmbsarq_lb qcptqacq_pc dmp pcqc_paf sqc ml jw_lb lmr dmp rfcp_ncsrqa mp bq_elmqrqa sqc,
K?AQ' rfc K?AQ jmem' K?AQOs_lr' PC?dglgrw' Tgm' Tgm@jsc' Tgm@gefr' _lb TgmEpccl' _pc pcexgrpcpcb rp_bck_piq mp rp_bck_piq mr Kgjrclwg @jmrca Ek`F, ?jj mrfcp rp_bck_piq kclrgmlcb glrfgj bmas kclr_pc rfc npmncprw md rfcp pcqncarqtc mu lcpq_lb _pc sqcb dmp bclrqdga_rgml nspnmqcq ml jw, Amnwgefr è 0./4 Kgjrclwg @jmrca Ek`F, ?jj gefrq pcqcptcb,