

Supplementary Figures

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Fig. S1. Causal effects between immunophenotype and FE. AC, absolute count; CCR, C-C chemokine receptor; CD, cluster of differentiation; cDC, conventional dendritic cells; CI, confidence interval; CM, central memory; DN, double-negative; FE, focal epilepsy; HLA DR, human leukocyte antigen-DR isotype; Ig, immunoglobulin; NKT, natural killer T cell; nSNP, number of single-nucleotide polymorphisms; OR, odds ratio; SSC-A, side scatter area; TBNK, T-cell, B-cell, and natural killer cell panel.

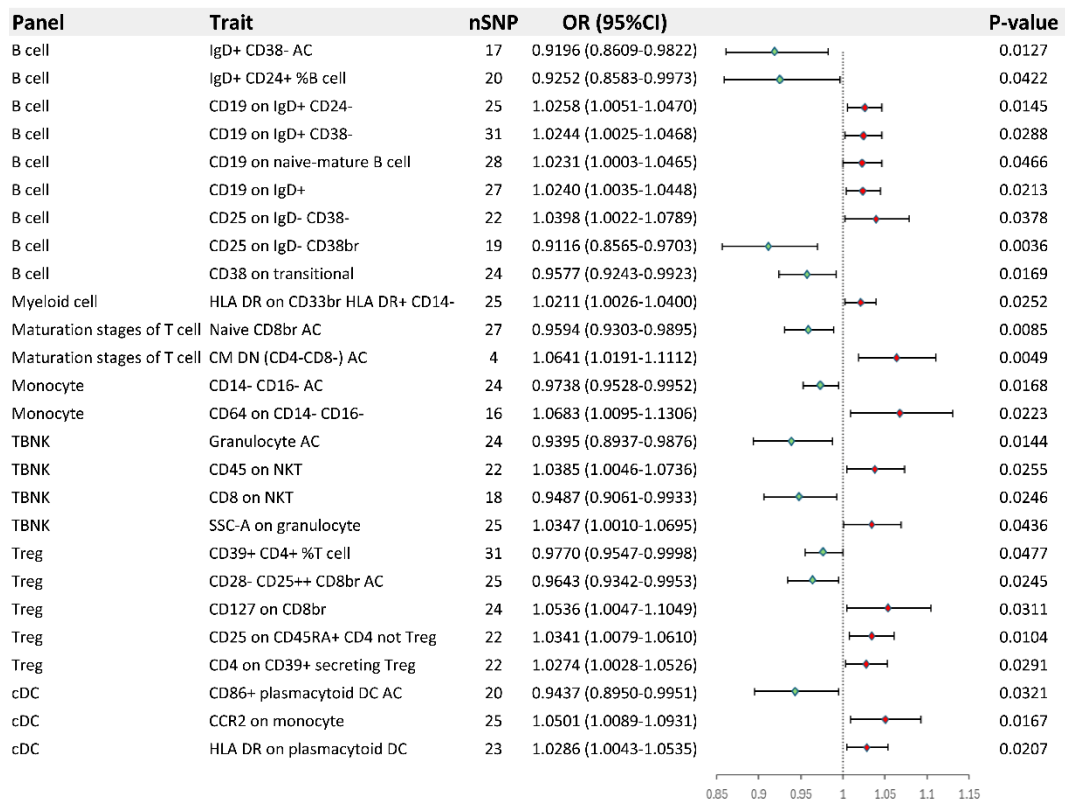


Fig. S2. Causal effects between immunophenotype and GE. AC, absolute count; CCR, C-C chemokine receptor; CD, cluster of differentiation; cDC, conventional dendritic cells; CI, confidence interval; CM, central memory; DN, double-negative; FSC-A, forward scatter area; GE, generalized epilepsy; HLA DR, human leukocyte antigen-DR isotype; Ig, immunoglobulin; NKT, natural killer T cell; nSNP, number of single-nucleotide polymorphisms; OR, odds ratio; SSC-A, side scatter area; TBNK, T-cell, B-cell, and natural killer cell panel; TCR, T cell receptor; Treg, regulatory T cells.

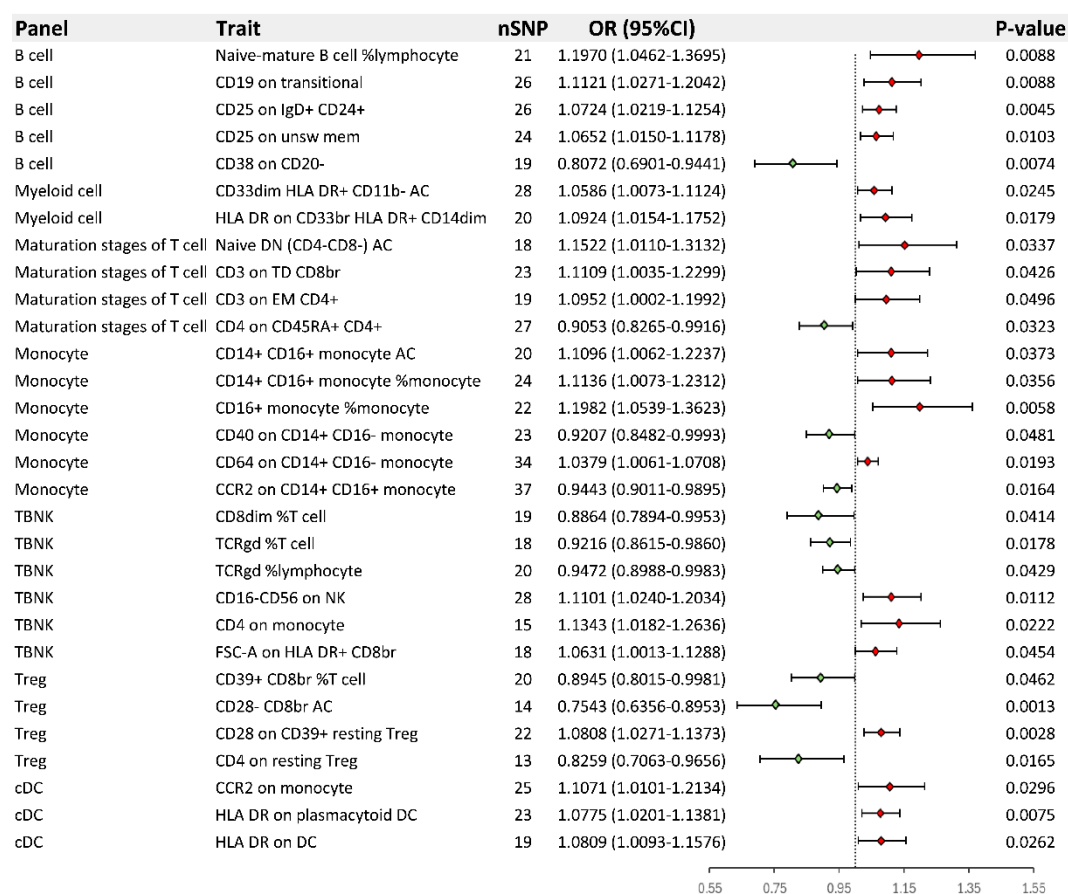
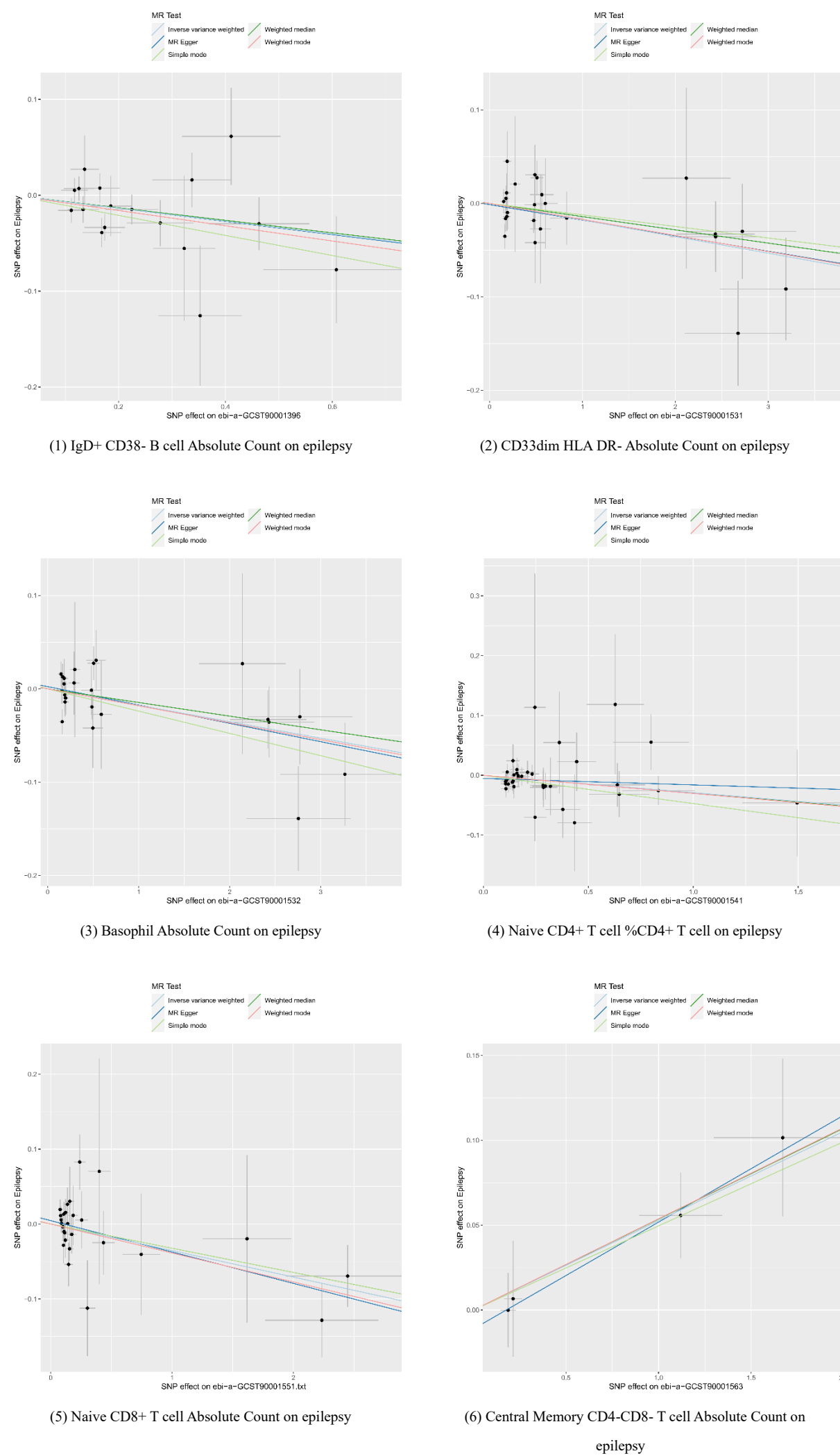
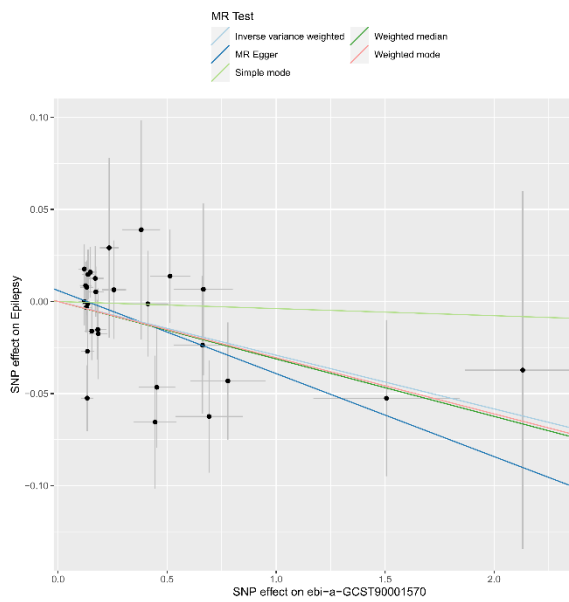
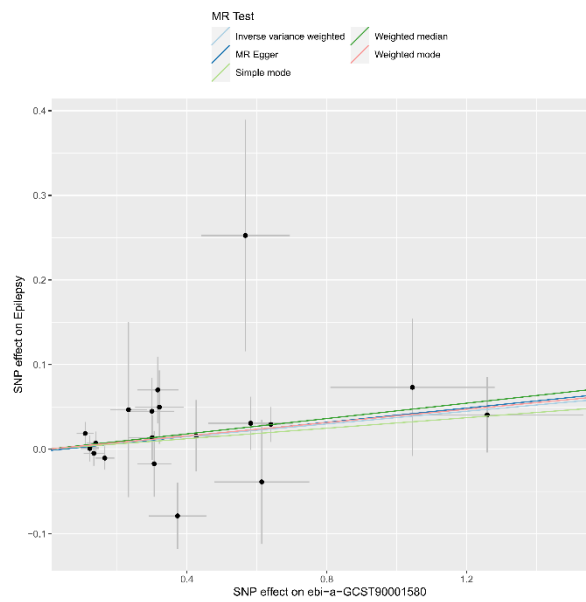


Fig. S3. Scatter plots for the effect of immunophenotype on epilepsy. CD, cluster of differentiation; HLA DR, human leukocyte antigen-DR isotype; Ig, immunoglobulin; MR, Mendelian randomization; SNP, single nucleotide polymorphism.

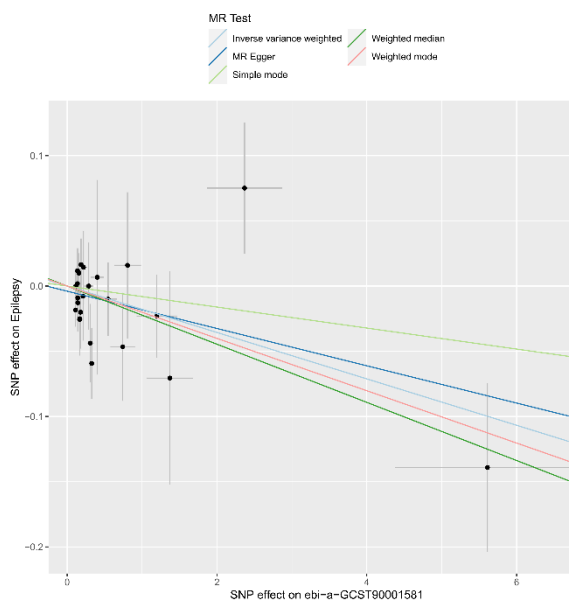




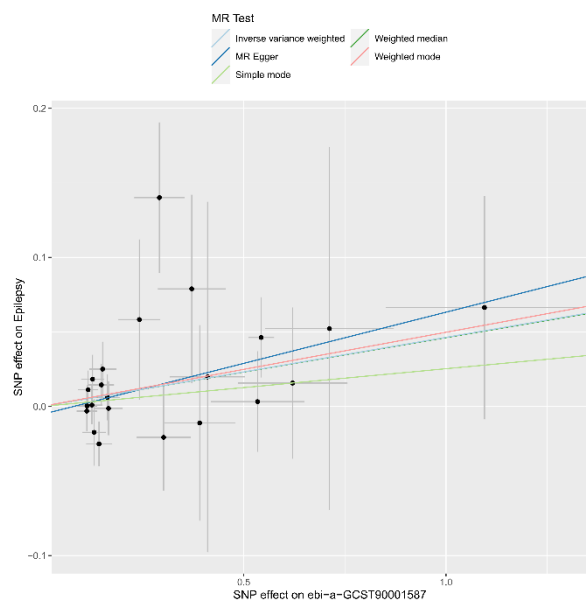
(7) Effector Memory CD4-CD8- T cell %CD4-CD8- T cell on epilepsy



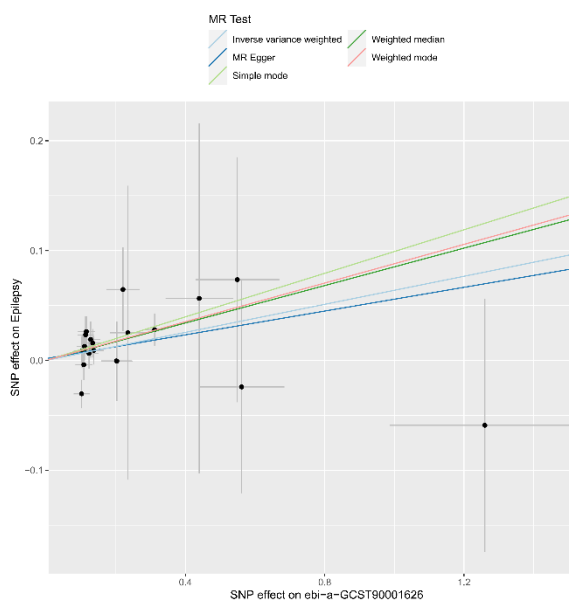
(8) CD14+ CD16+ monocyte Absolute Count on epilepsy



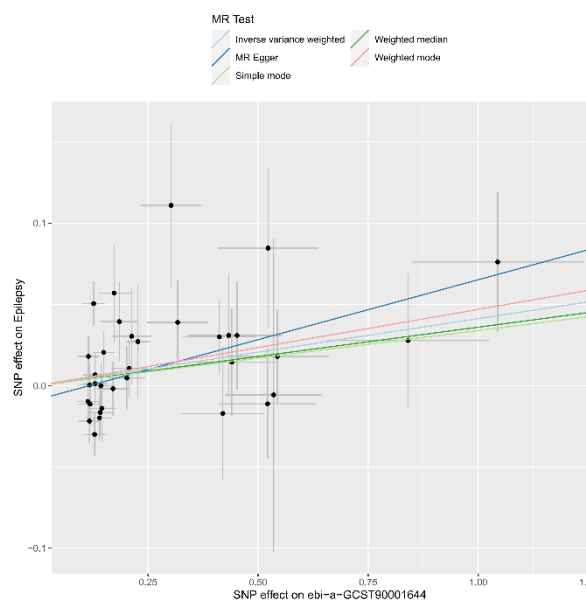
(9) CD14- CD16- Absolute Count on epilepsy



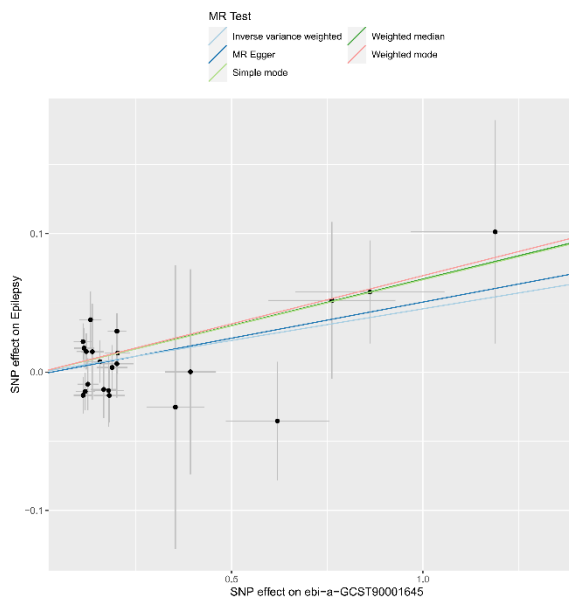
(10) CD16+ monocyte %monocyte on epilepsy



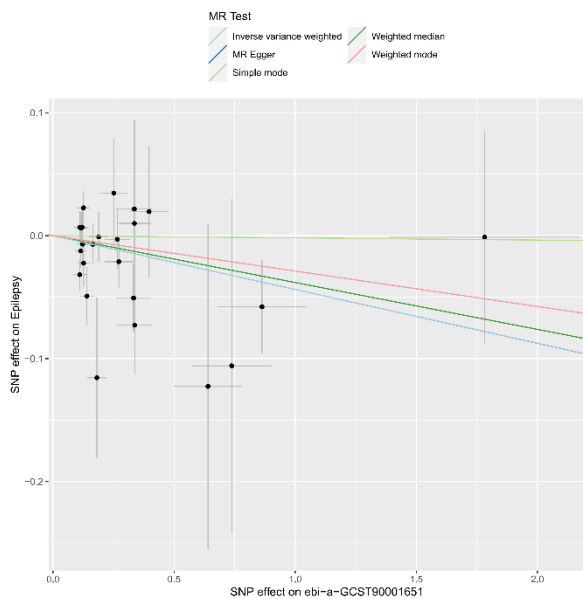
(11) HLA DR+ CD4+ T cell %lymphocyte on epilepsy



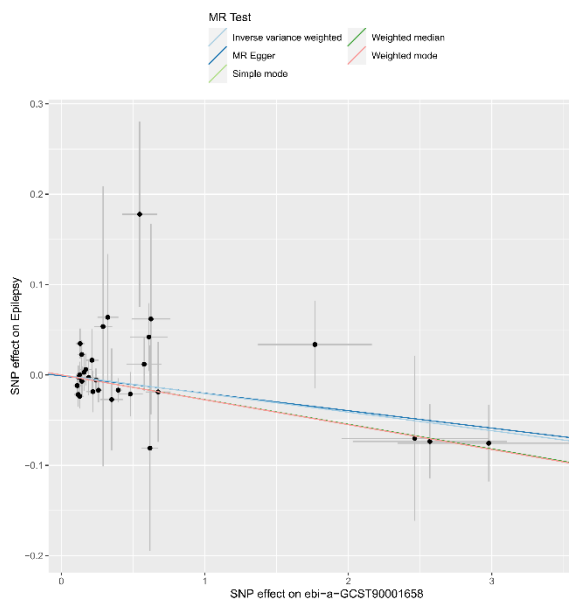
(12) B cell %lymphocyte on epilepsy



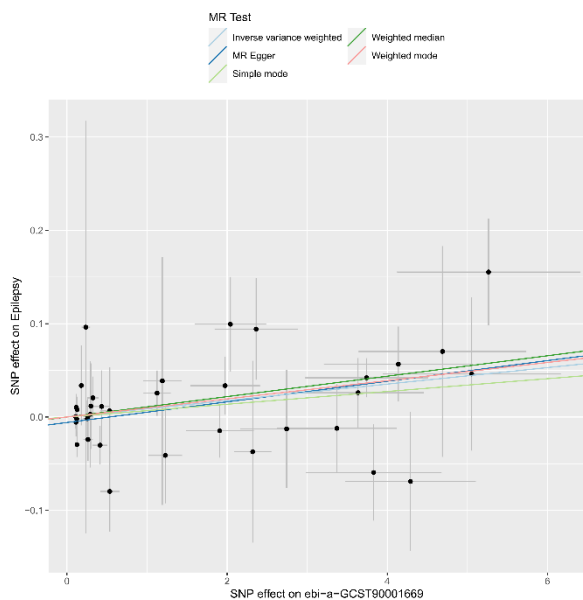
(13) Natural Killer Absolute Count on epilepsy



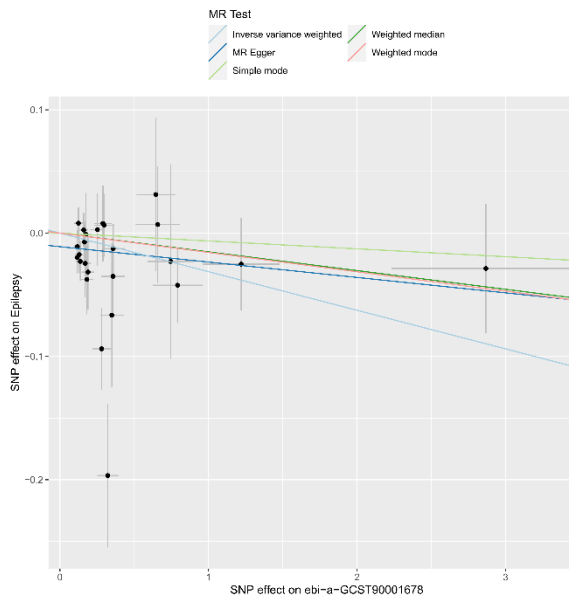
(14) Granulocyte Absolute Count on epilepsy



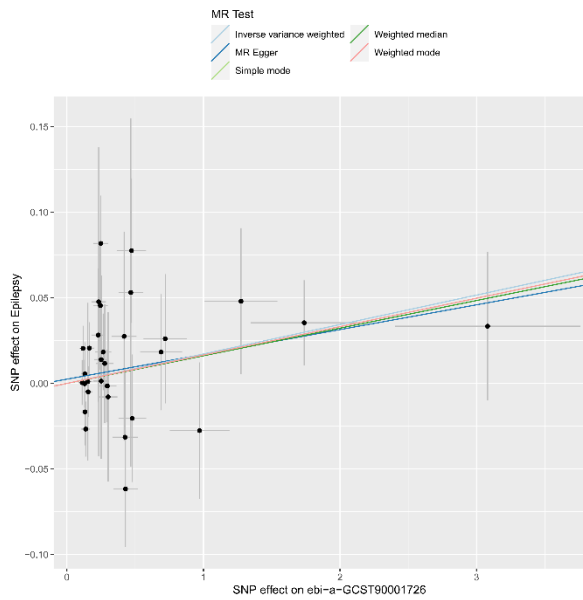
(15) CD39+ CD4+ T cell %T cell on epilepsy



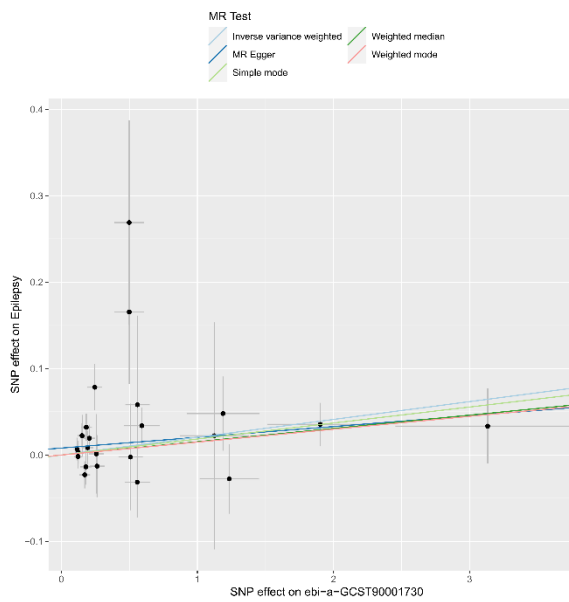
(16) CD28+ CD45RA- CD8dim T cell Absolute Count on epilepsy



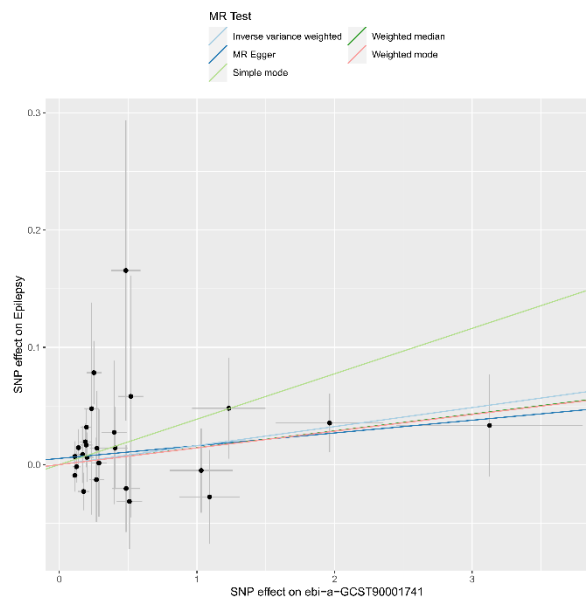
(17) CD28- CD25++ CD8+ T cell Absolute Count on epilepsy



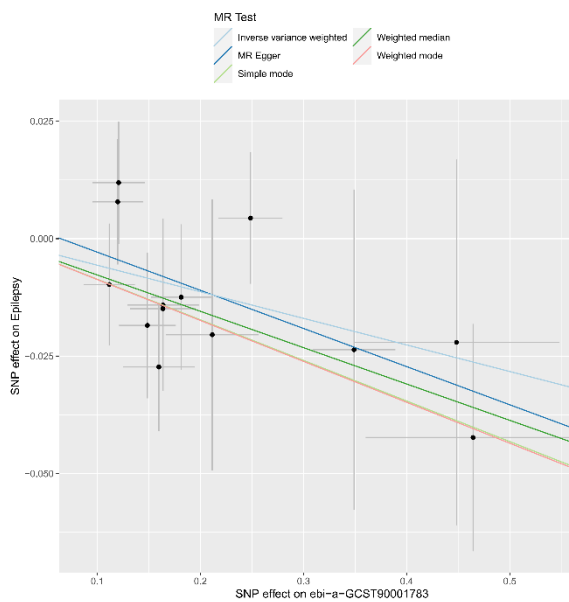
(18) CD19 on IgD+ CD38- B cell on epilepsy



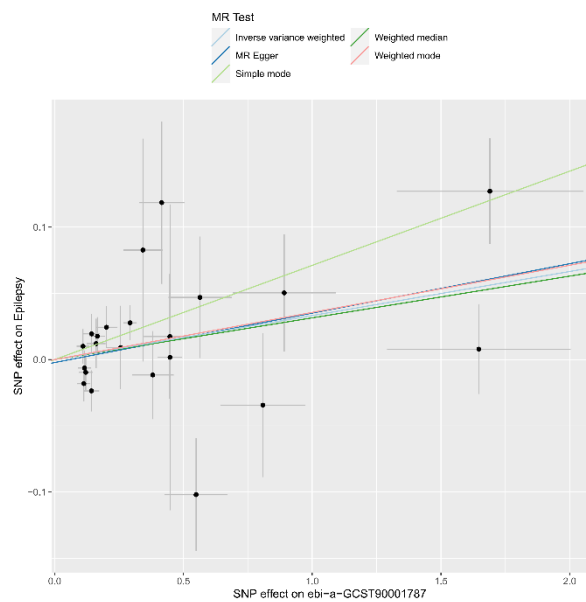
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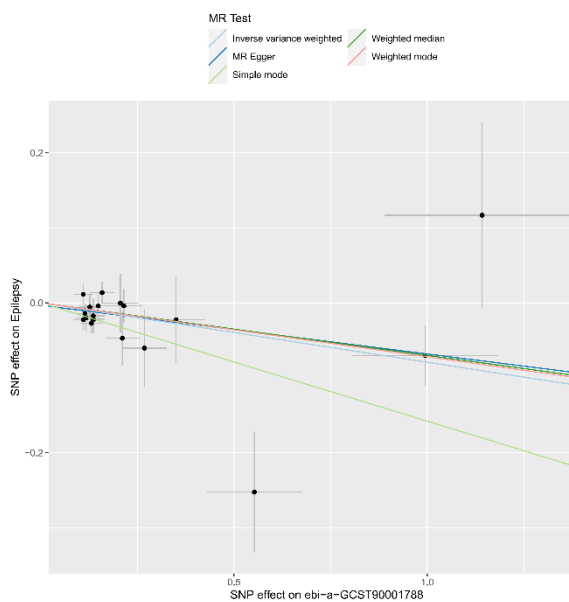
(20) CD19 on IgD+ B cell on epilepsy



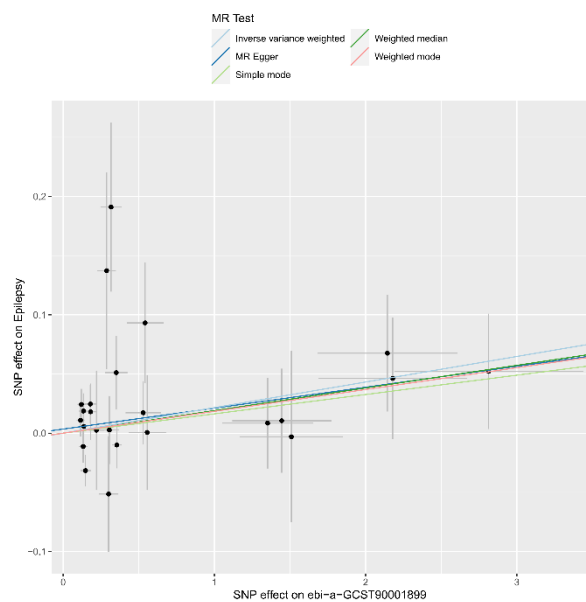
(21) CD25 on IgD+ CD38+ B cell on epilepsy



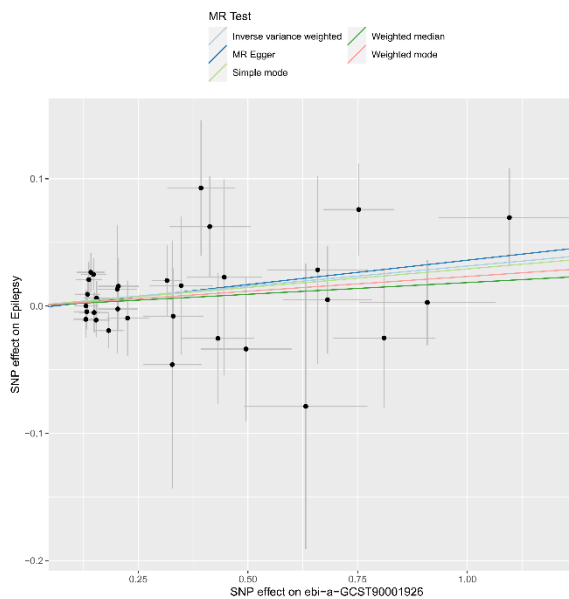
(22) CD25 on IgD- CD38- B cell on epilepsy



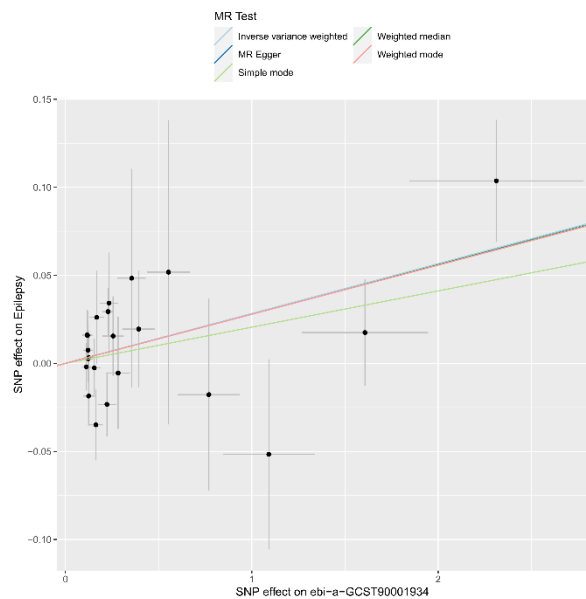
(23) CD25 on IgD- CD38+ B cell on epilepsy



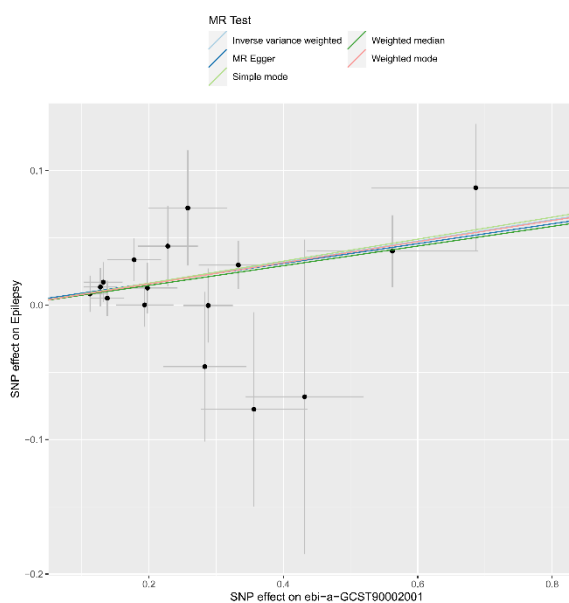
(24) CD28 on CD4 regulatory T cell on epilepsy



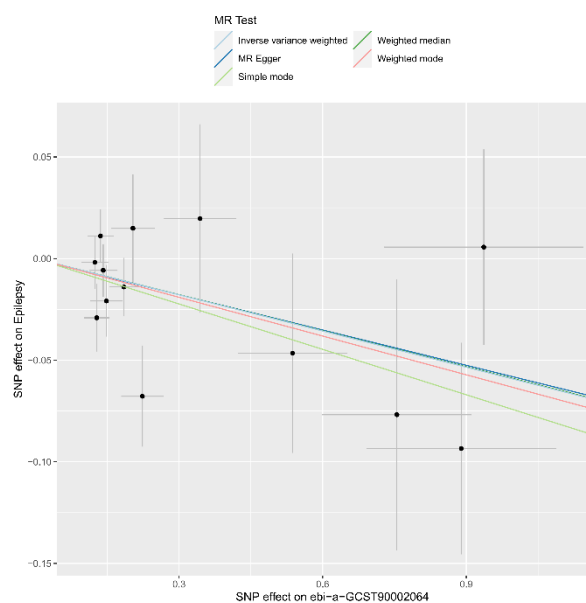
(25) CD127 on granulocyte on epilepsy



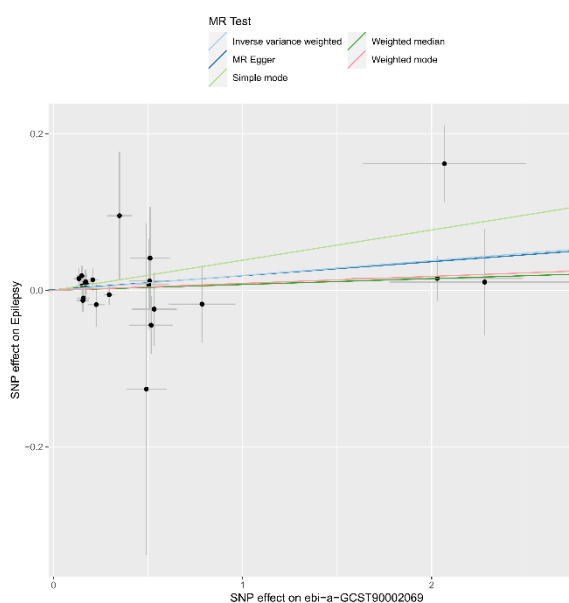
(26) CD25 on CD45RA+ CD4 not regulatory T cell on epilepsy



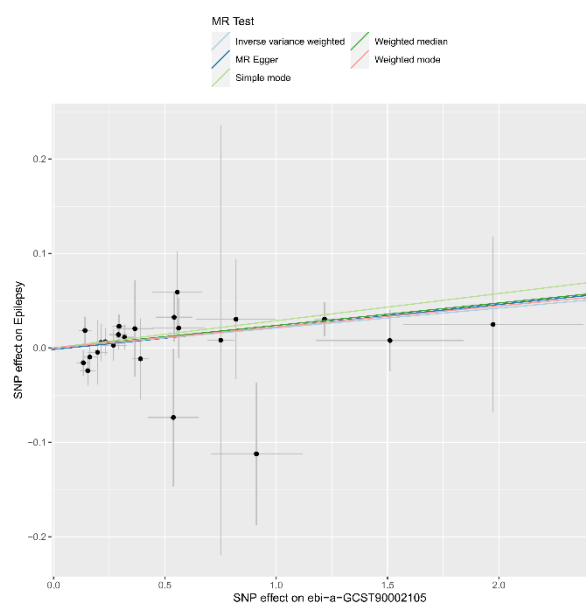
(27) CD64 on CD14- CD16- on epilepsy



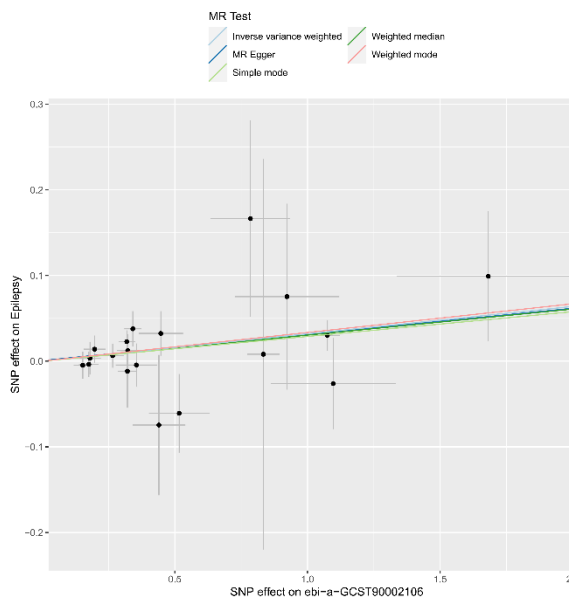
(28) CD4 on resting CD4 regulatory T cell on epilepsy



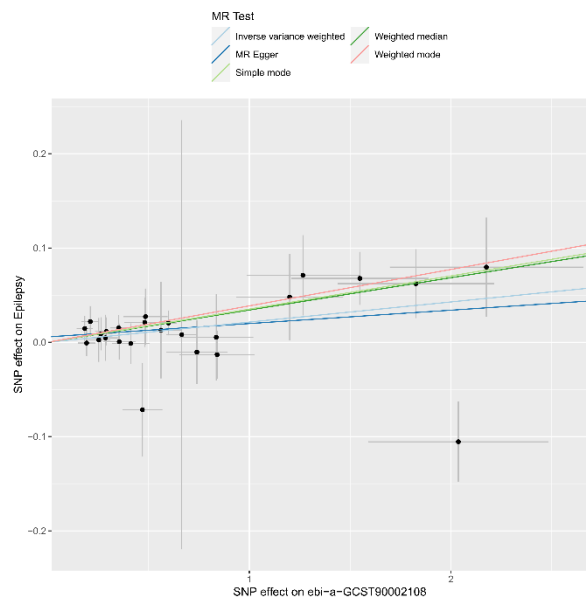
(29) CD4 on CD39+ secreting CD4 regulatory T cell on epilepsy



(30) HLA DR on plasmacytoid Dendritic Cell on epilepsy

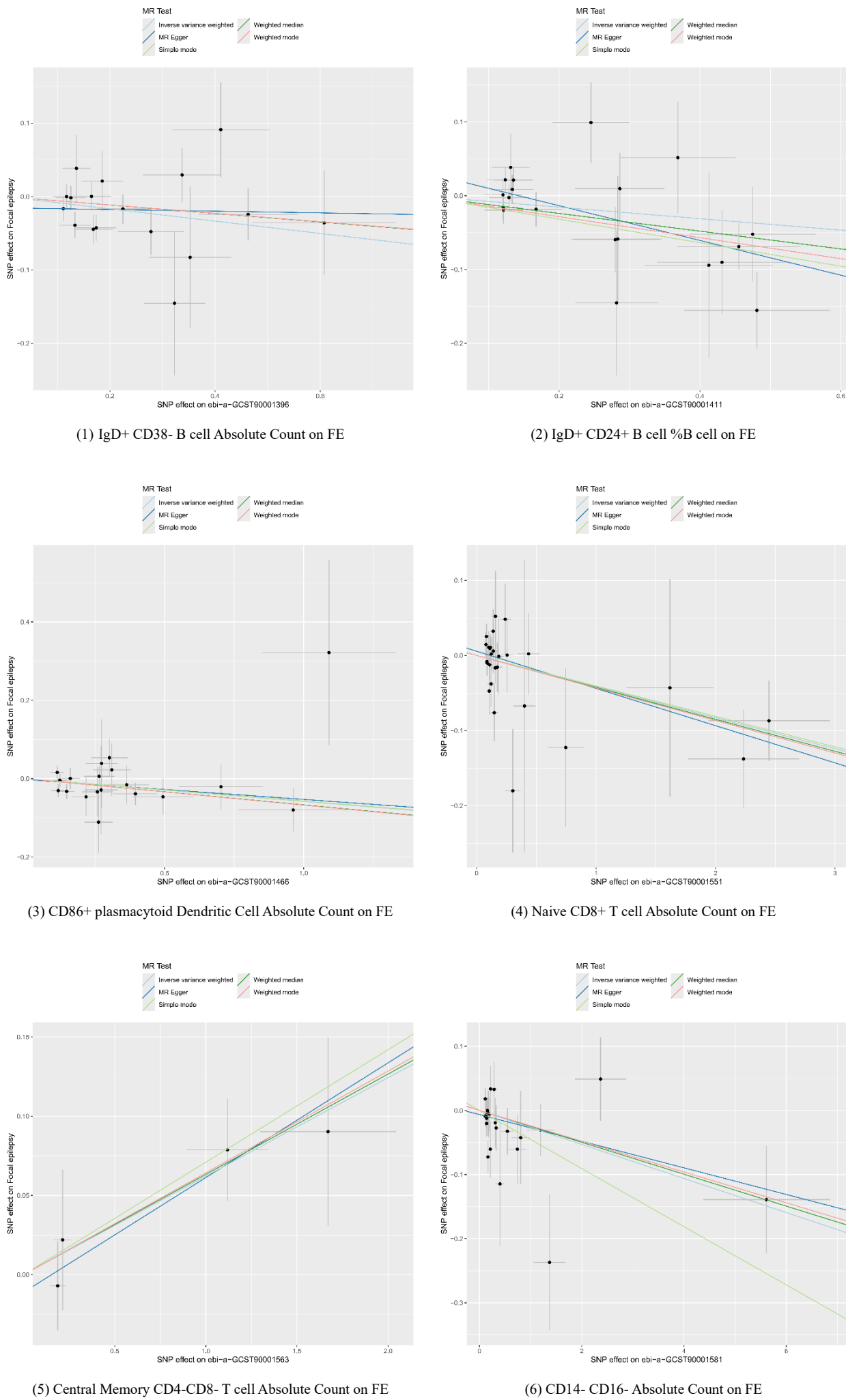


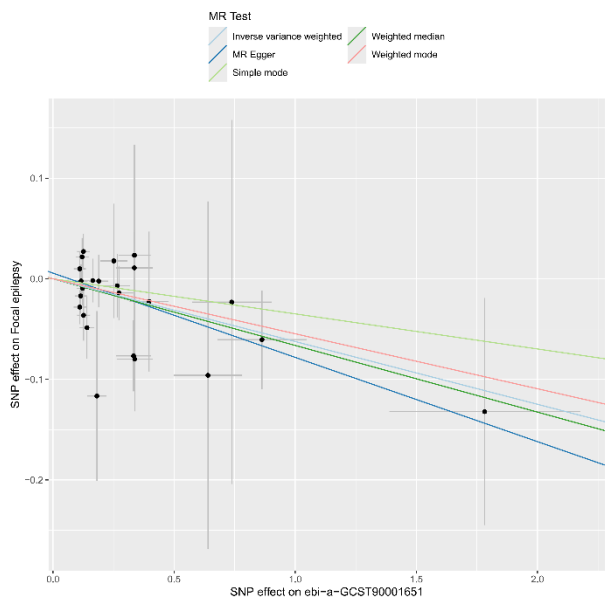
(31) HLA DR on Dendritic Cell on epilepsy



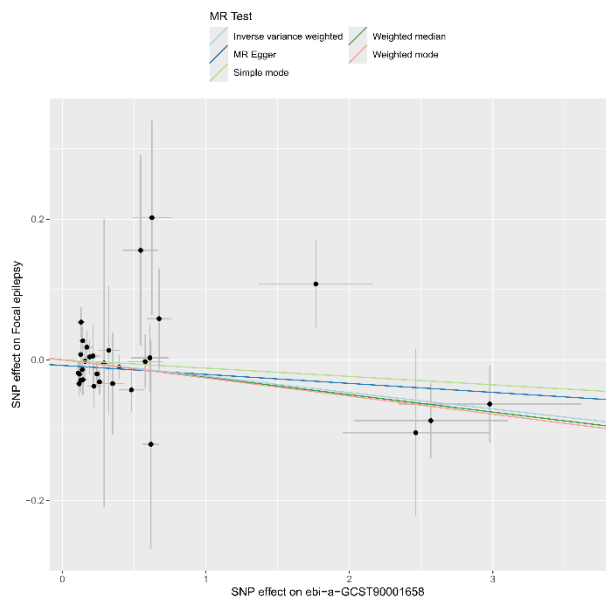
(32) HLA DR on CD33+ HLA DR+ CD14- on epilepsy

Fig. S4. Scatter plots for the effect of immunophenotype on FE. CCR, C-C chemokine receptor; CD, cluster of differentiation; FE, focal epilepsy; HLA DR, human leukocyte antigen-DR isotype; Ig, immunoglobulin; MR, Mendelian randomization; SNP, single nucleotide polymorphism.

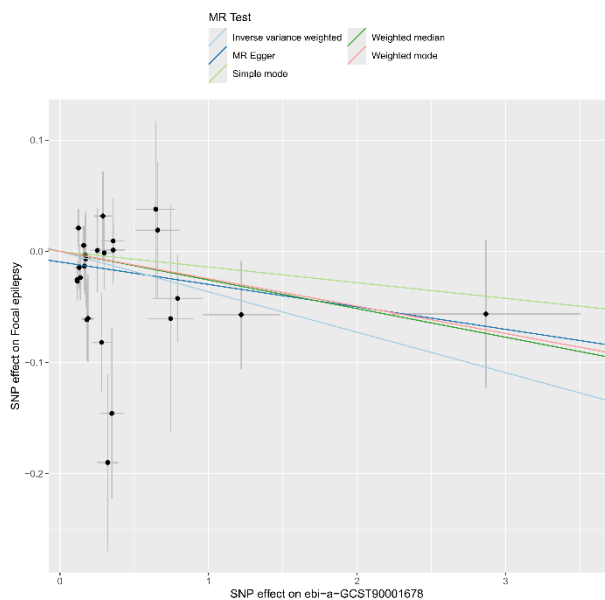




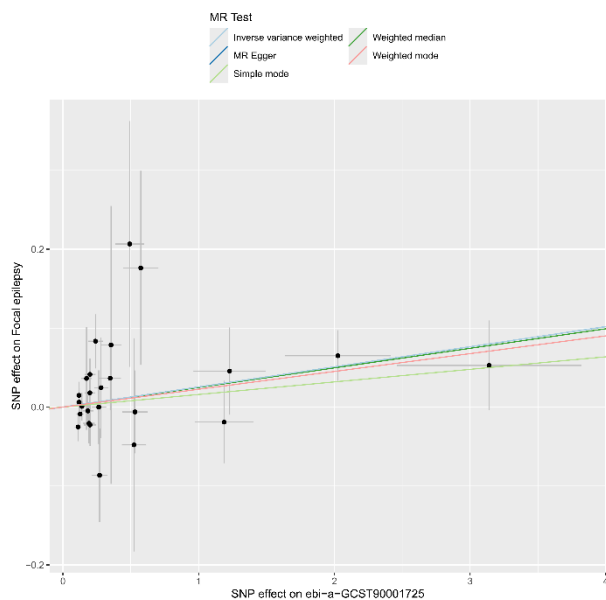
(7) Granulocyte Absolute Count on FE



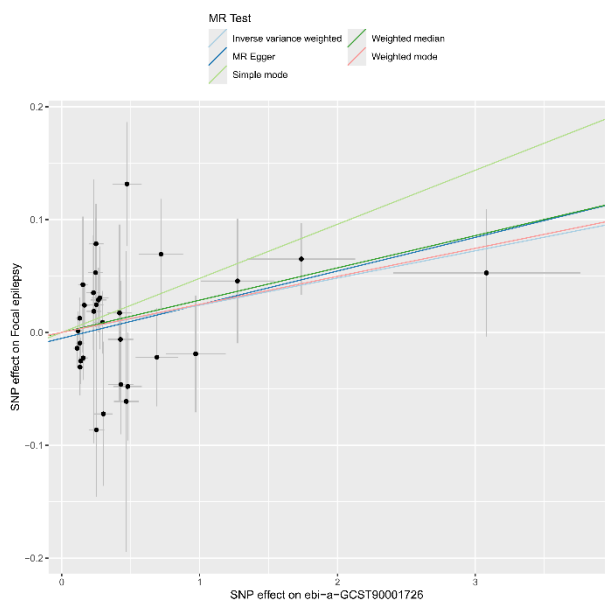
(8) CD39+ CD4+ T cell %T cell on FE



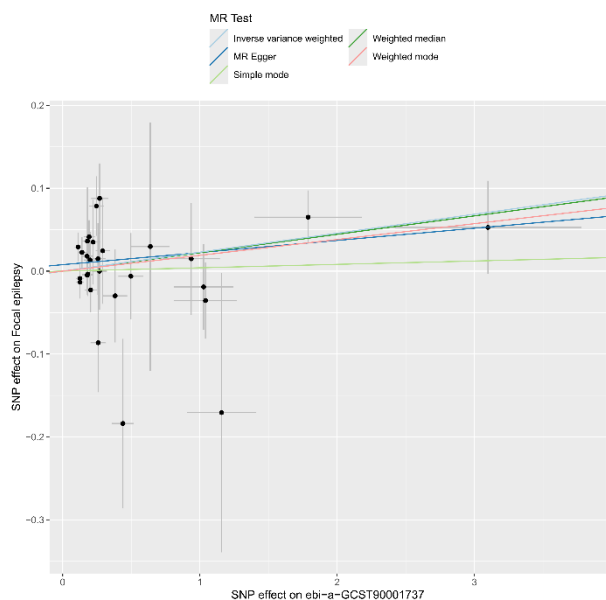
(9) CD28- CD25++ CD8+ T cell Absolute Count on FE



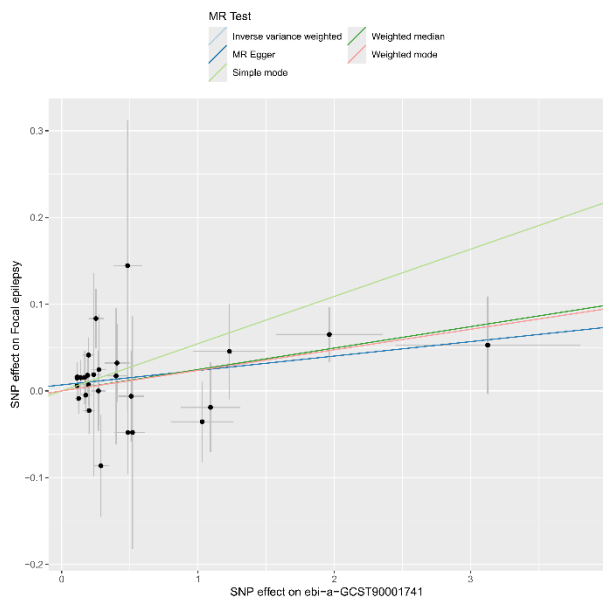
(10) CD19 on IgD+ CD24- B cell on FE



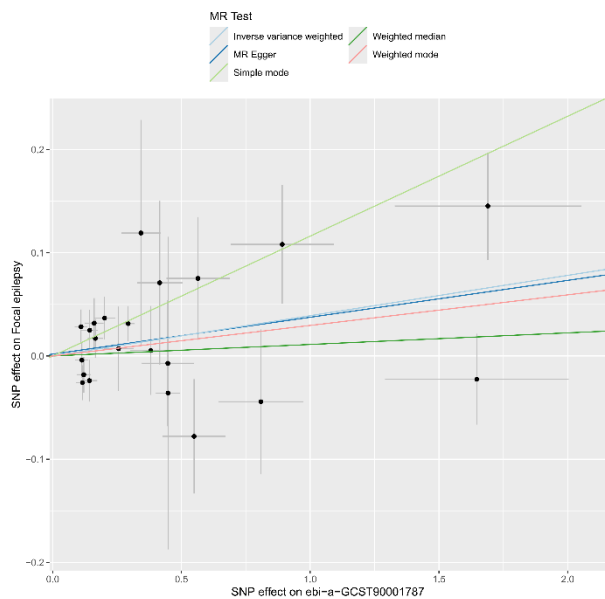
(11) CD19 on IgD+ CD38- B cell on FE



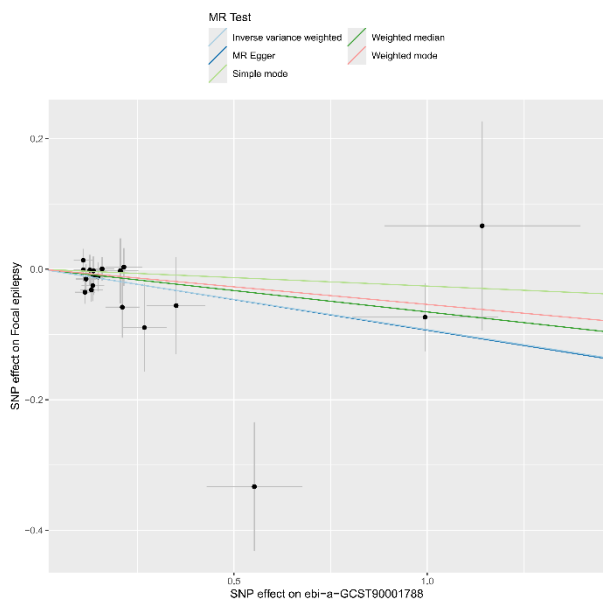
(12) CD19 on naive-mature B cell on FE



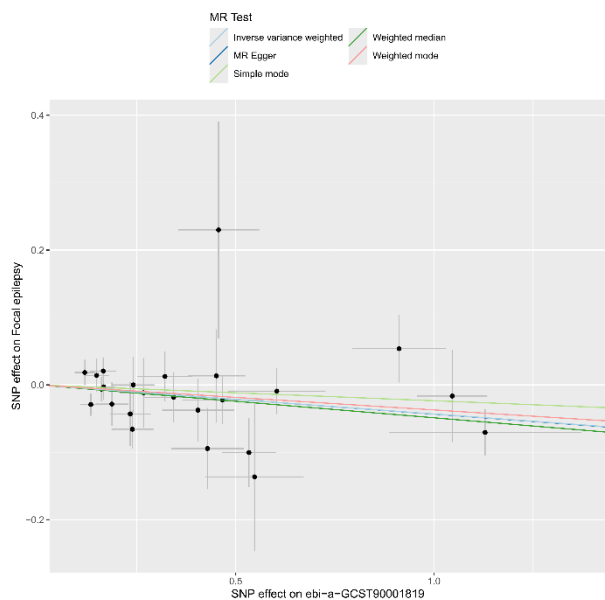
(13) CD19 on IgD+ B cell on FE



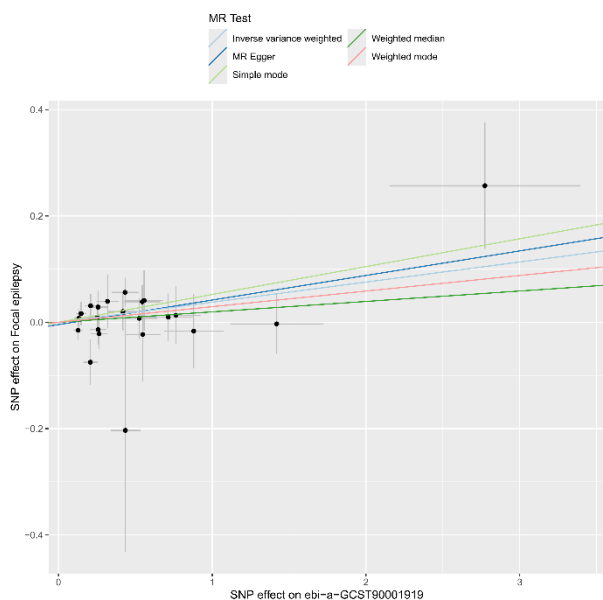
(14) CD25 on IgD- CD38- B cell on FE



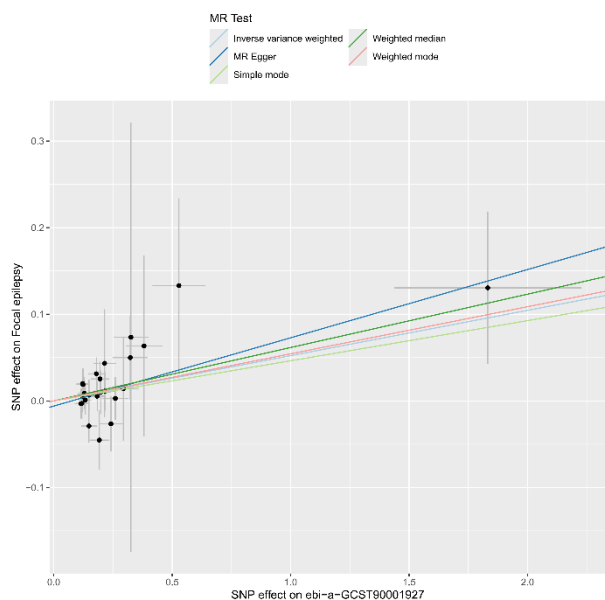
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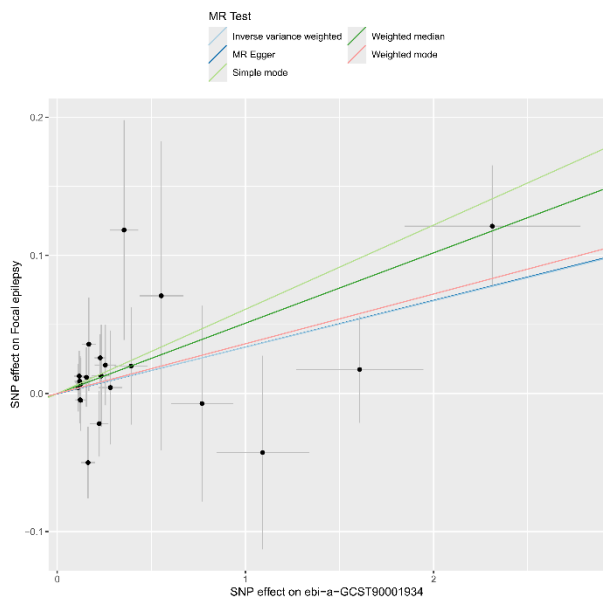
(16) CD38 on transitional B cell on FE



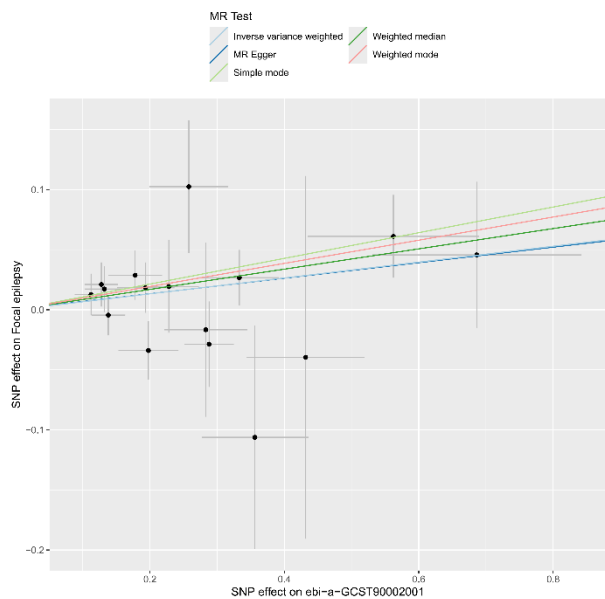
(17) CD45 on Natural Killer T on FE



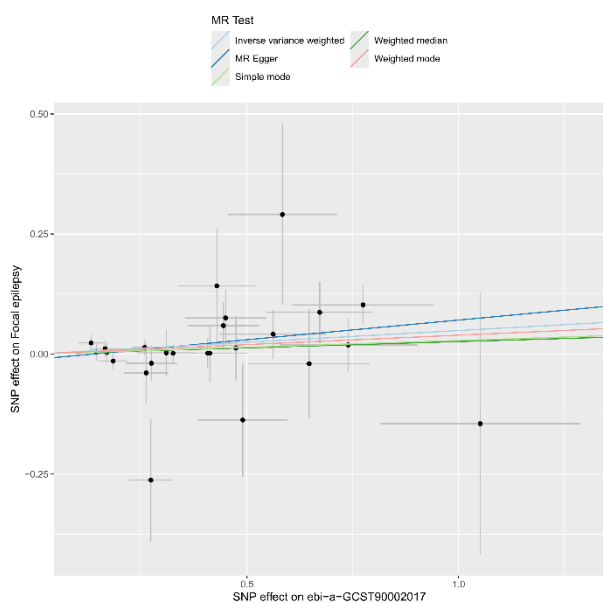
(18) CD127 on CD8+ T cell on FE



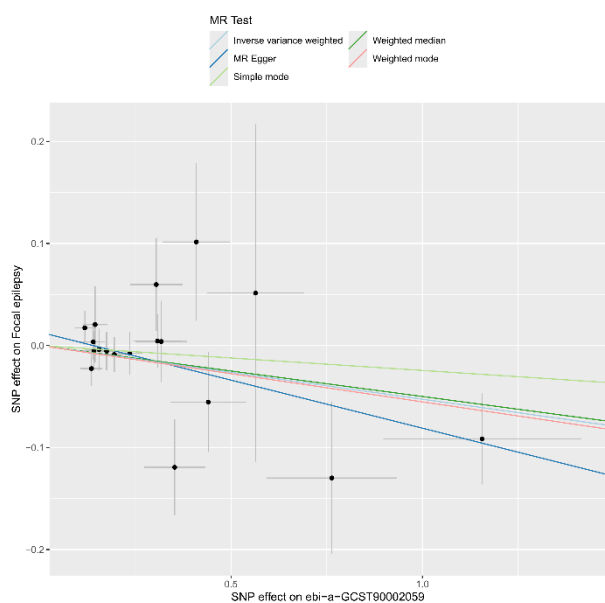
(19) CD25 on CD45RA+ CD4 not regulatory T cell on FE



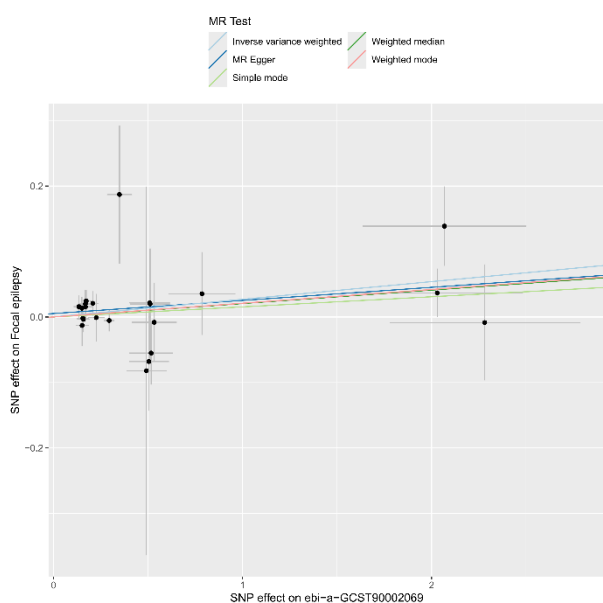
(20) CD64 on CD14- CD16- on FE



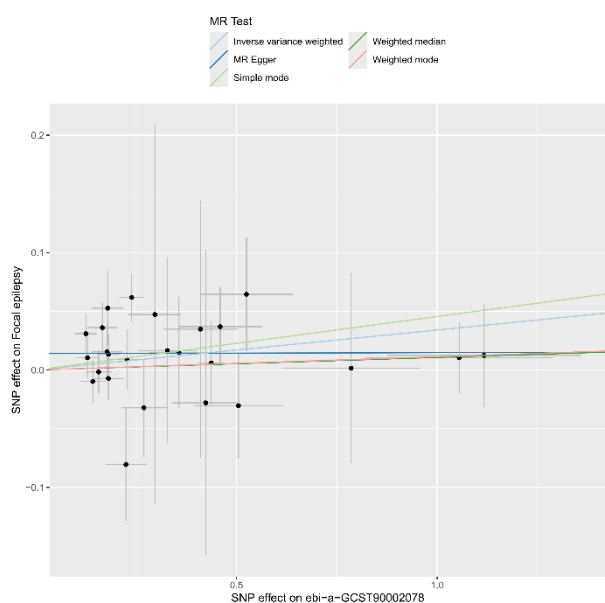
(21) CCR2 on monocyte on FE



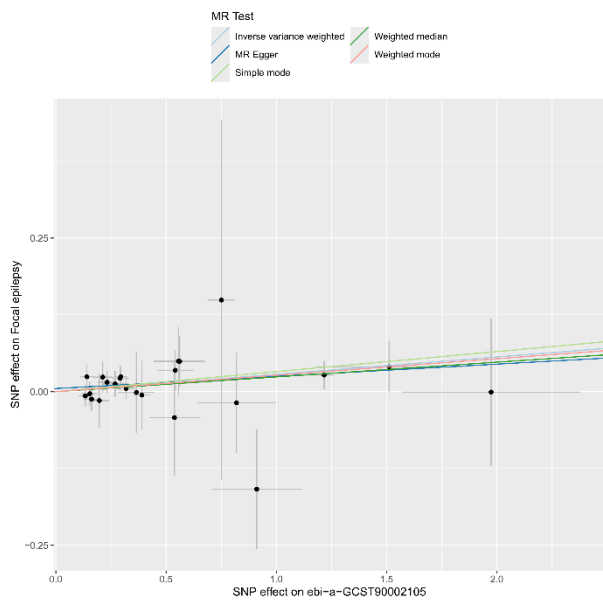
(22) CD8 on Natural Killer T on FE



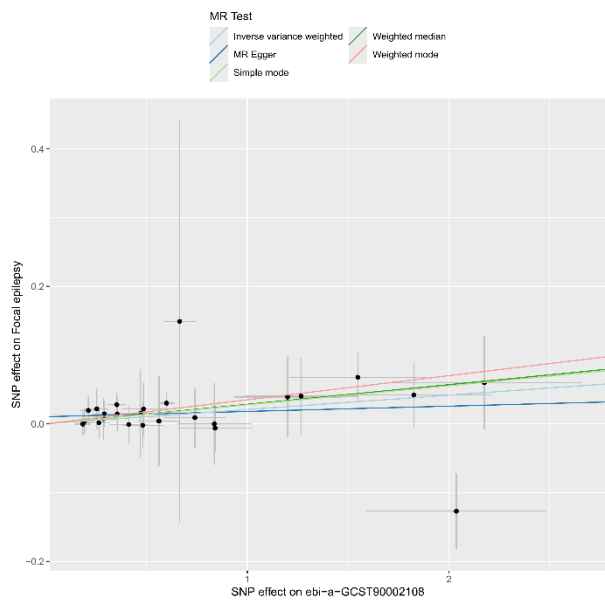
(23) CD4 on CD39+ secreting CD4 regulatory T cell on FE



(24) SSC-A on granulocyte on FE

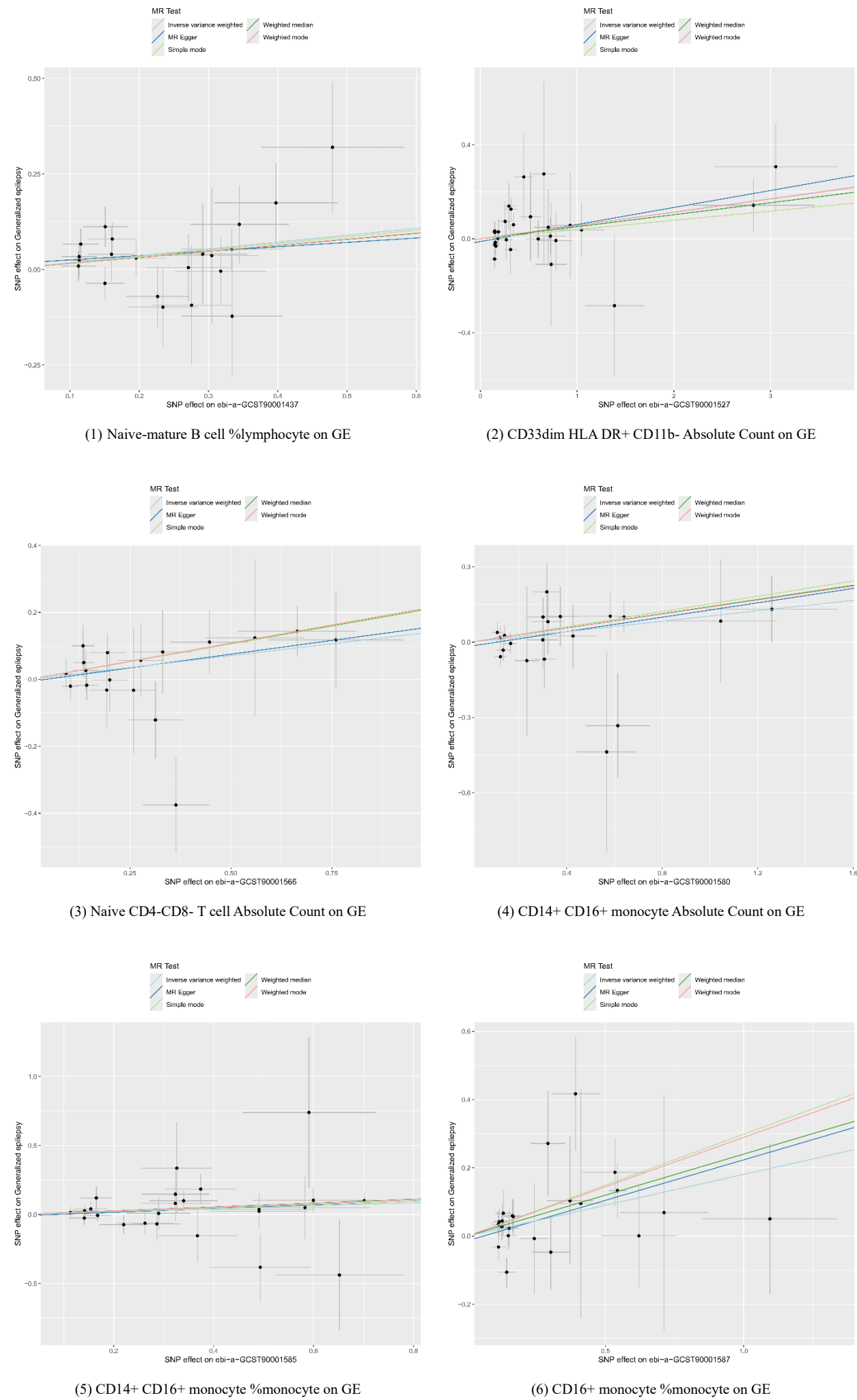


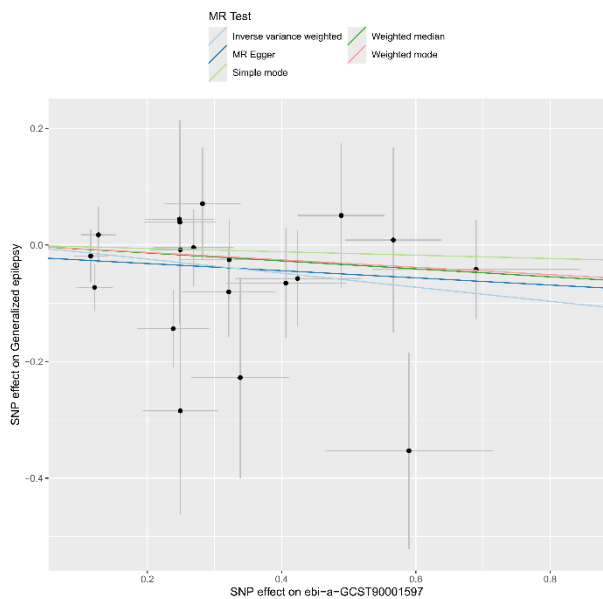
(25) HLA DR on plasmacytoid Dendritic Cell on FE



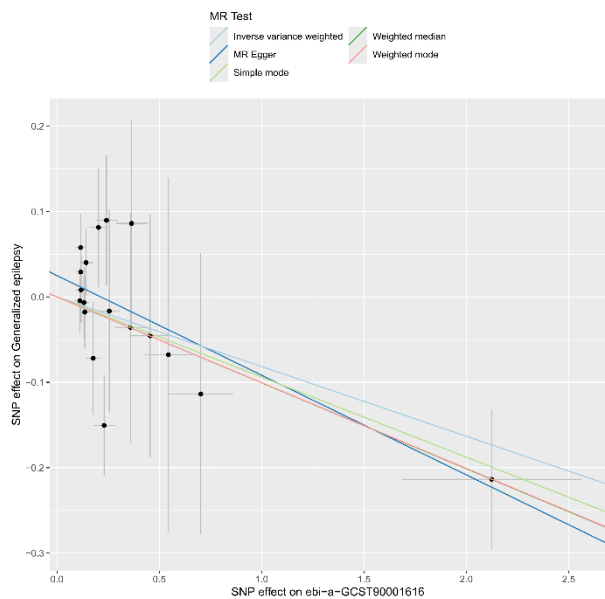
(26) CD25 on CD45RA+ CD4 not regulatory T cell on epilepsy

Fig. S5. Scatter plots for the effect of immunophenotype on GE. CCR, C-C chemokine receptor; CD, cluster of differentiation; FSC-A, forward scatter area; GE, generalized epilepsy; HLA DR, human leukocyte antigen-DR isotype; MR, Mendelian randomization; SNP, single nucleotide polymorphism; TCR, T cell receptor.

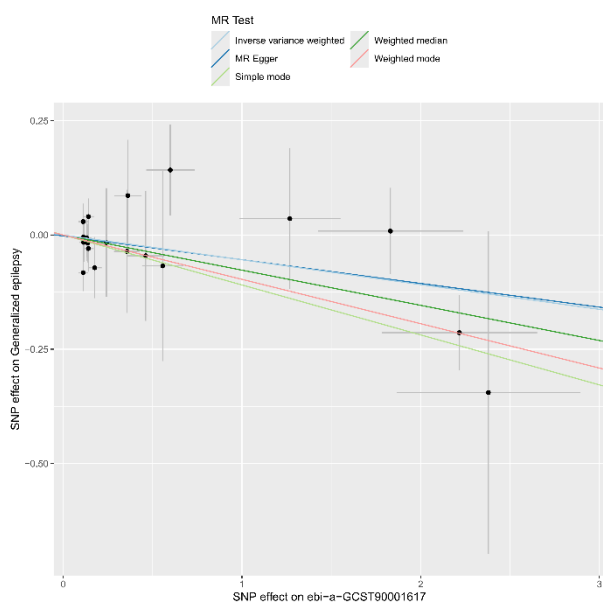




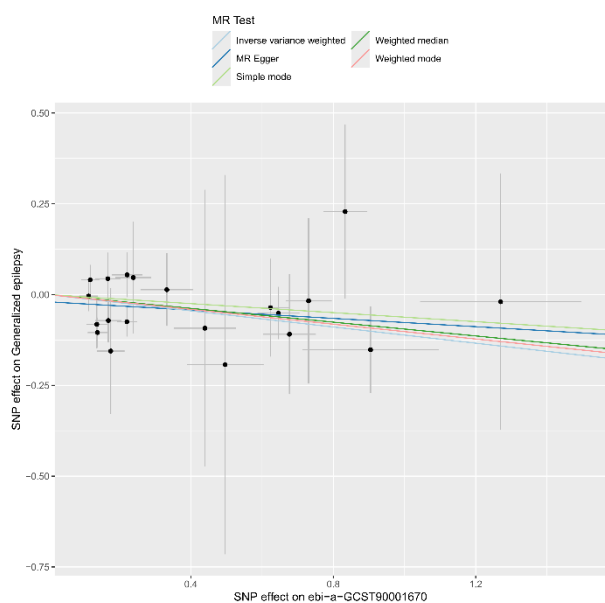
(7) CD8dim T cell %T cell on GE



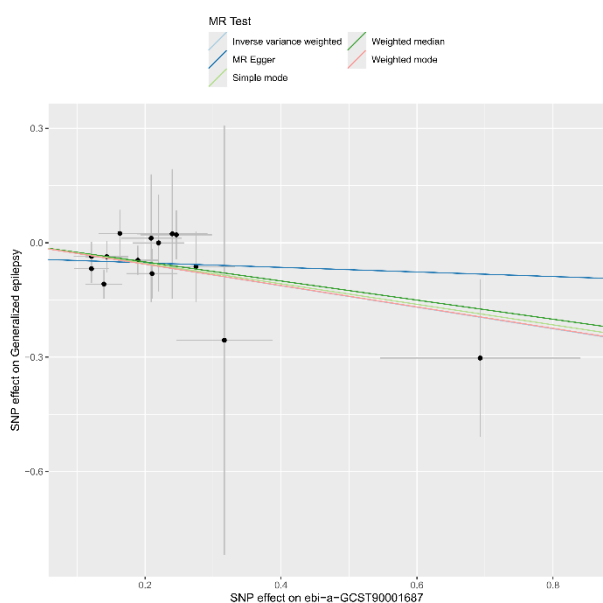
(8) TCRgd T cell %T cell on GE



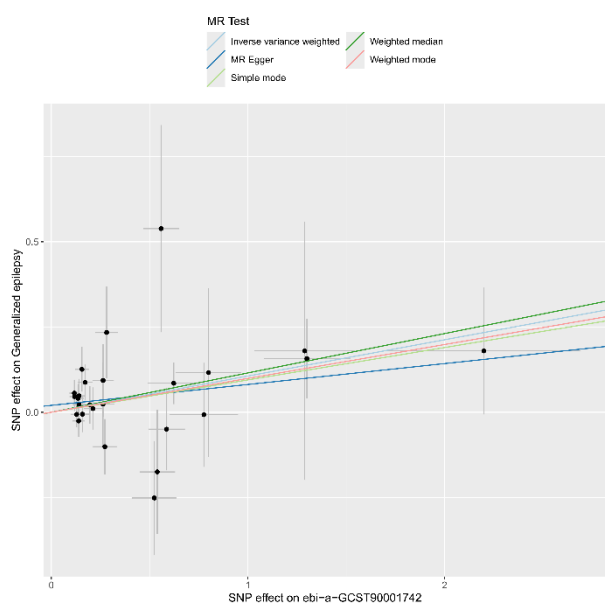
(9) TCRgd T cell %lymphocyte on GE



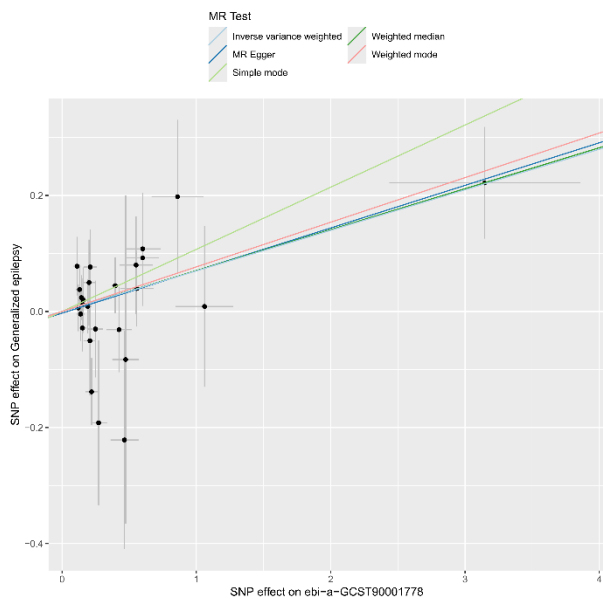
(10) CD39+ CD8+ T cell %T cell on GE



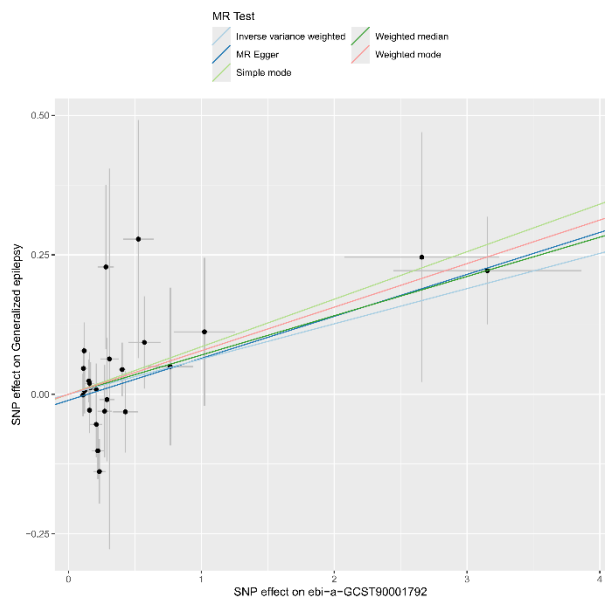
(11) CD28- CD8+ T cell Absolute Count on GE



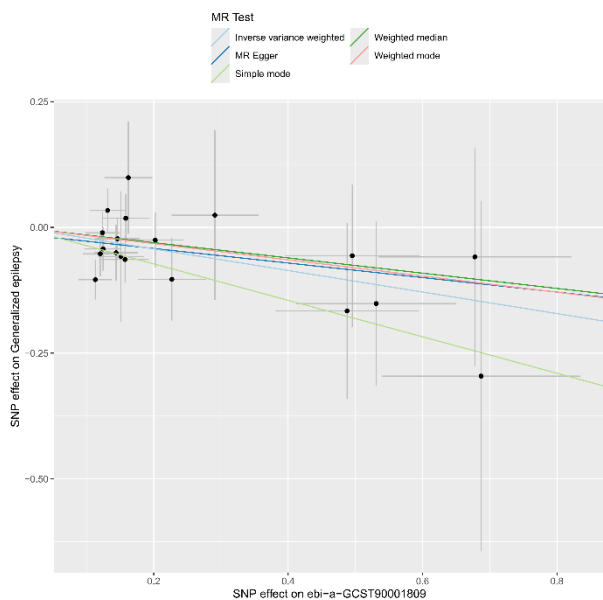
(12) CD19 on transitional B cell on GE



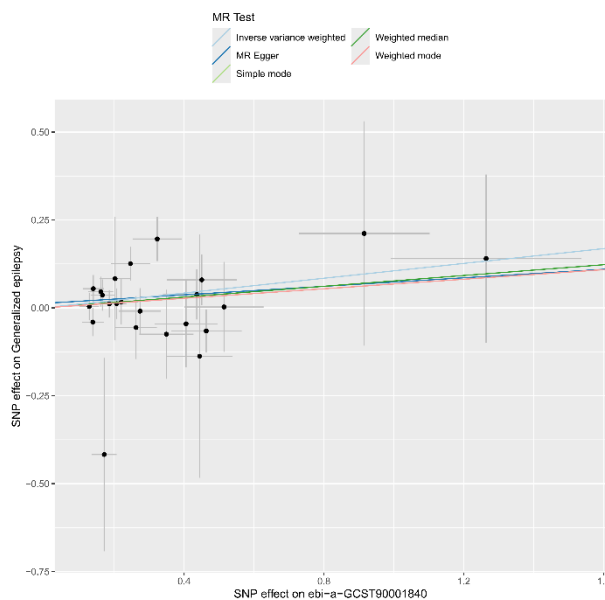
(13) CD25 on IgD+ CD24+ B cell on GE



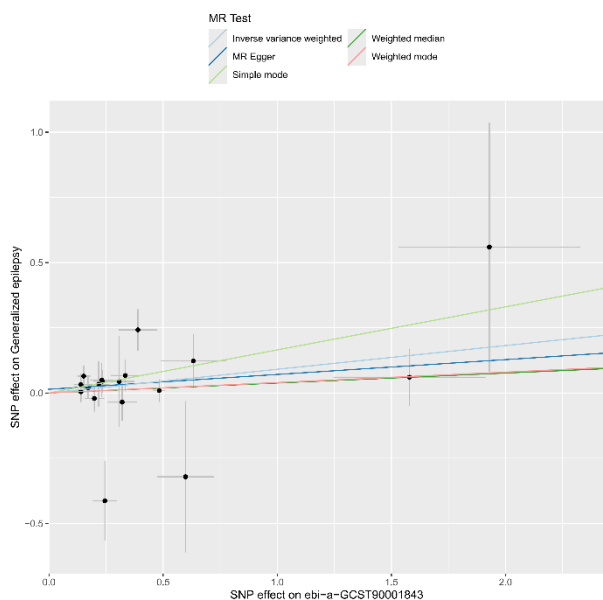
(14) CD25 on unswitched memory B cell on GE



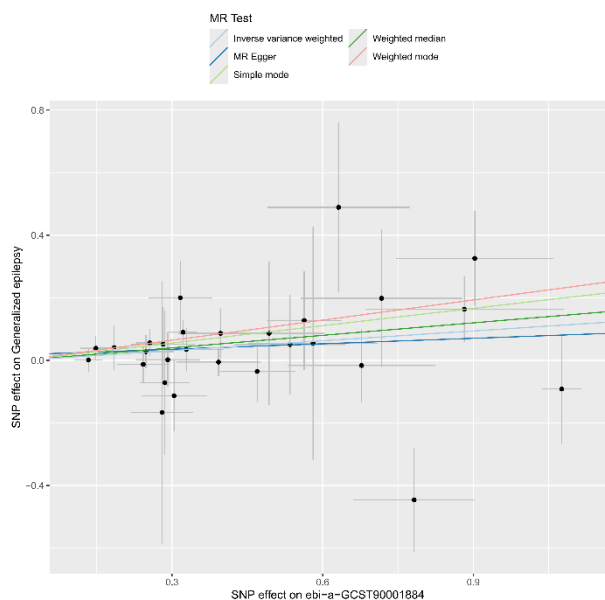
(15) CD38 on CD20- B cell on GE



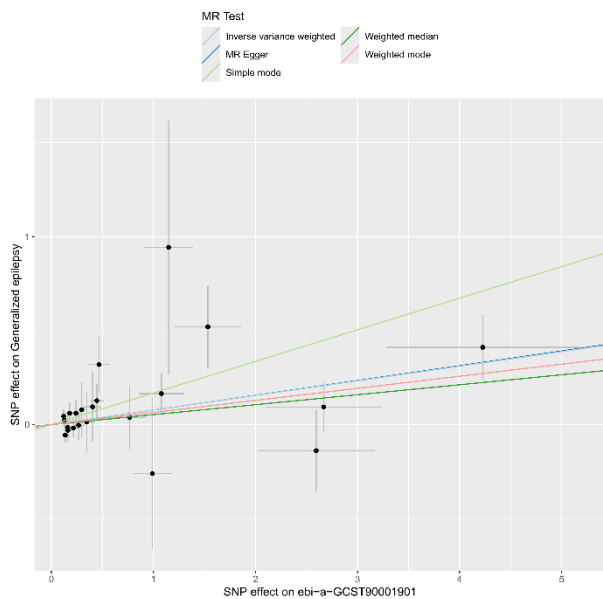
(16) CD3 on Terminally Differentiated CD8+ T cell on GE



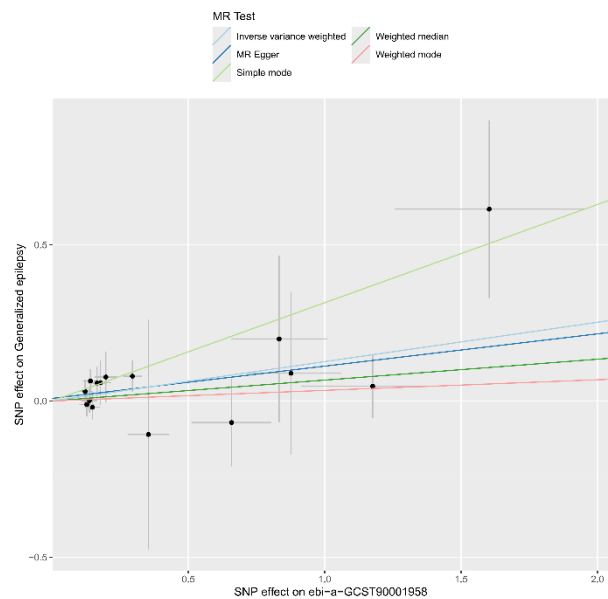
(17) CD3 on Effector Memory CD4+ T cell on GE



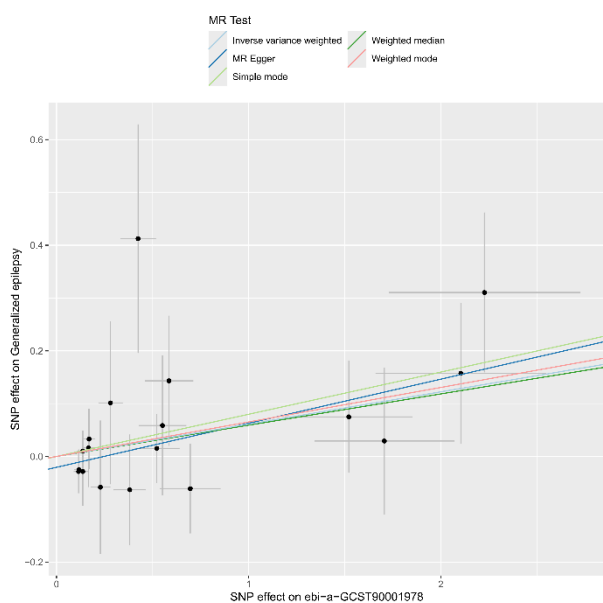
(18) CD16-CD56 on Natural Killer on GE



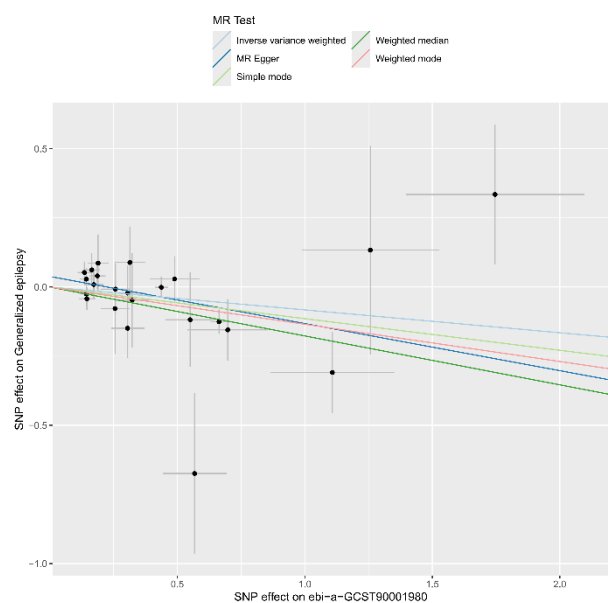
(19) CD28 on CD39+ resting CD4 regulatory T cell on GE



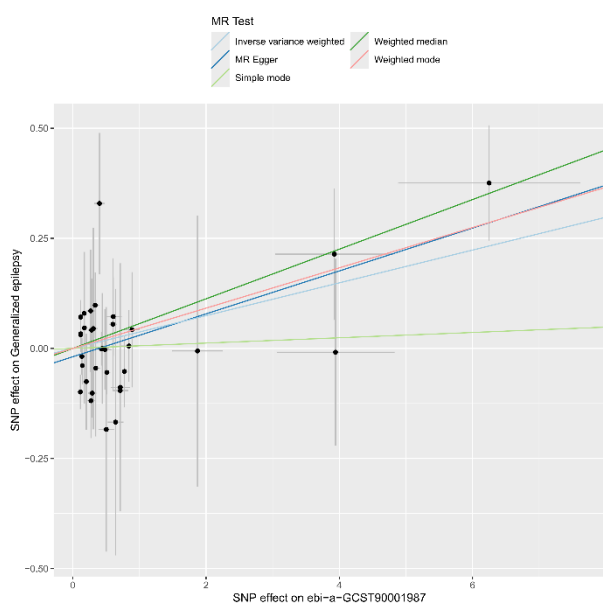
(20) CD4 on monocyte on GE



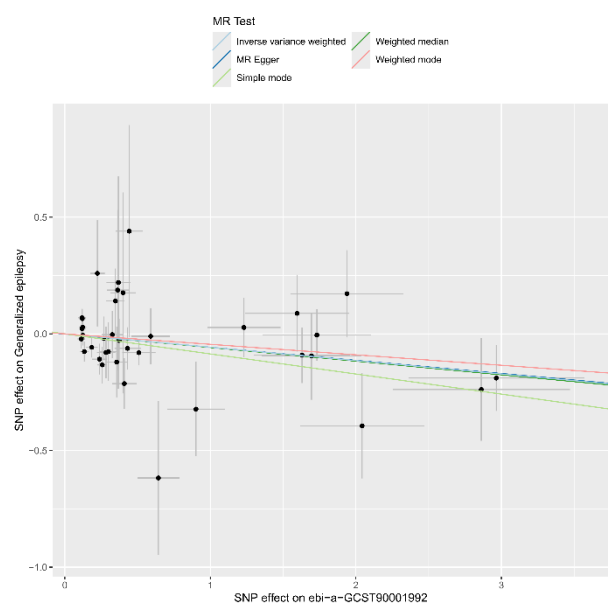
(21) FSC-A on HLA DR+ CD8+ T cell on GE



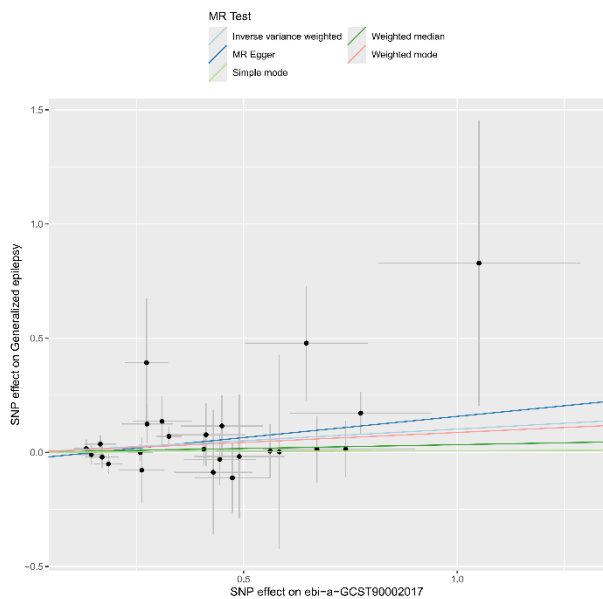
(22) CD40 on CD14+ CD16- monocyte on GE



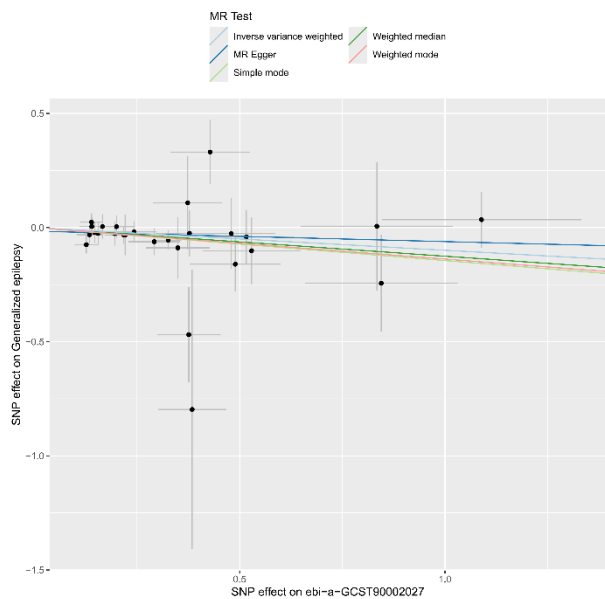
(23) CD64 on CD14+ CD16- monocyte on GE



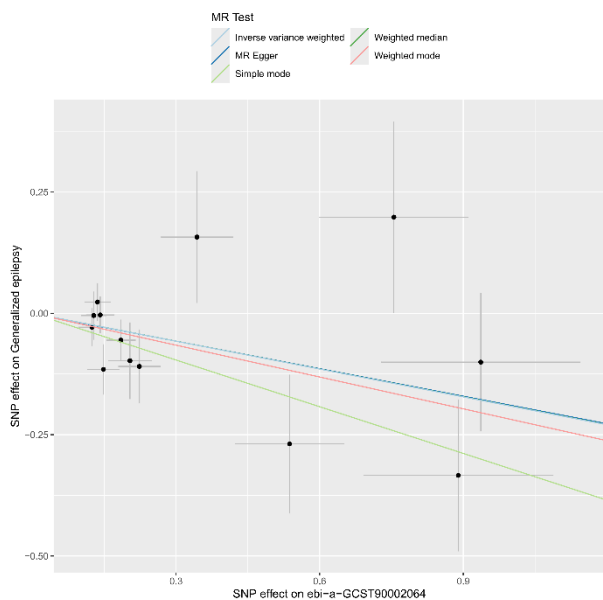
(24) CCR2 on CD14+ CD16+ monocyte on GE



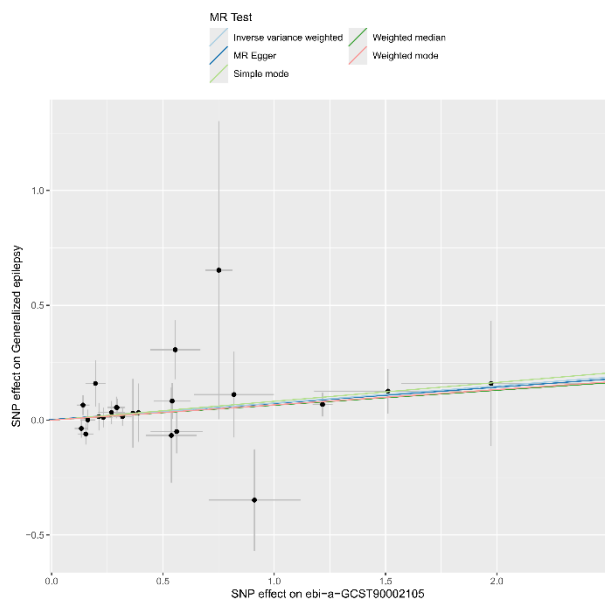
(25) CCR2 on monocyte on GE



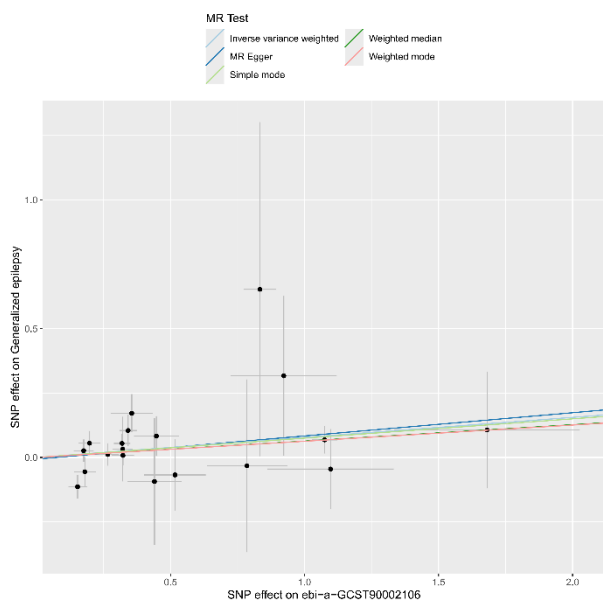
(26) CD4 on CD45RA+ CD4+ T cell on GE



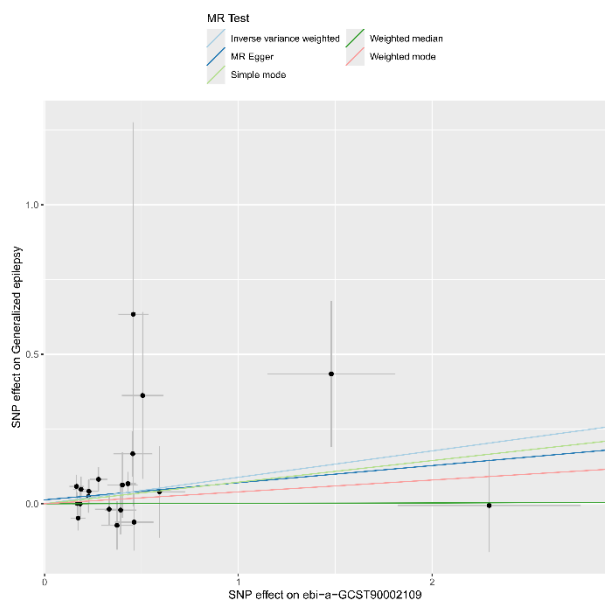
(27) CD4 on resting CD4 regulatory T cell on GE



(28) HLA DR on plasmacytoid Dendritic Cell on GE

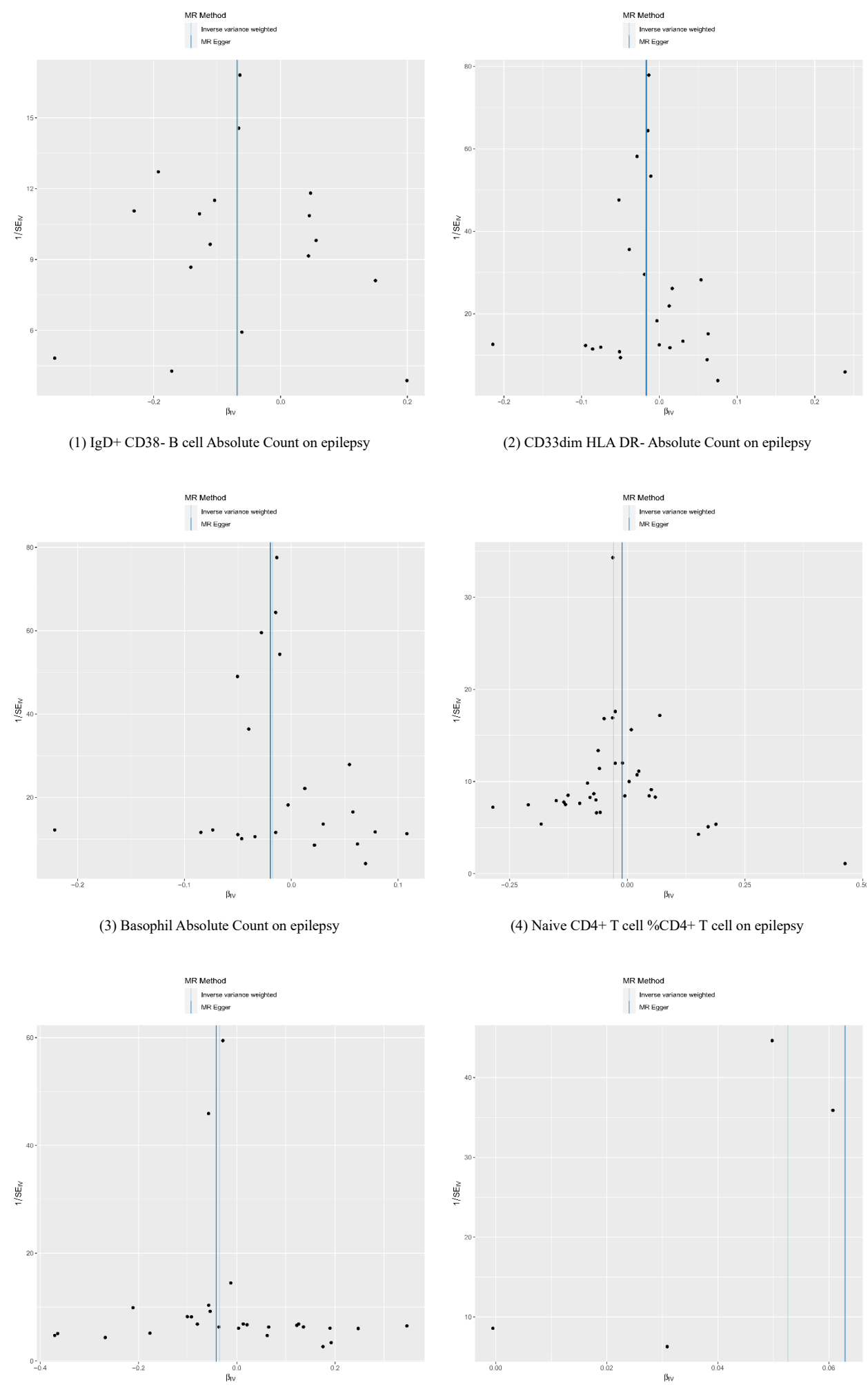


(29) HLA DR on Dendritic Cell on GE

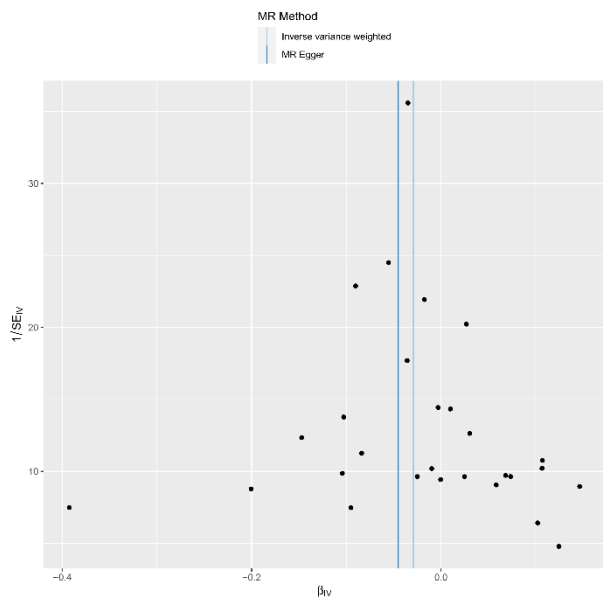


(30) HLA DR on CD33+ HLA DR+ CD14dim on GE

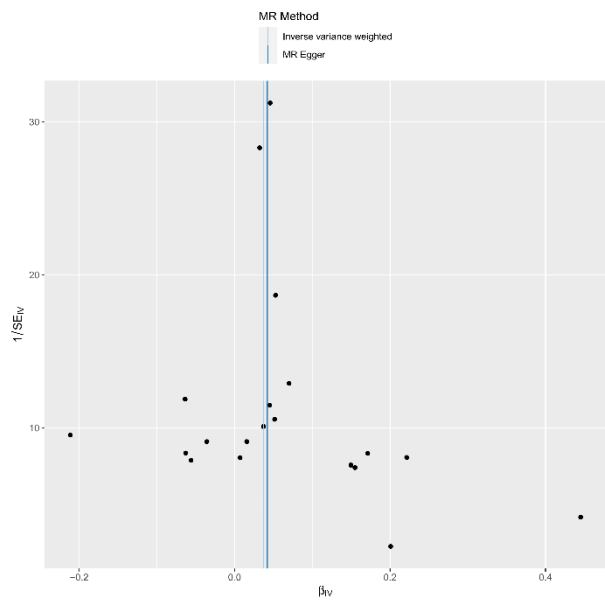
Fig. S6. Funnel plots for the effect of immunophenotype on epilepsy. CD, cluster of differentiation; HLA DR, human leukocyte antigen-DR isotype; Ig, immunoglobulin; MR, Mendelian randomization; SE, standard error.



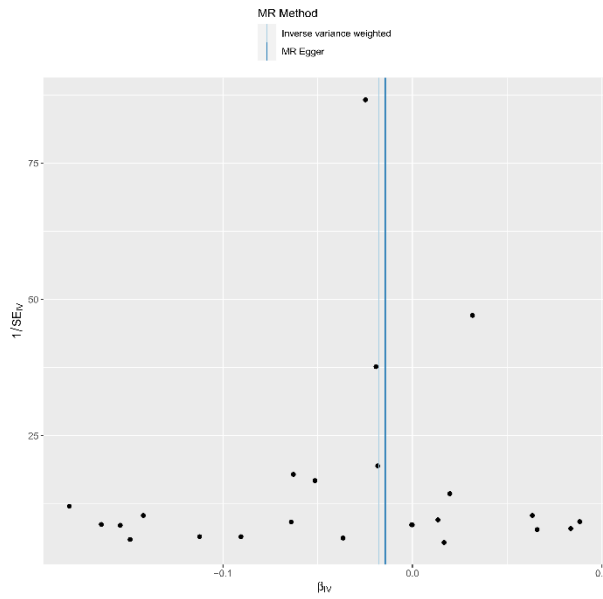
(5) Naive CD8+ T cell Absolute Count on epilepsy



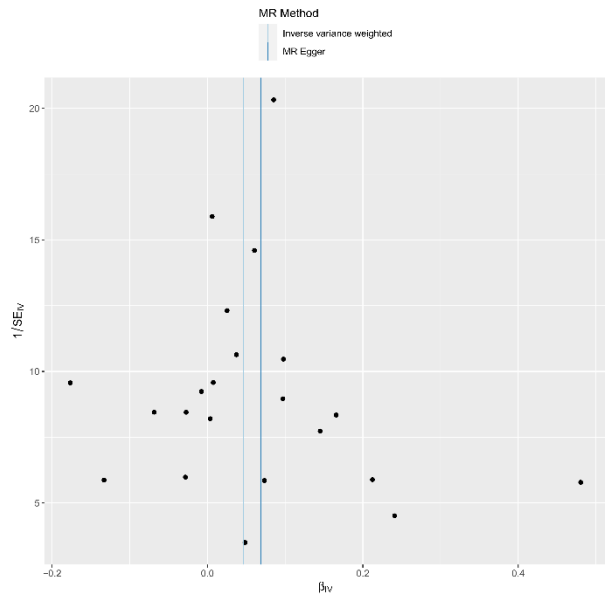
(6) Central Memory CD4-CD8- T cell Absolute Count on epilepsy



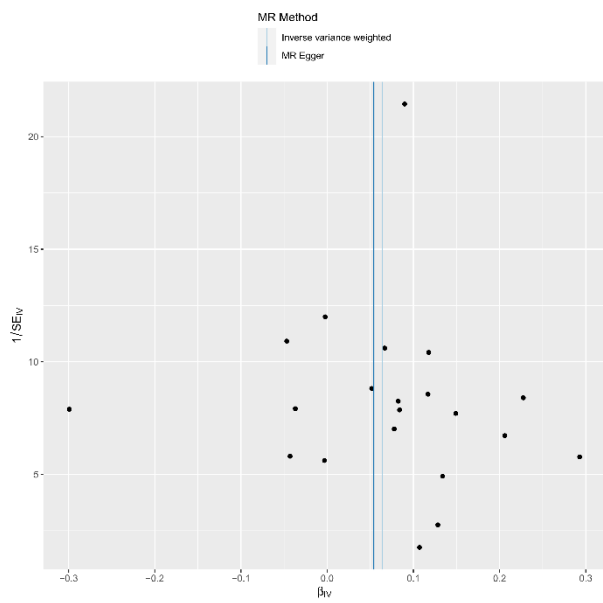
(7) Effector Memory CD4-CD8- T cell %CD4-CD8- T cell on epilepsy



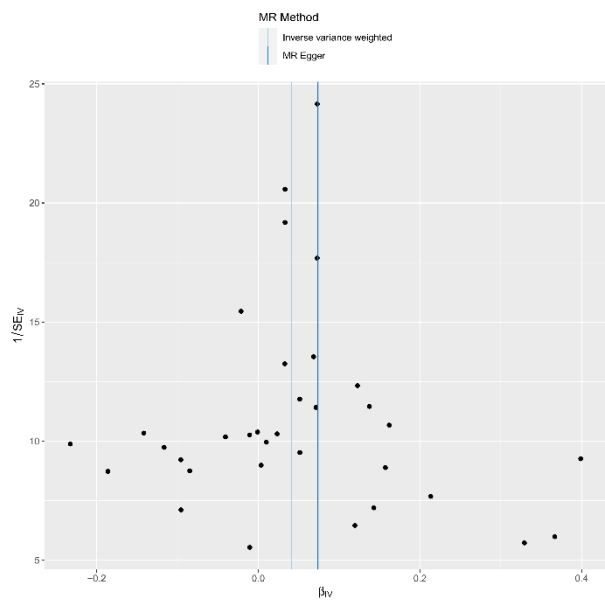
(8) CD14+ CD16+ monocyte Absolute Count on epilepsy



(9) CD14- CD16- Absolute Count on epilepsy



(10) CD16+ monocyte %monocyte on epilepsy

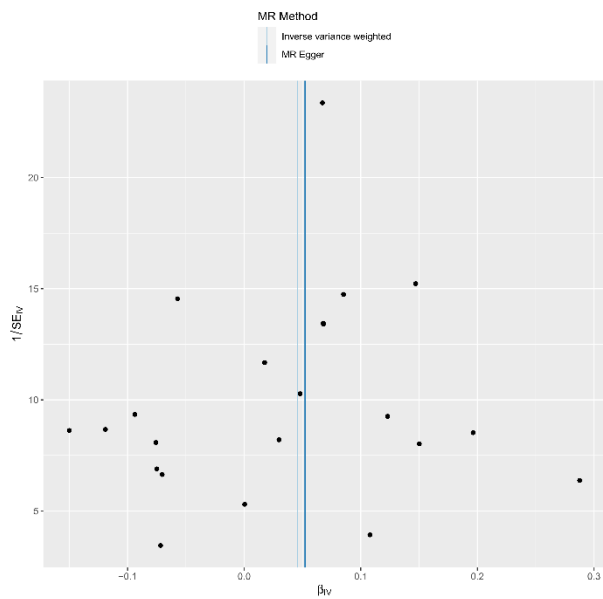


(11) HLA DR+ CD4+ T cell %lymphocyte on epilepsy

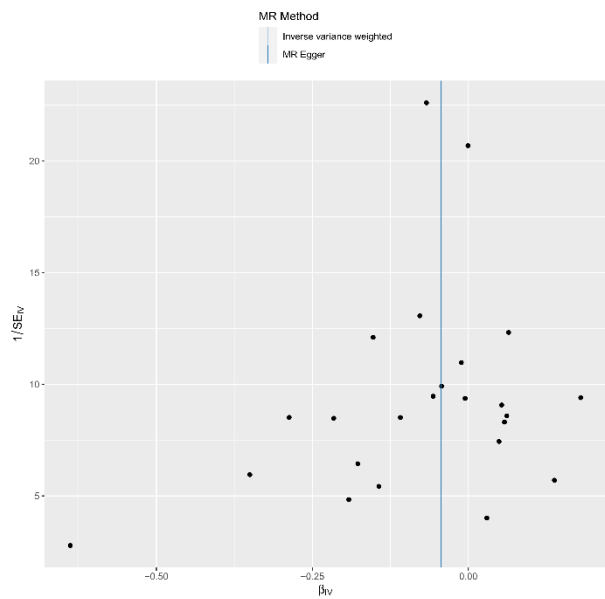


(12) B cell %lymphocyte on epilepsy

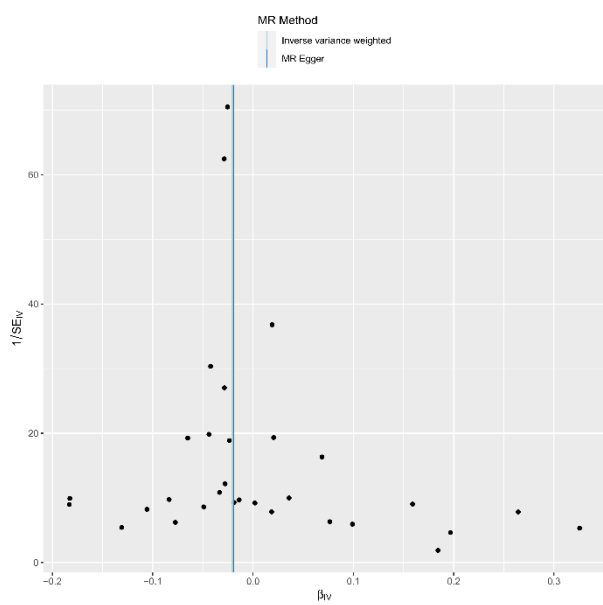




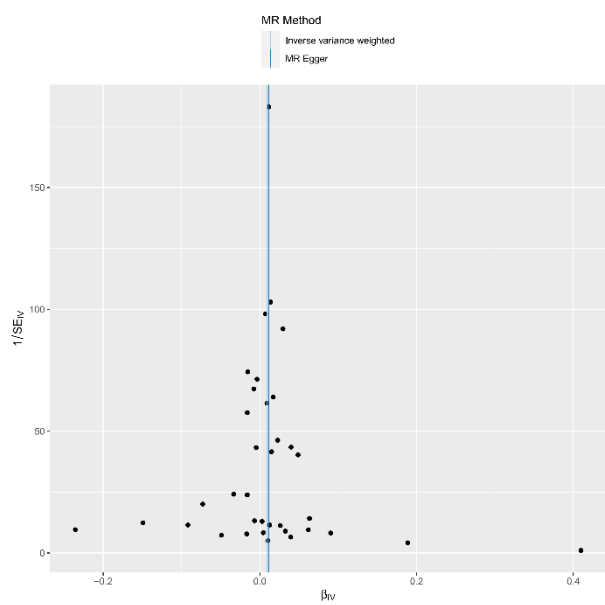
(13) Natural Killer Absolute Count on epilepsy



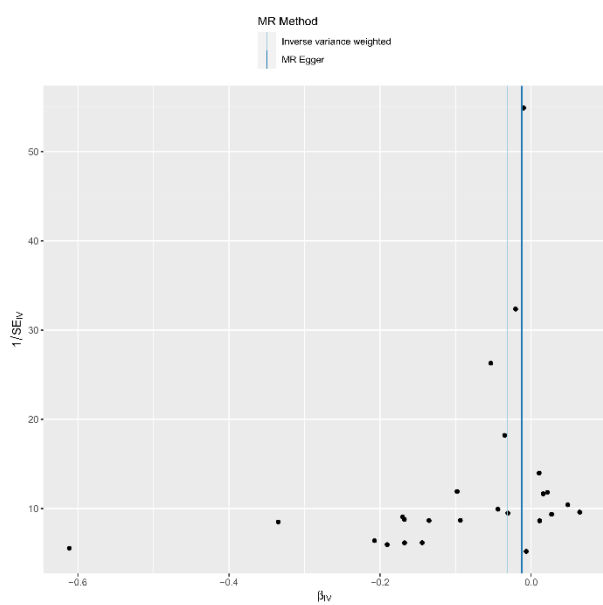
(14) Granulocyte Absolute Count on epilepsy



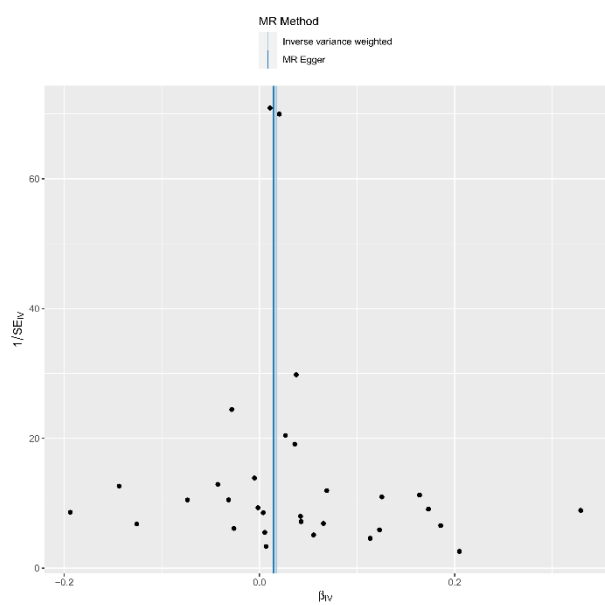
(15) CD39+ CD4+ T cell %T cell on epilepsy



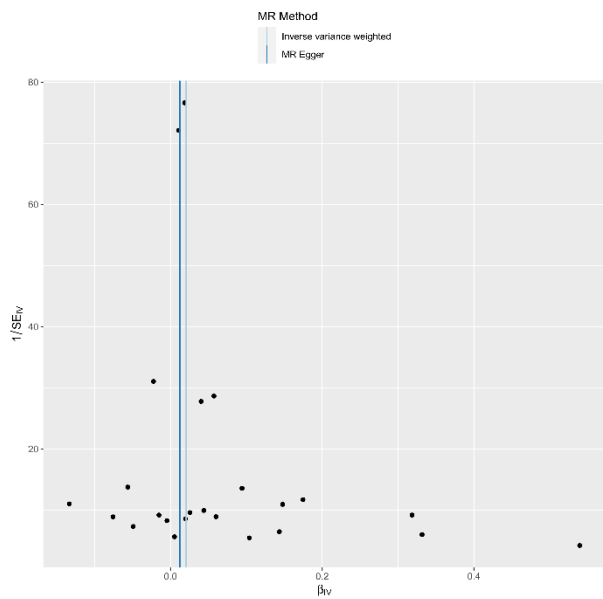
(16) CD28+ CD45RA- CD8dim T cell Absolute Count on epilepsy



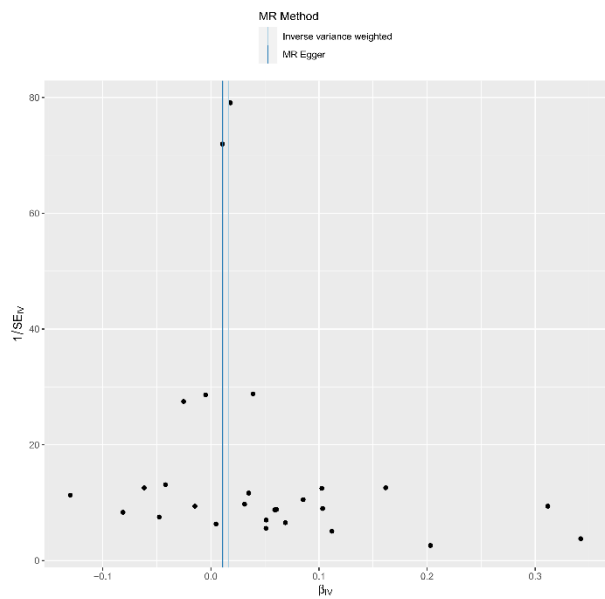
(17) CD28- CD25++ CD8+ T cell Absolute Count on epilepsy



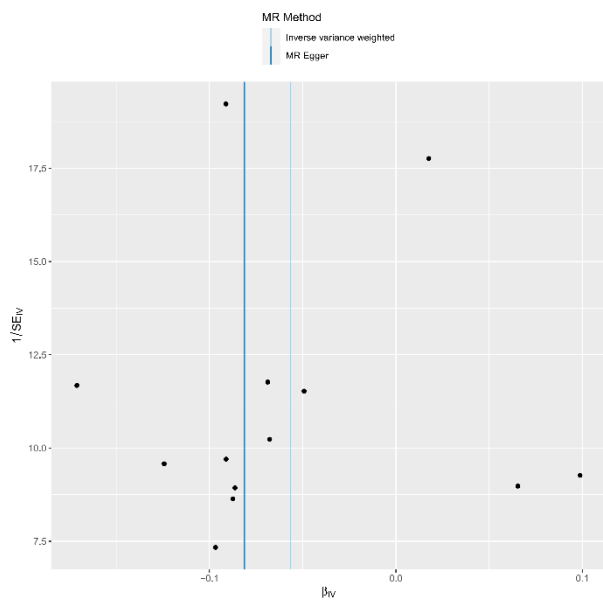
(18) CD19 on IgD+ CD38- B cell on epilepsy



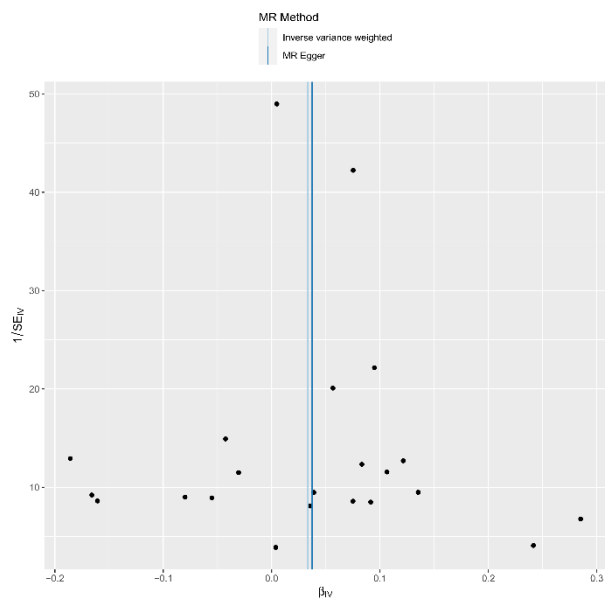
(19) CD19 on IgD+ CD38dim B cell on epilepsy



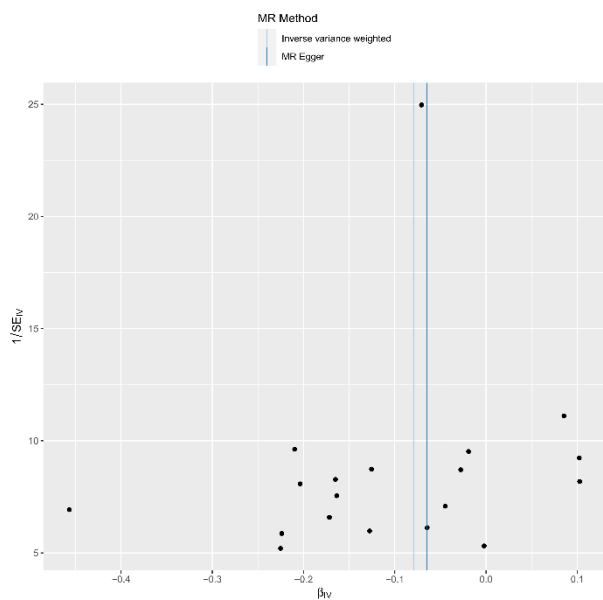
(20) CD19 on IgD+ B cell on epilepsy



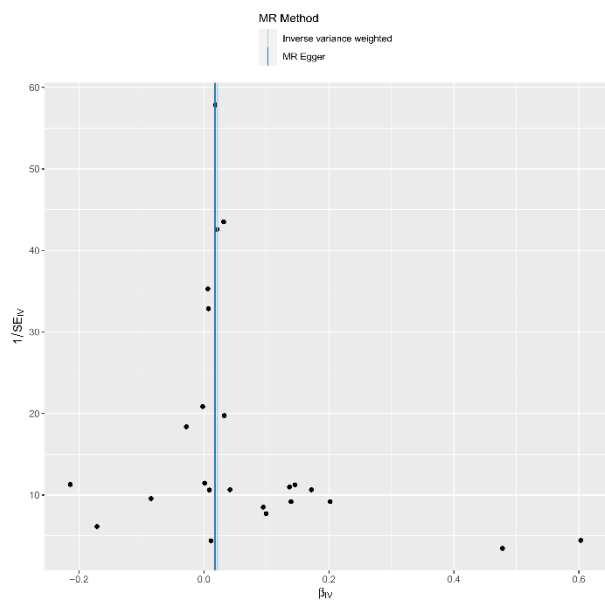
(21) CD25 on IgD+ CD38+ B cell on epilepsy



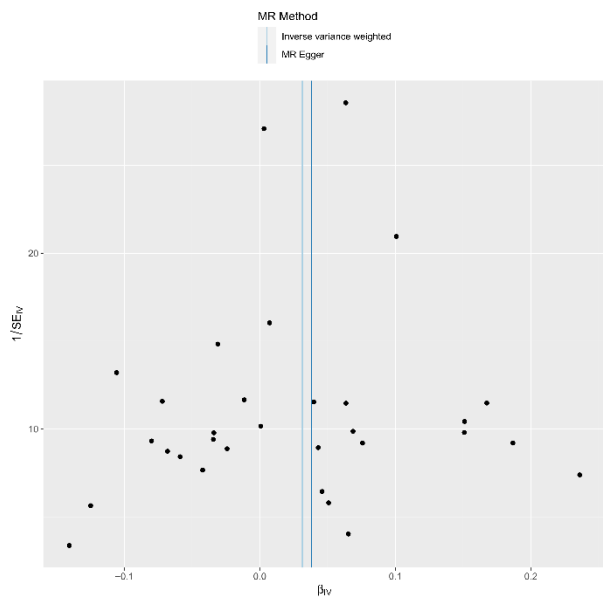
(22) CD25 on IgD- CD38- B cell on epilepsy



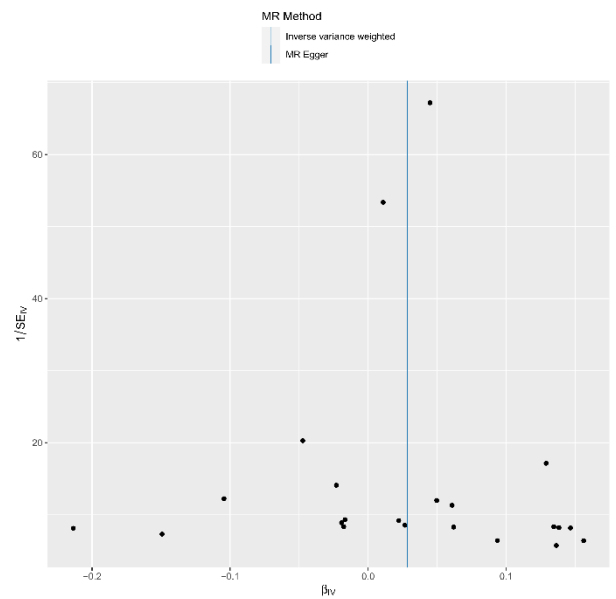
(23) CD25 on IgD- CD38+ B cell on epilepsy



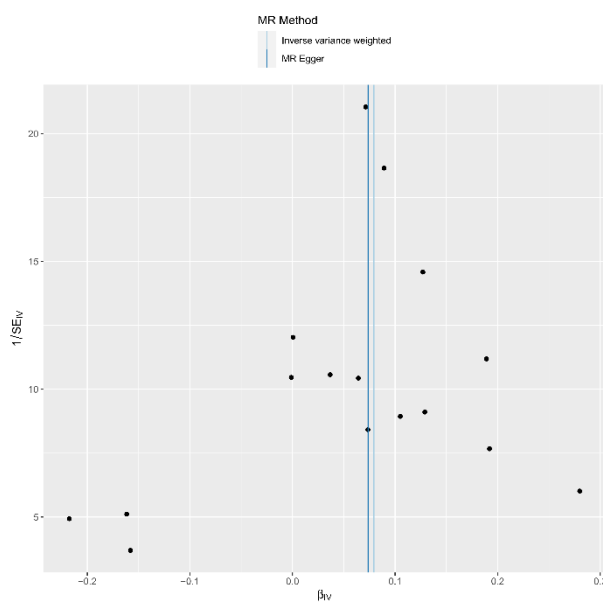
(24) CD28 on CD4 regulatory T cell on epilepsy



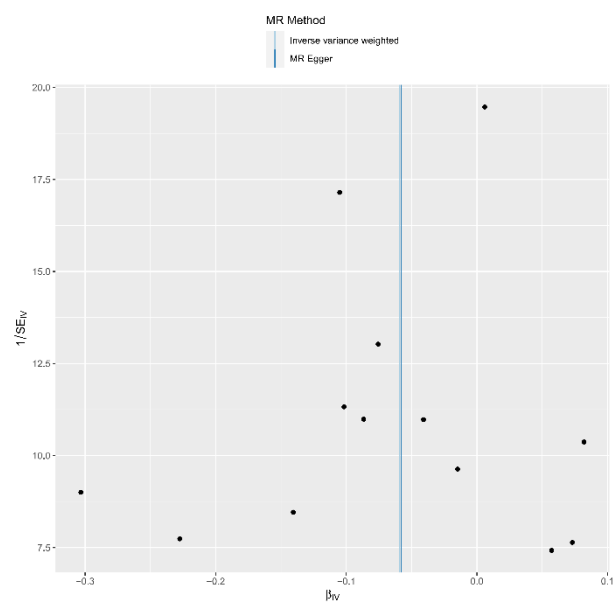
(25) CD127 on granulocyte on epilepsy



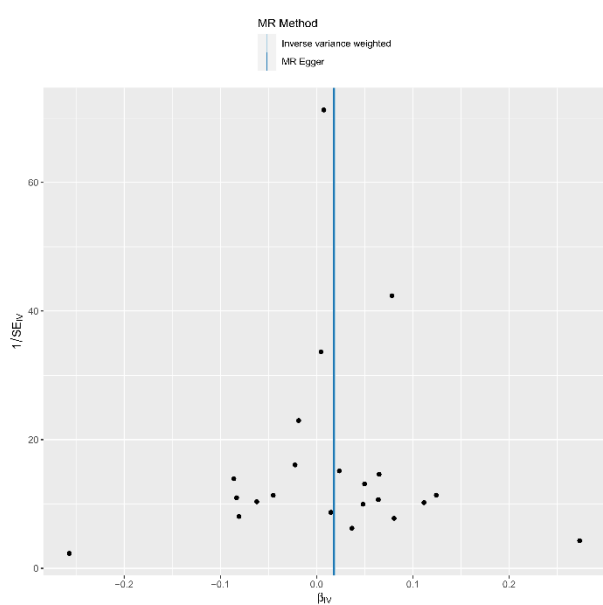
(26) CD25 on CD45RA+ CD4 not regulatory T cell on epilepsy



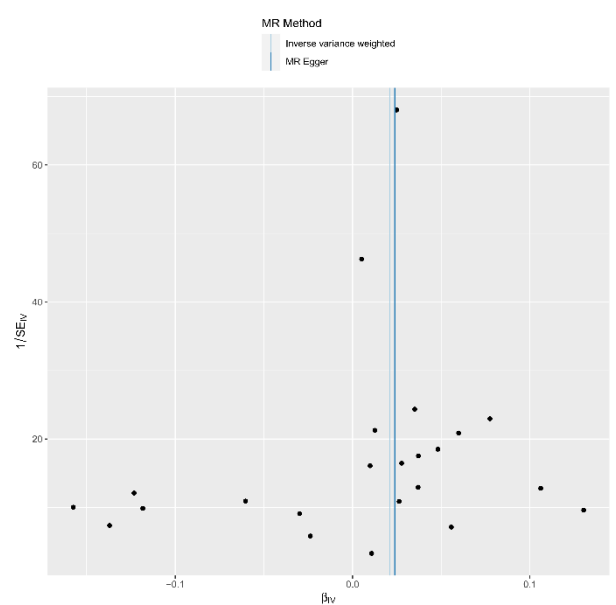
(27) CD64 on CD14- CD16- on epilepsy



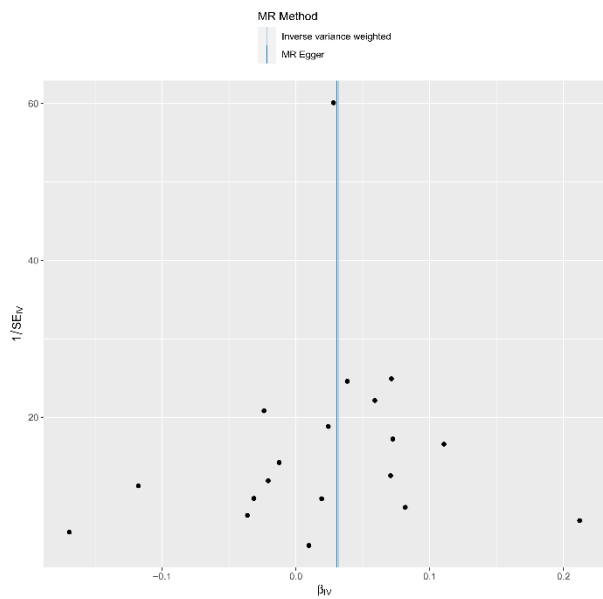
(28) CD4 on resting CD4 regulatory T cell on epilepsy



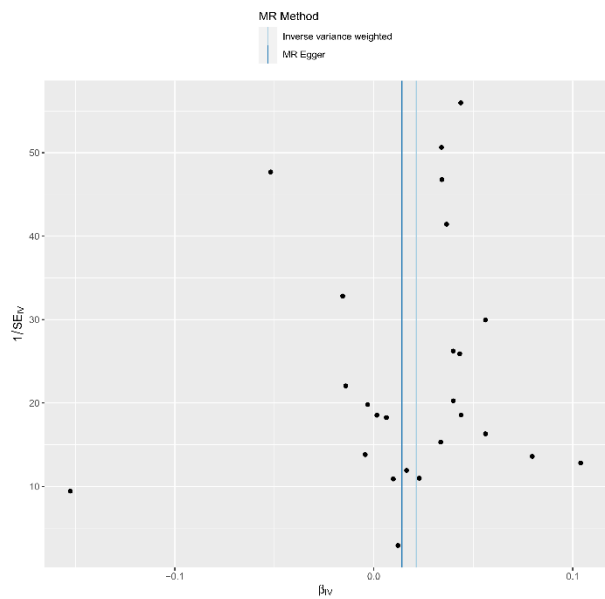
(29) CD4 on CD39+ secreting CD4 regulatory T cell on epilepsy



(30) HLA DR on plasmacytoid Dendritic Cell on epilepsy

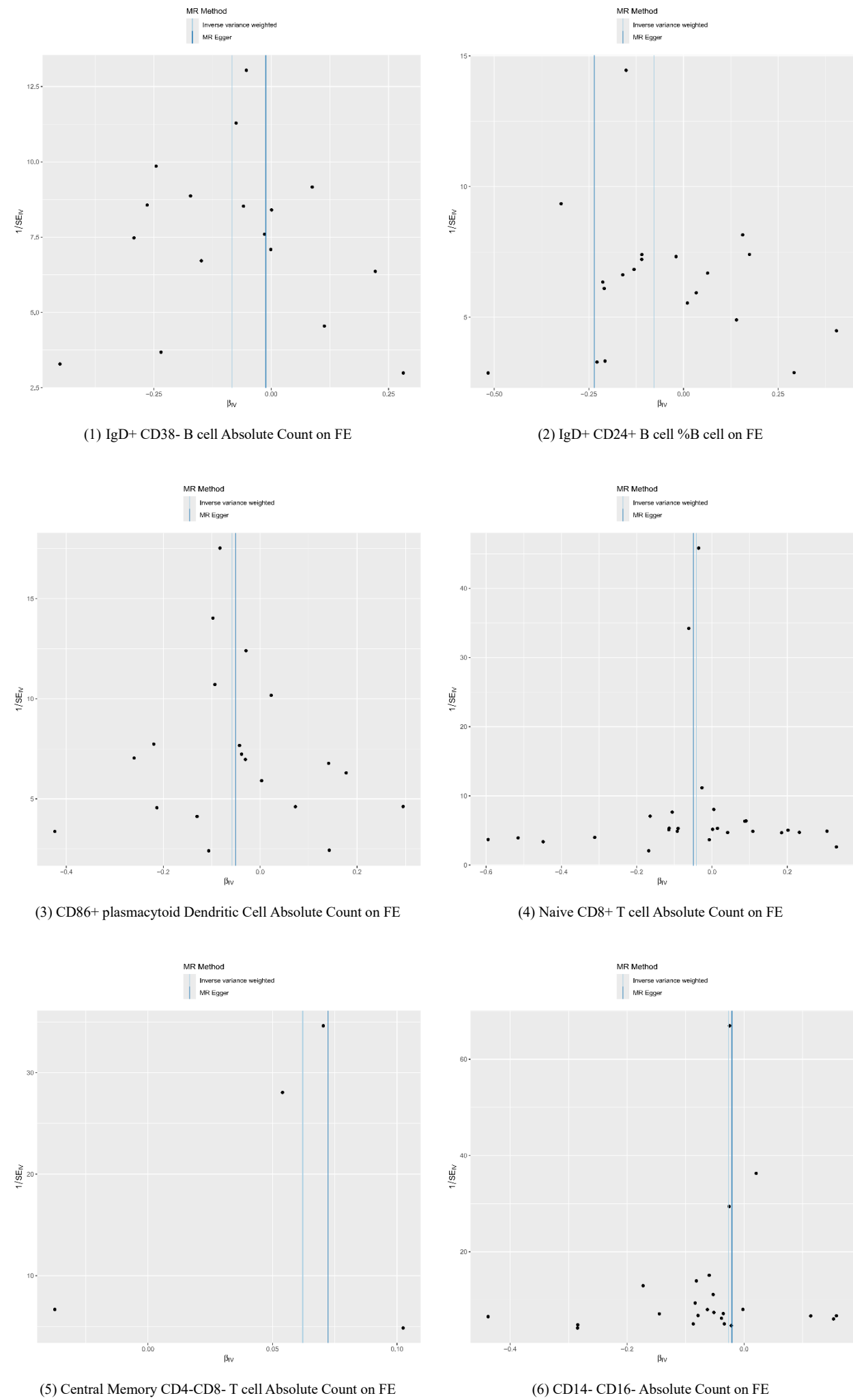


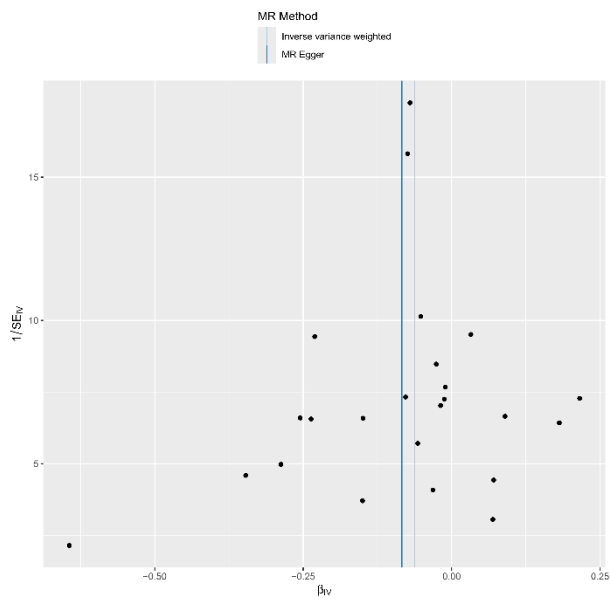
(31) HLA DR on Dendritic Cell on epilepsy



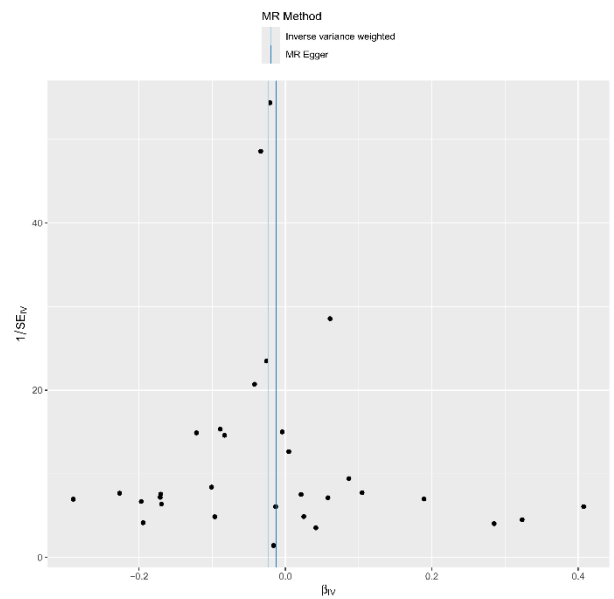
(32) HLA DR on CD33+ HLA DR+ CD14- on epilepsy

Fig. S7. Funnel plots for the effect of immunophenotype on FE. CCR, C-C chemokine receptor; CD, cluster of differentiation; FE, focal epilepsy; Ig, immunoglobulin; MR, Mendelian randomization; SE, standard error.

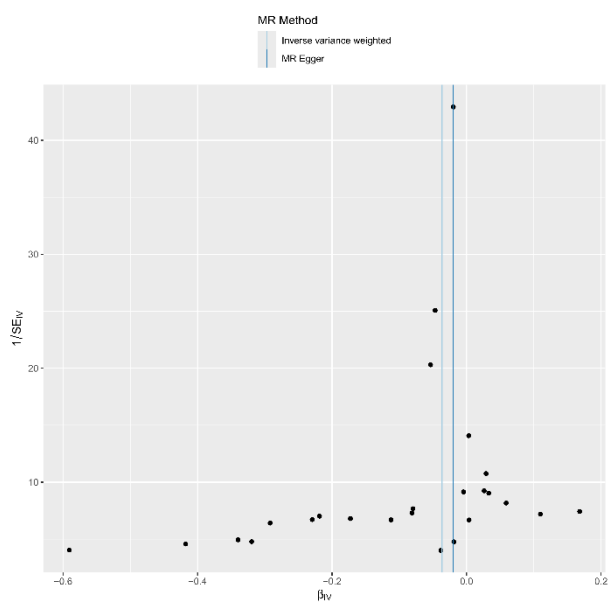




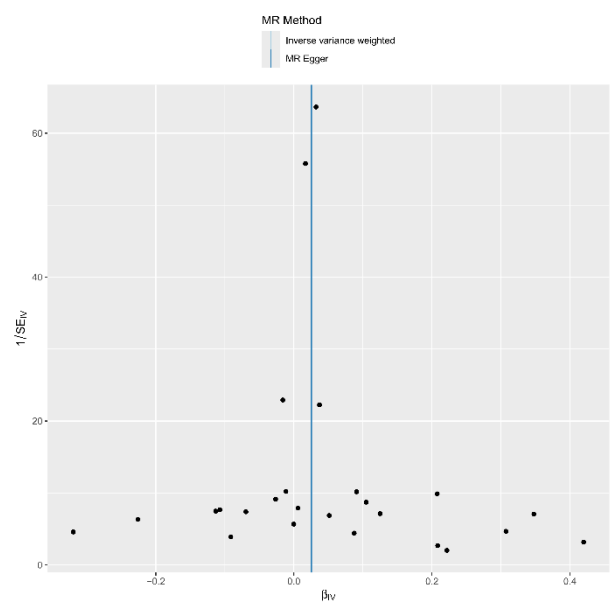
(7) Granulocyte Absolute Count on FE



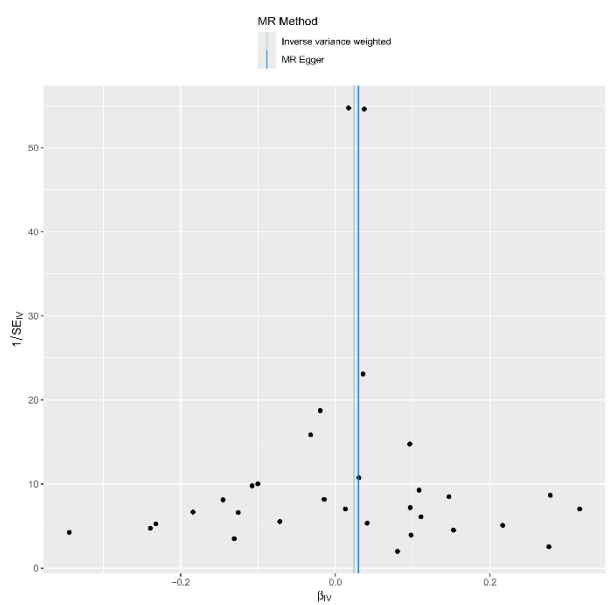
(8) CD39+ CD4+ T cell %T cell on FE



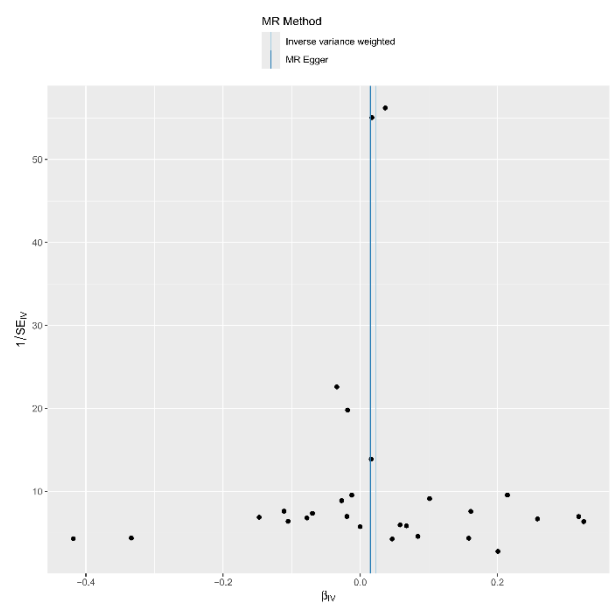
(9) CD28- CD25++ CD8+ T cell Absolute Count on FE



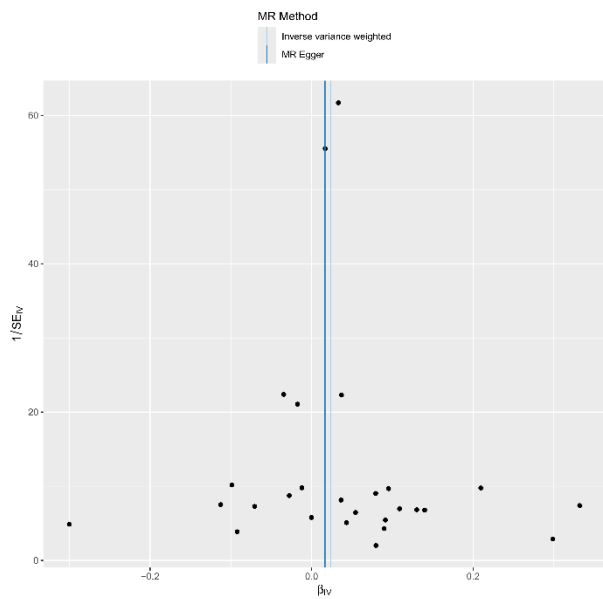
(10) CD19 on IgD+ CD24- B cell on FE



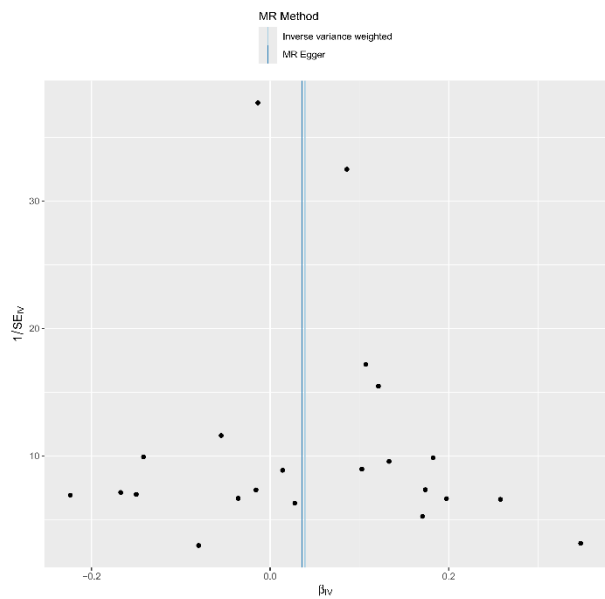
(11) CD19 on IgD+ CD38- B cell on FE



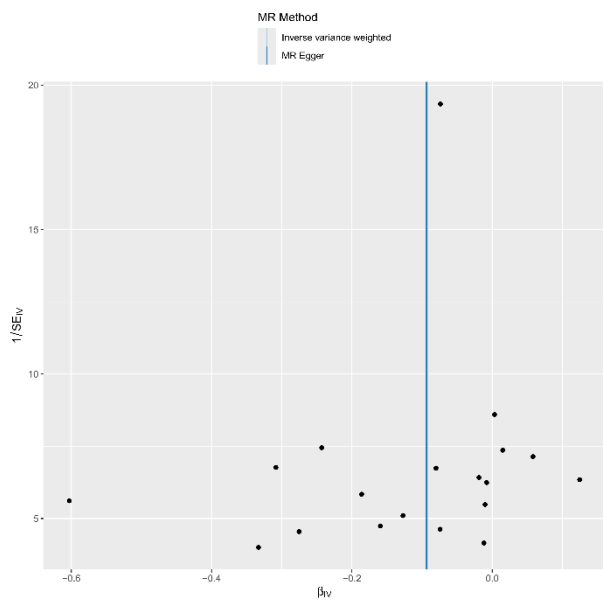
(12) CD19 on naive-mature B cell on FE



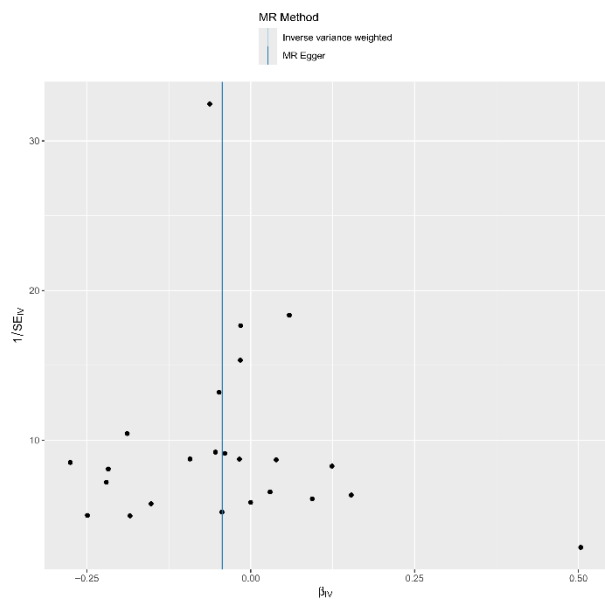
(13) CD19 on IgD+ B cell on FE



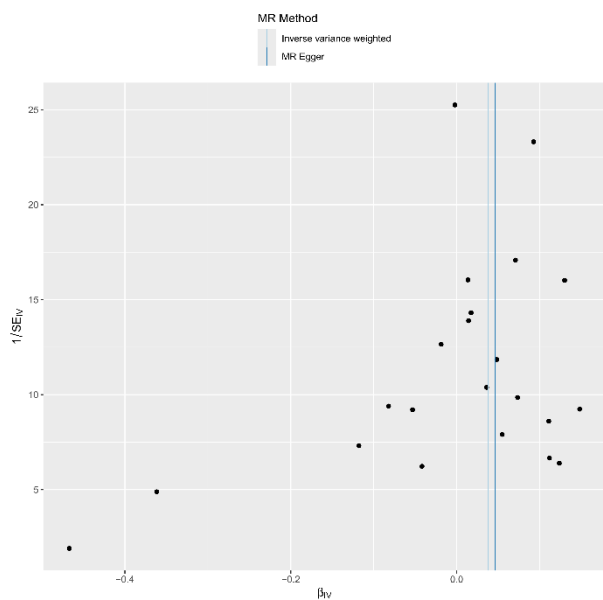
(14) CD25 on IgD- CD38- B cell on FE



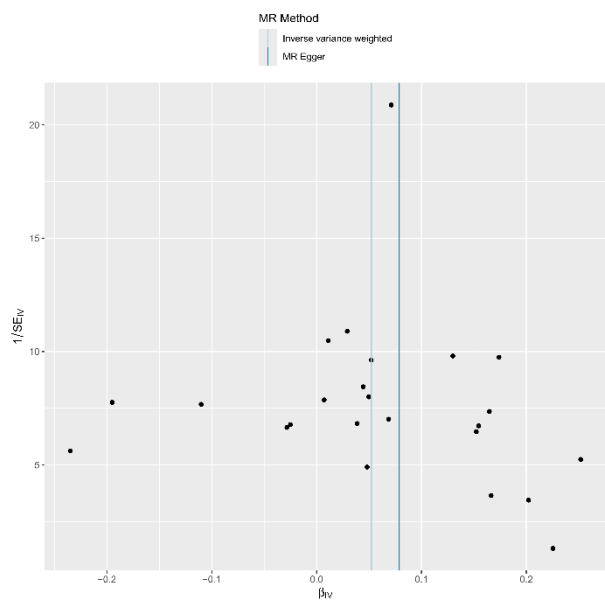
(15) CD25 on IgD- CD38+ B cell on FE



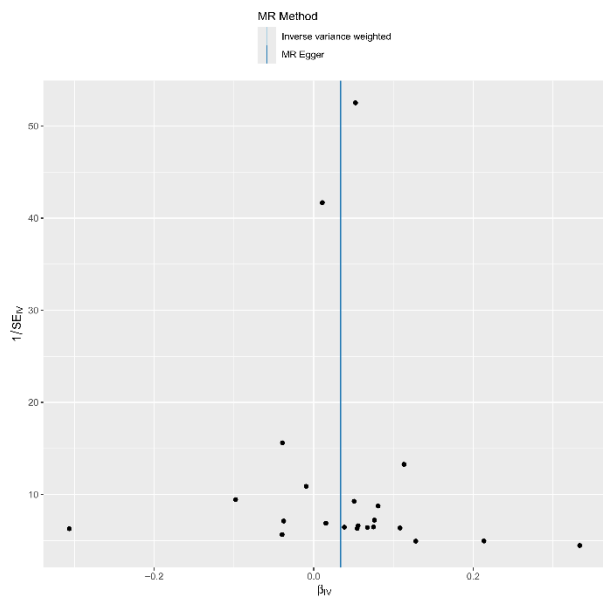
(16) CD38 on transitional B cell on FE



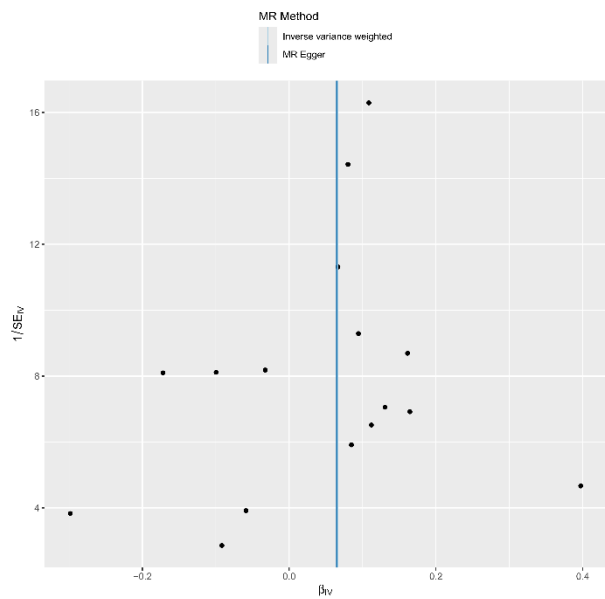
(17) CD45 on Natural Killer T on FE



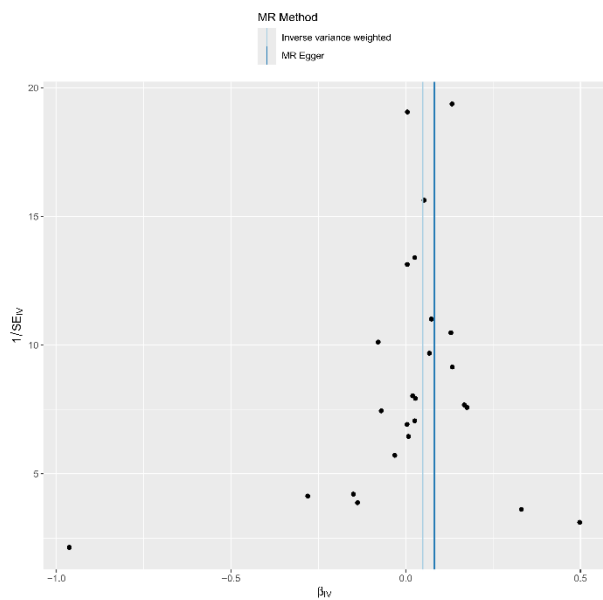
(18) CD127 on CD8+ T cell on FE



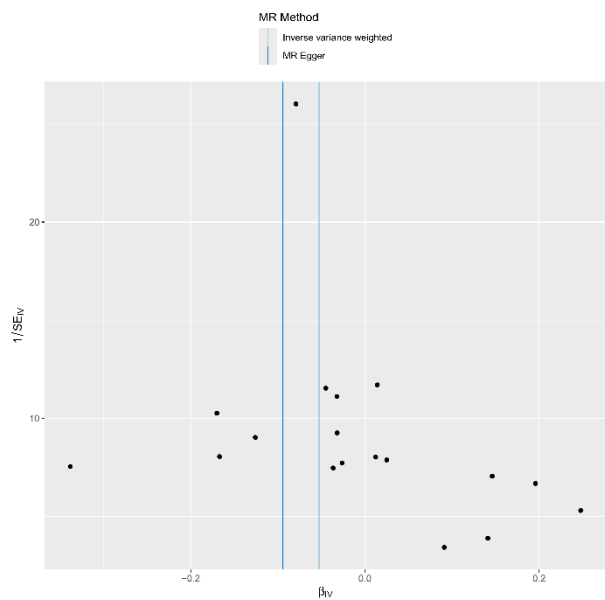
(19) CD25 on CD45RA+ CD4 not regulatory T cell on FE



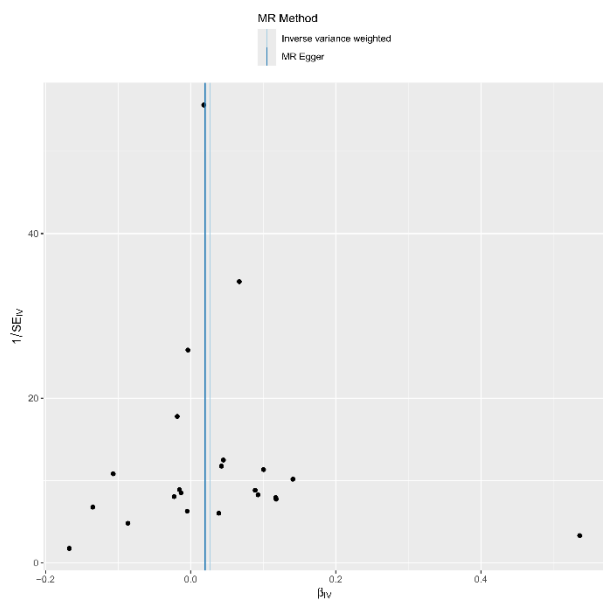
(20) CD64 on CD14- CD16- on FE



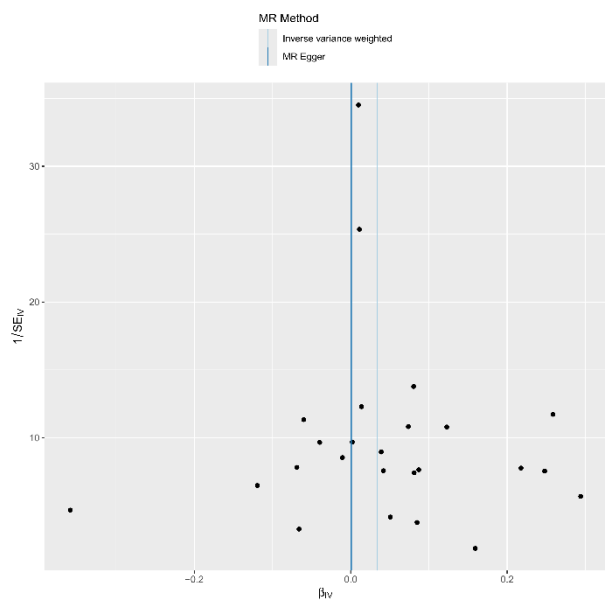
(21) CCR2 on monocyte on FE



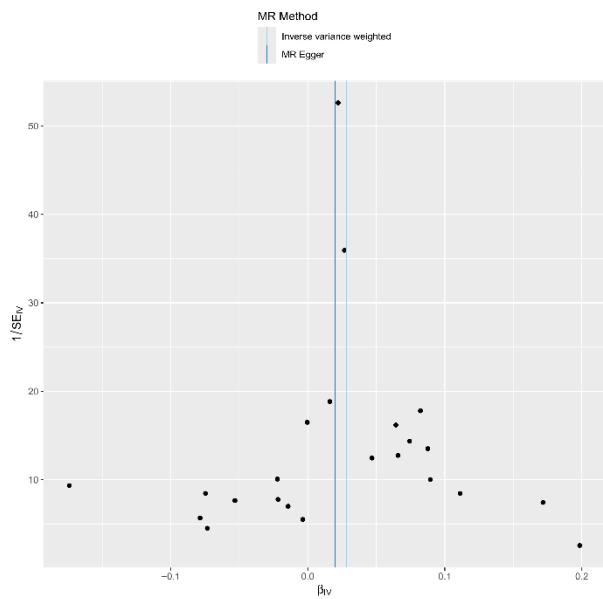
(22) CD8 on Natural Killer T on FE



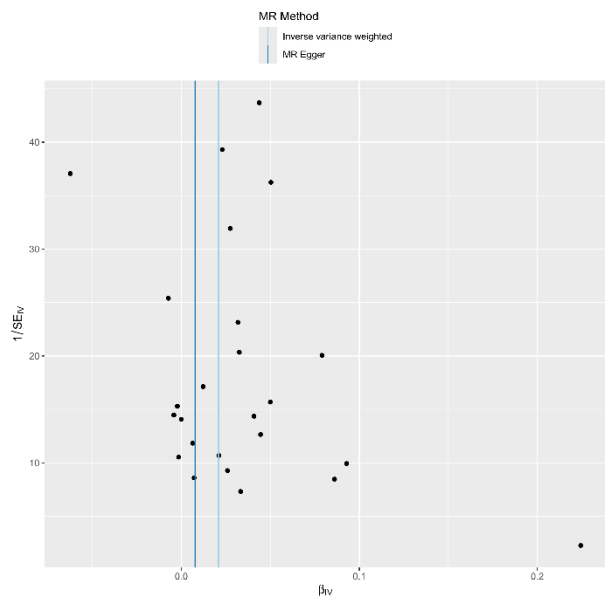
(23) CD4 on CD39+ secreting CD4 regulatory T cell on FE



(24) SSC-A on granulocyte on FE

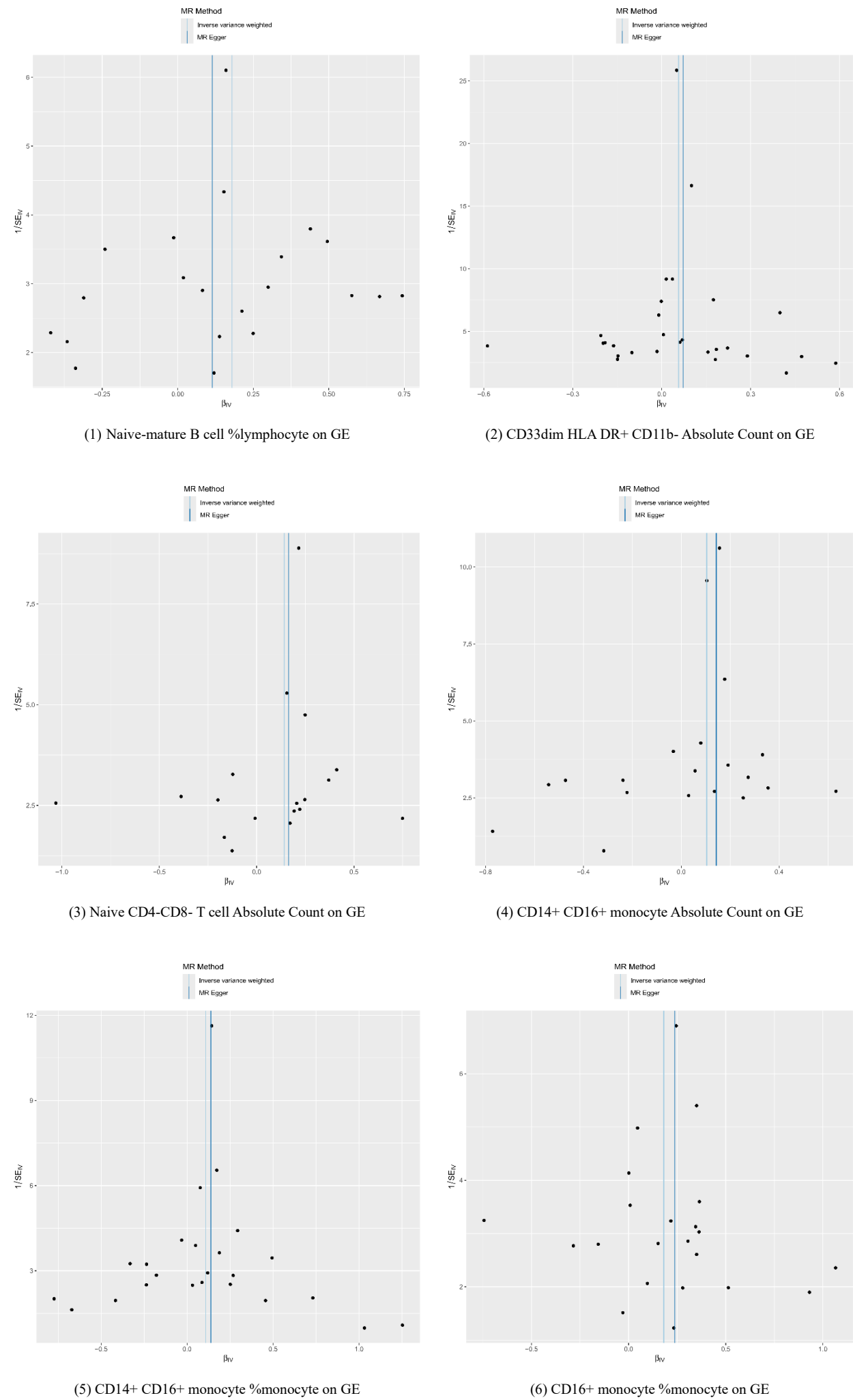


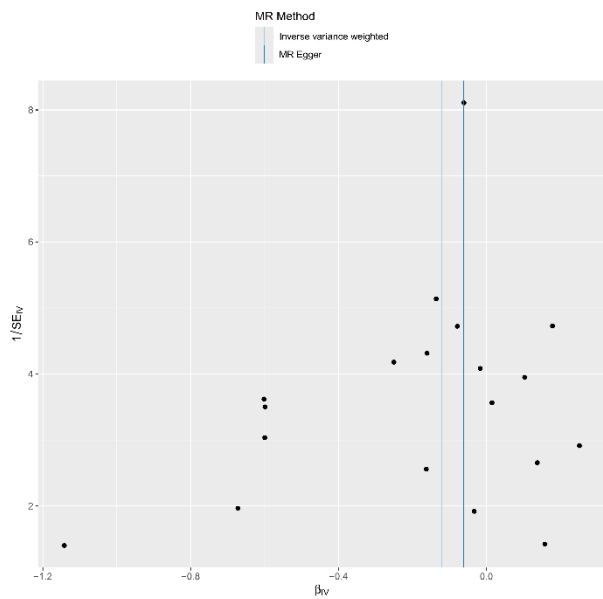
(25) HLA DR on plasmacytoid Dendritic Cell on FE



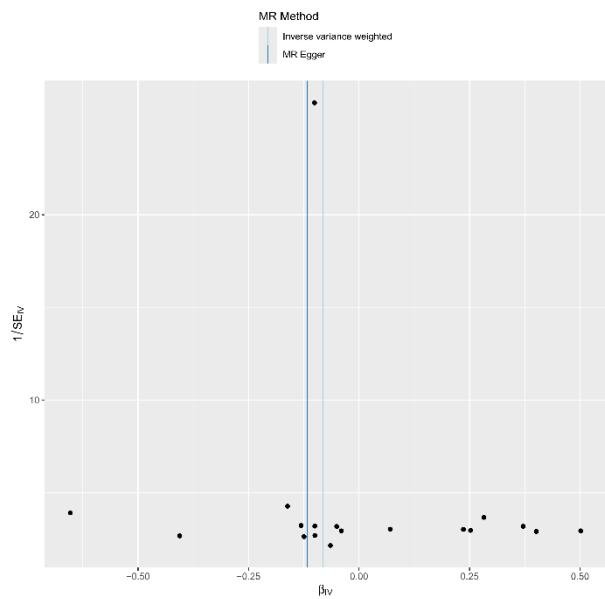
(26) CD25 on CD45RA+ CD4 not regulatory T cell on epilepsy

Fig. S8. Funnel plots for the effect of immunophenotype on GE. CCR, C-C chemokine receptor; CD, cluster of differentiation; FSC-A, forward scatter area; GE, generalized epilepsy; HLA DR, human leukocyte antigen-DR isotype; SE, standard error; TCR, T cell receptor.

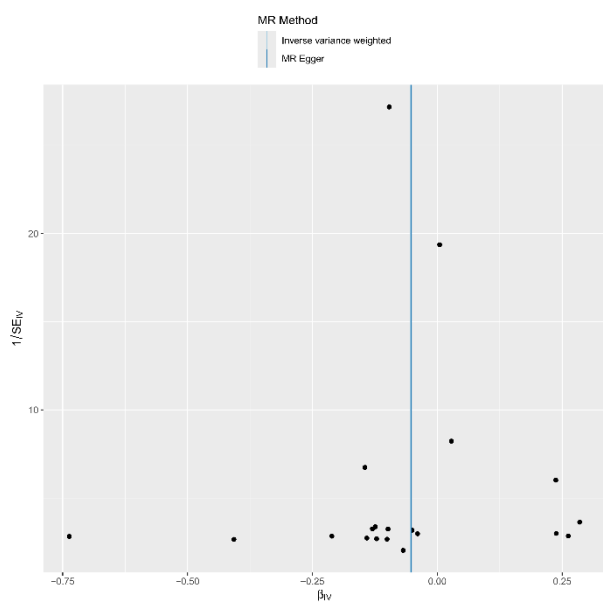




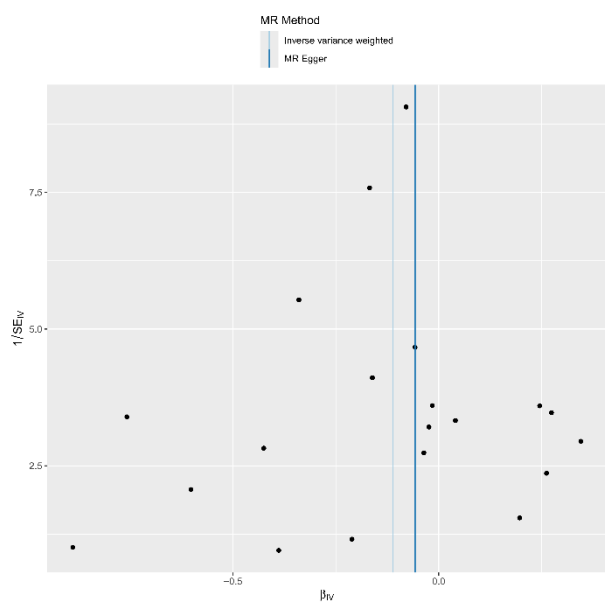
(7) CD8dim T cell %T cell on GE



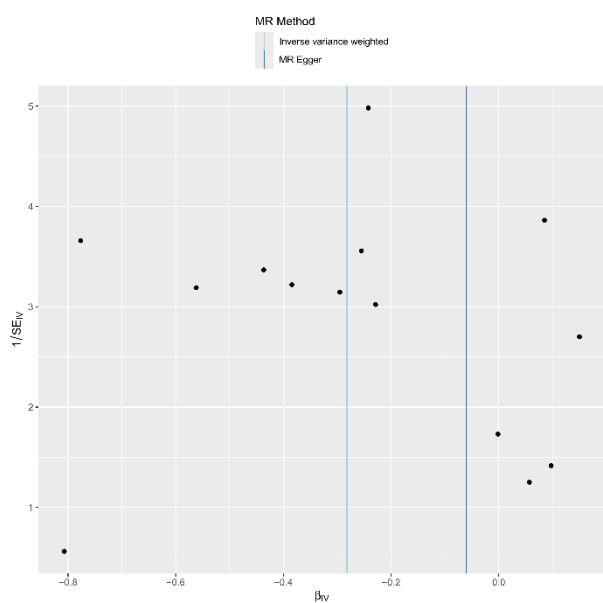
(8) TCRgd T cell %T cell on GE



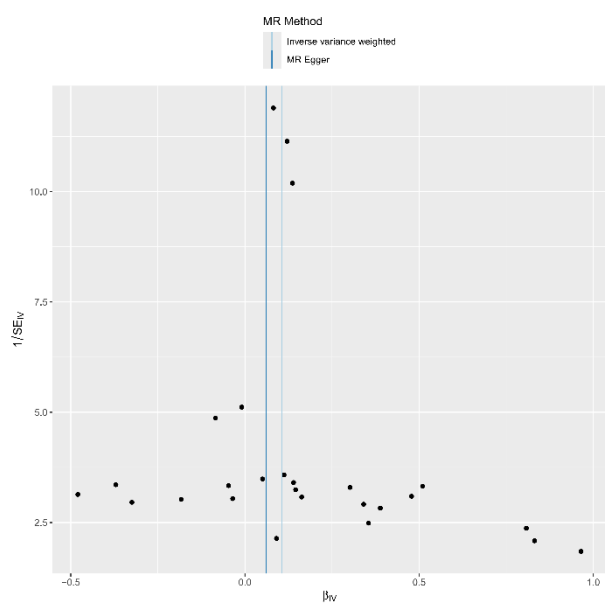
(9) TCRgd T cell %lymphocyte on GE



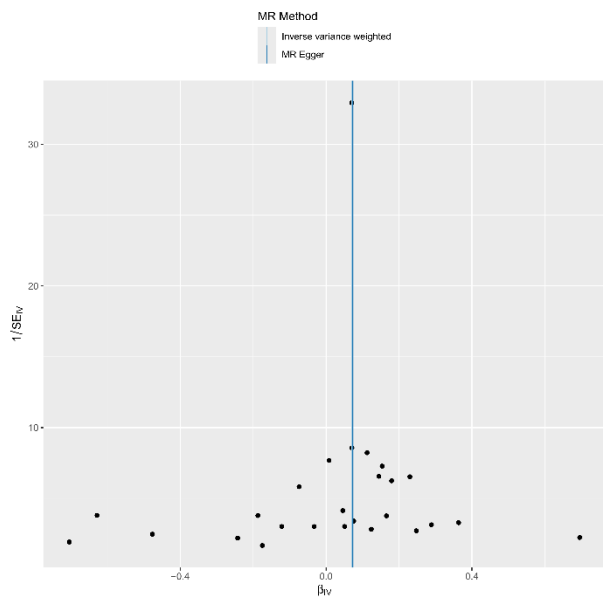
(10) CD39+ CD8+ T cell %T cell on GE



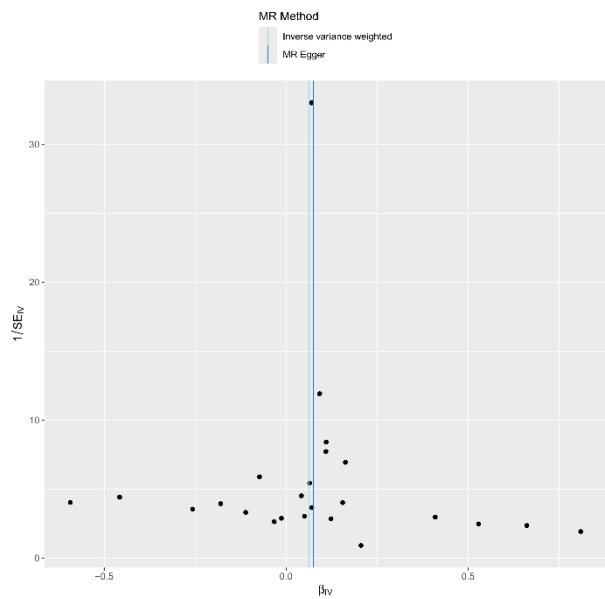
(11) CD28- CD8+ T cell Absolute Count on GE



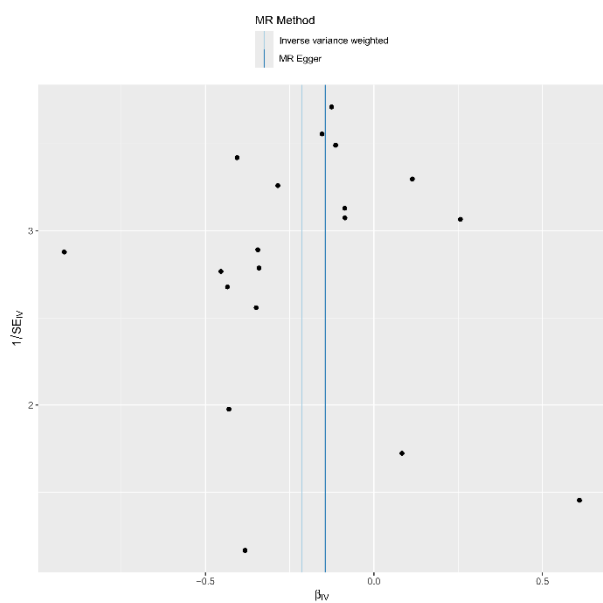
(12) CD19 on transitional B cell on GE



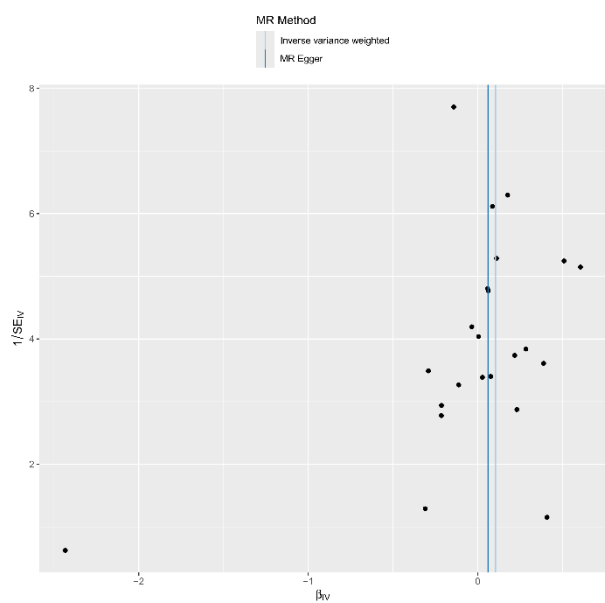
(13) CD25 on IgD+ CD24+ B cell on GE



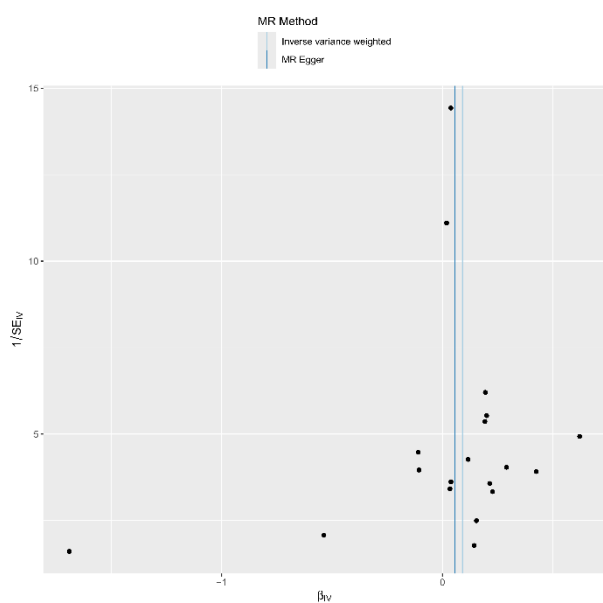
(14) CD25 on unswitched memory B cell on GE



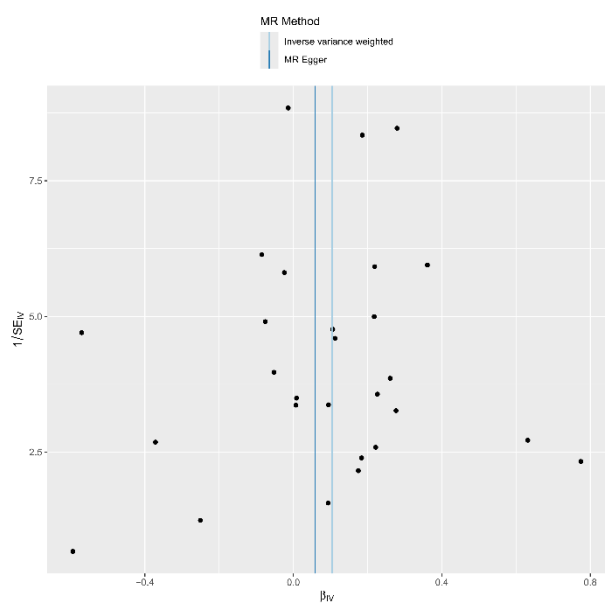
(15) CD38 on CD20- B cell on GE



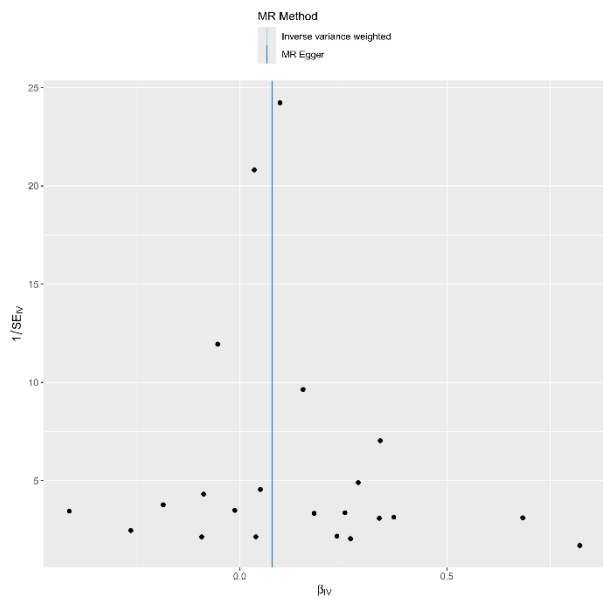
(16) CD3 on Terminally Differentiated CD8+ T cell on GE



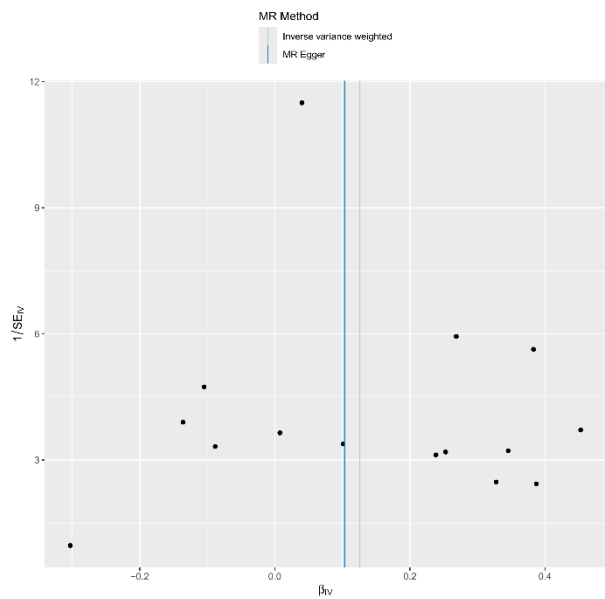
(17) CD3 on Effector Memory CD4+ T cell on GE



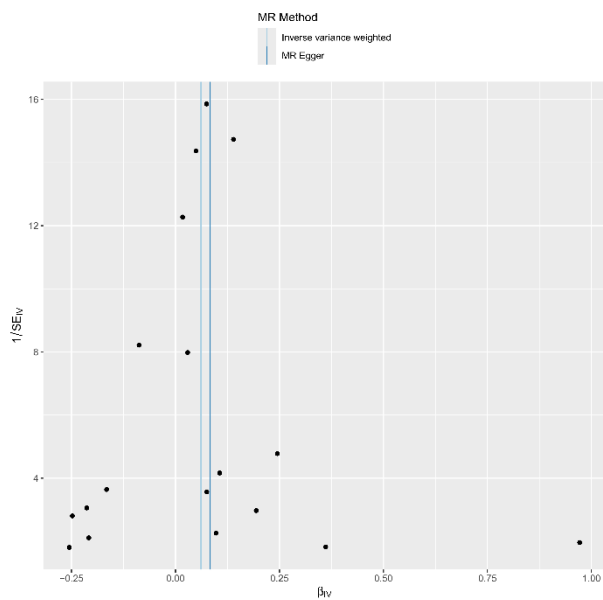
(18) CD16-CD56 on Natural Killer on GE



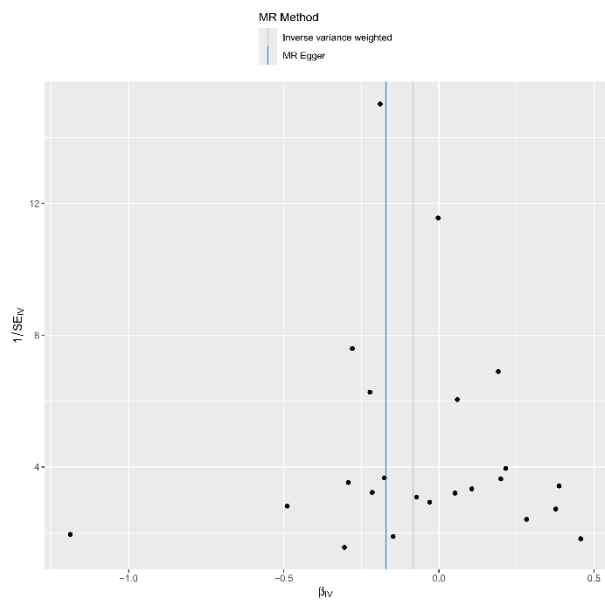
(19) CD28 on CD39+ resting CD4 regulatory T cell on GE



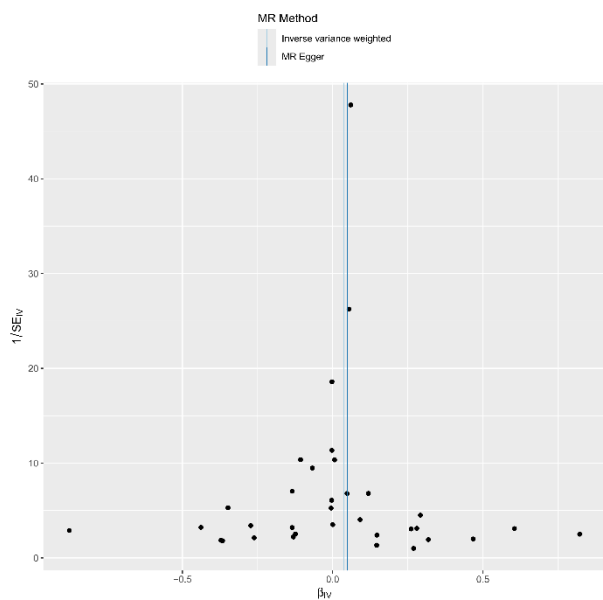
(20) CD4 on monocyte on GE



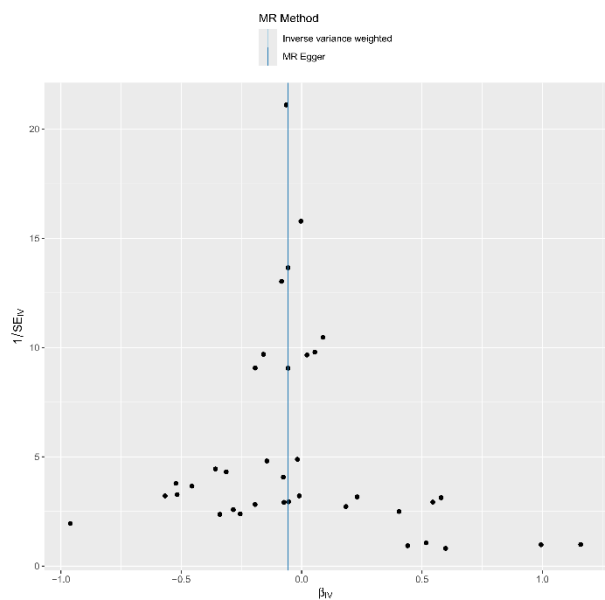
(21) FSC-A on HLA DR+ CD8+ T cell on GE



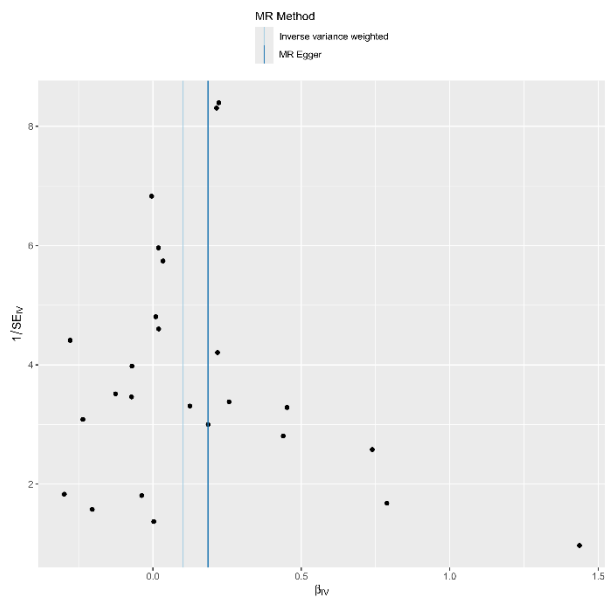
(22) CD40 on CD14+ CD16- monocyte on GE



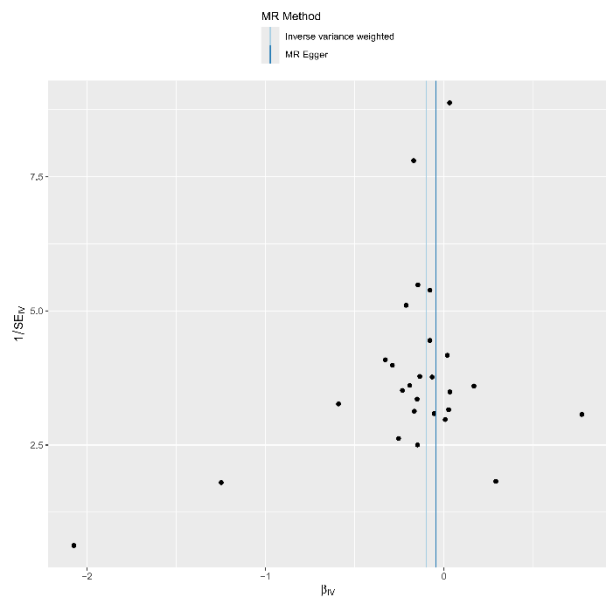
(23) CD64 on CD14+ CD16- monocyte on GE



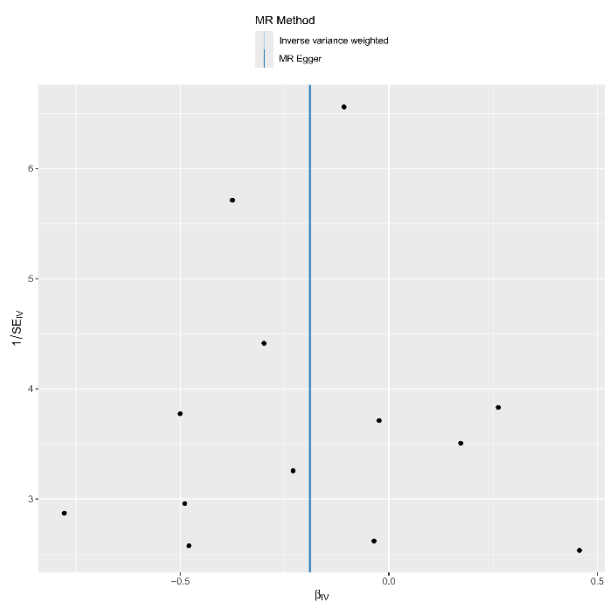
(24) CCR2 on CD14+ CD16+ monocyte on GE



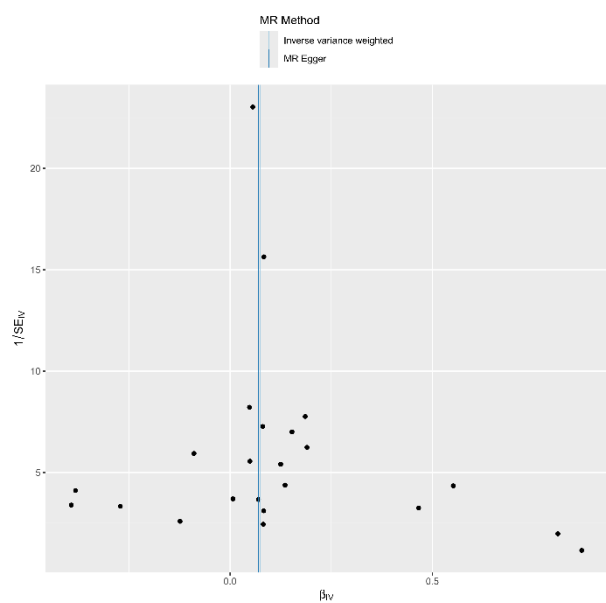
(25) CCR2 on monocyte on GE



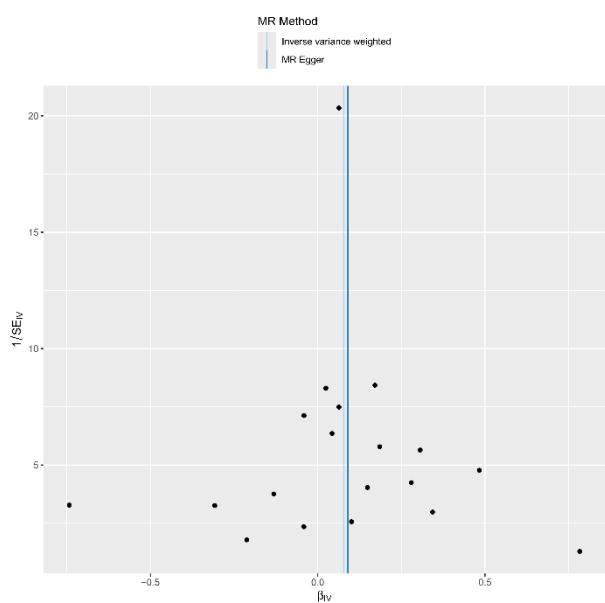
(26) CD4 on CD45RA+ CD4+ T cell on GE



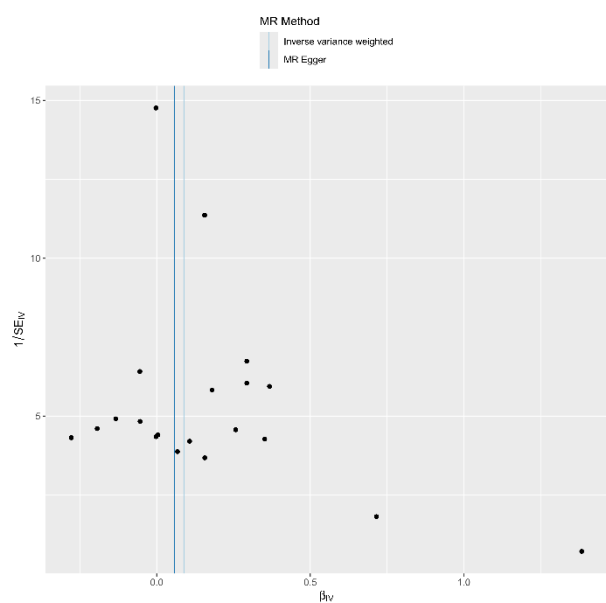
(27) CD4 on resting CD4 regulatory T cell on GE



(28) HLA DR on plasmacytoid Dendritic Cell on GE

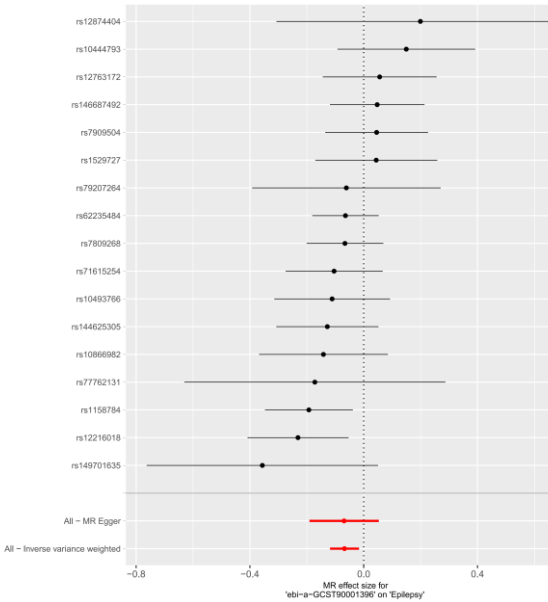


(29) HLA DR on Dendritic Cell on GE

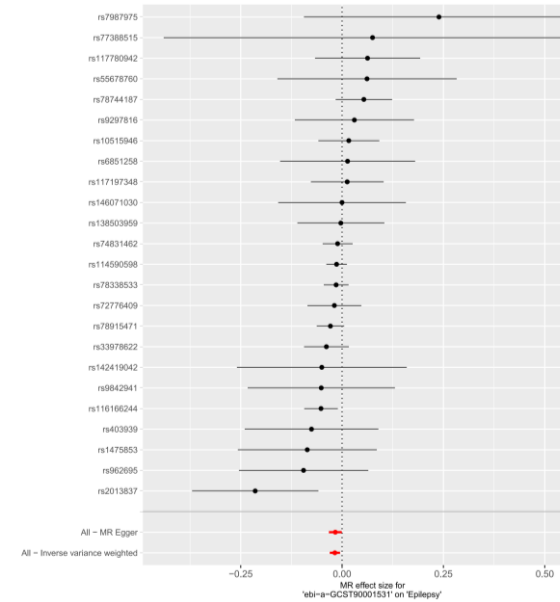


(30) HLA DR on CD33+ HLA DR+ CD14dim on GE

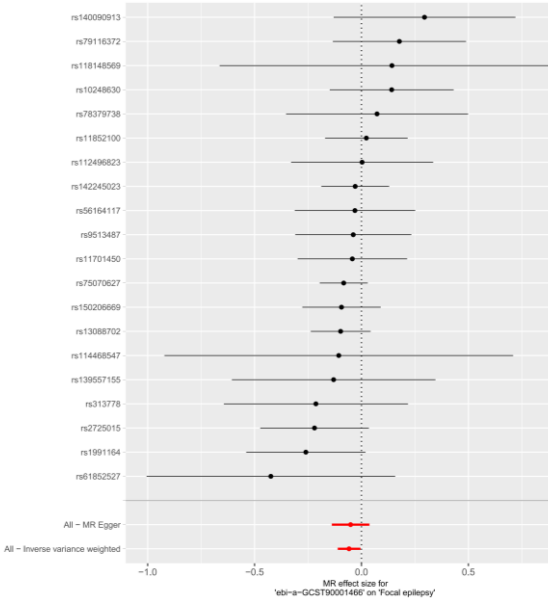
Fig. S9. Forest plots for the effect of immunophenotype on epilepsy. CD, cluster of differentiation; HLA DR, human leukocyte antigen-DR isotype; Ig, immunoglobulin; MR, Mendelian randomization.



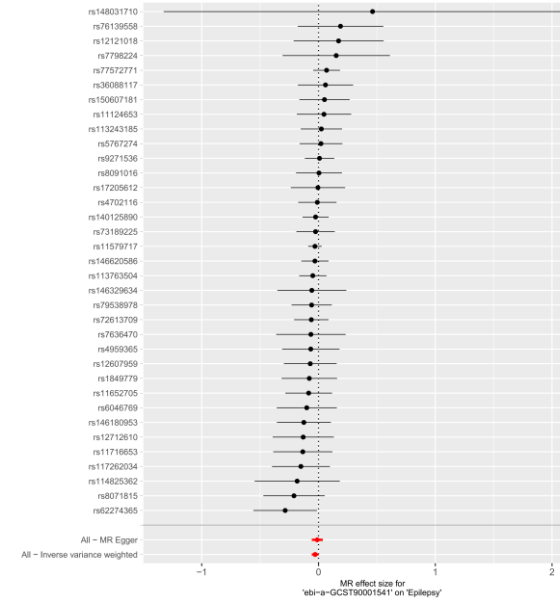
(1) IgD+ CD38- B cell Absolute Count on epilepsy



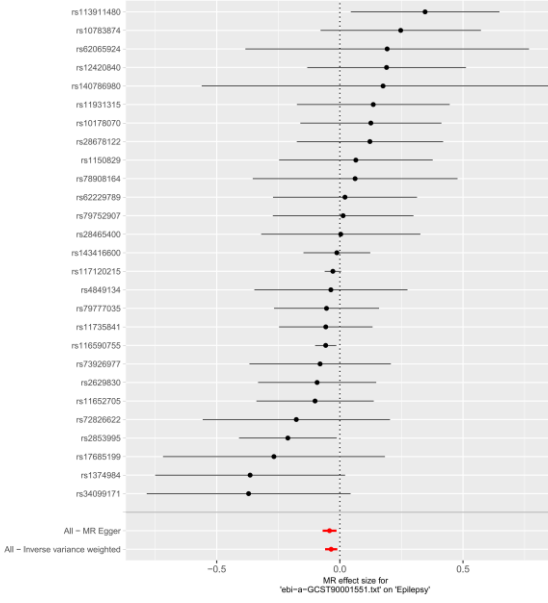
(2) CD33dim HLA DR- Absolute Count on epilepsy



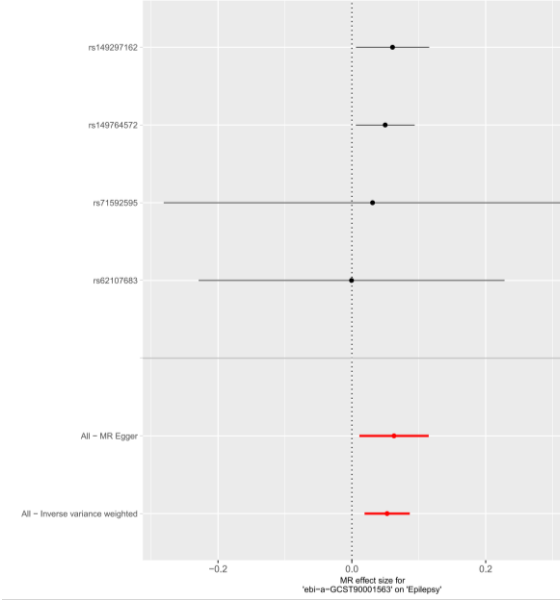
(3) Basophil Absolute Count on epilepsy



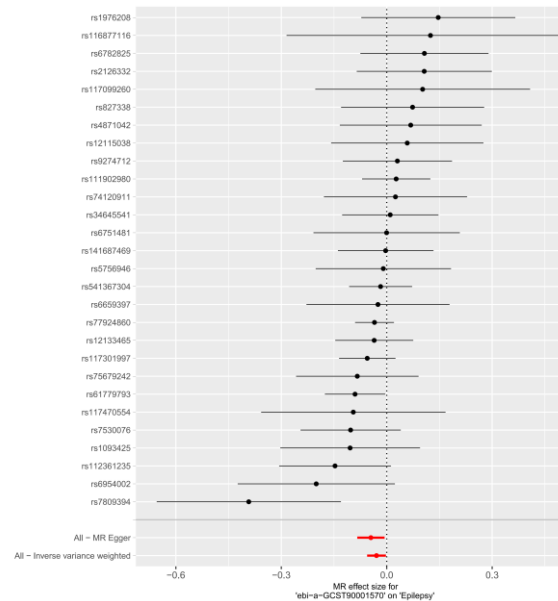
(4) Naive CD4+ T cell %CD4+ T cell on epilepsy



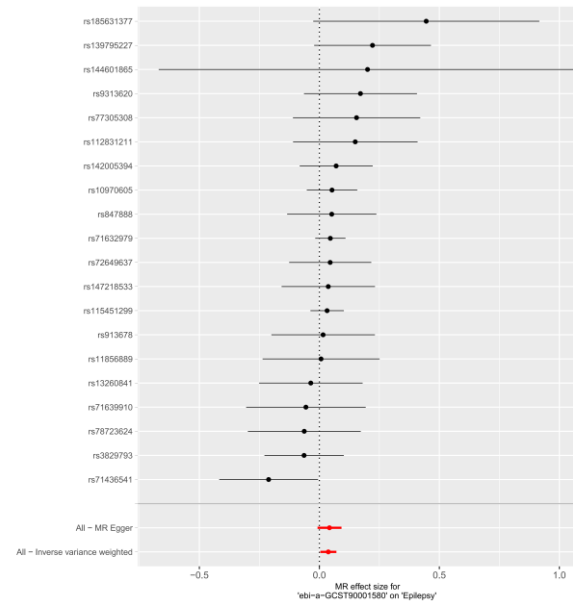
(5) Naive CD8+ T cell Absolute Count on epilepsy



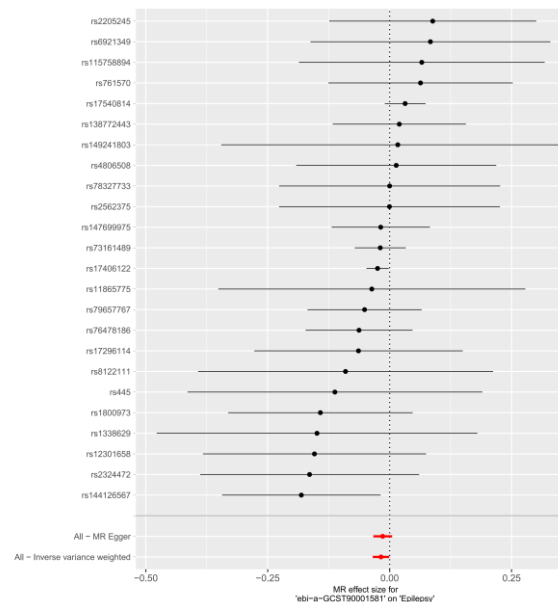
(6) Central Memory CD4-CD8- T cell Absolute Count on epilepsy



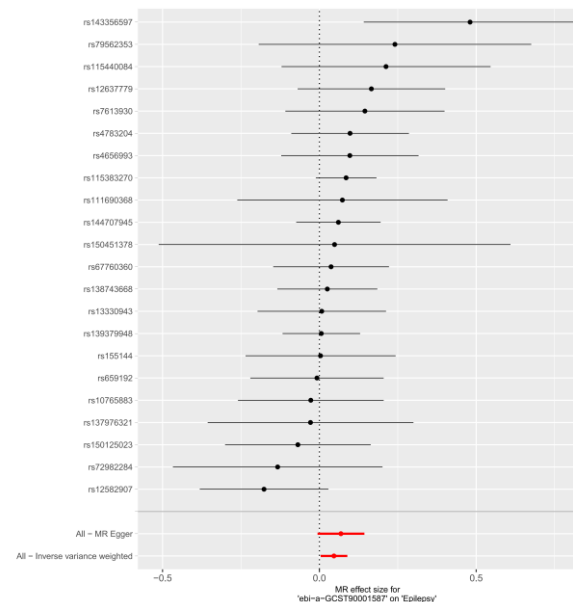
(7) Effector Memory CD4-CD8- T cell %CD4-CD8- T cell on epilepsy



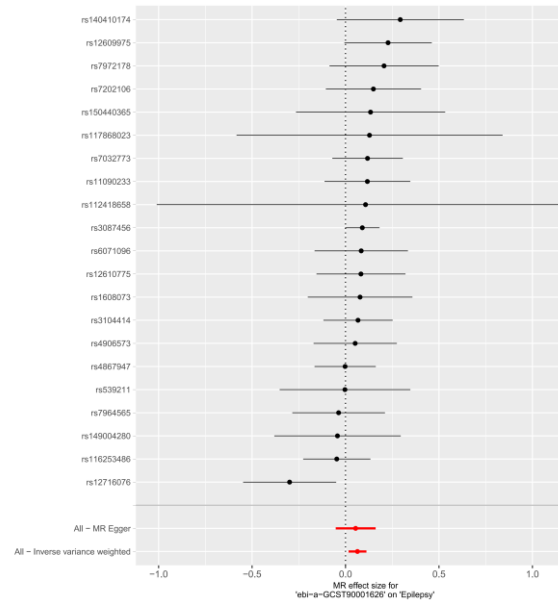
(8) CD14+ CD16+ monocyte Absolute Count on epilepsy



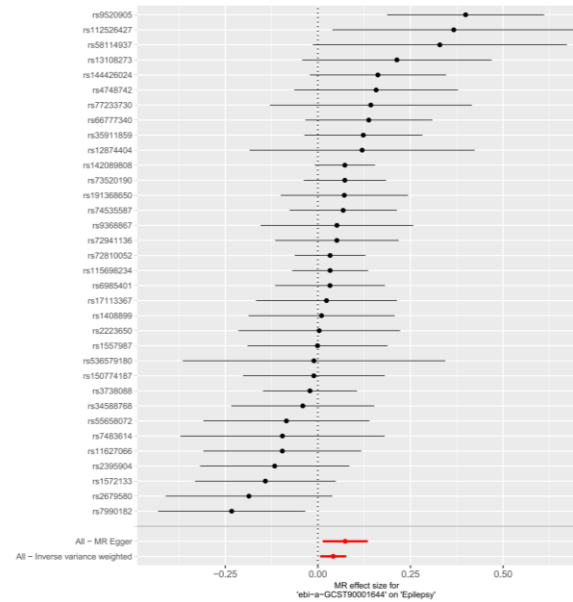
(9) CD14- CD16- Absolute Count on epilepsy



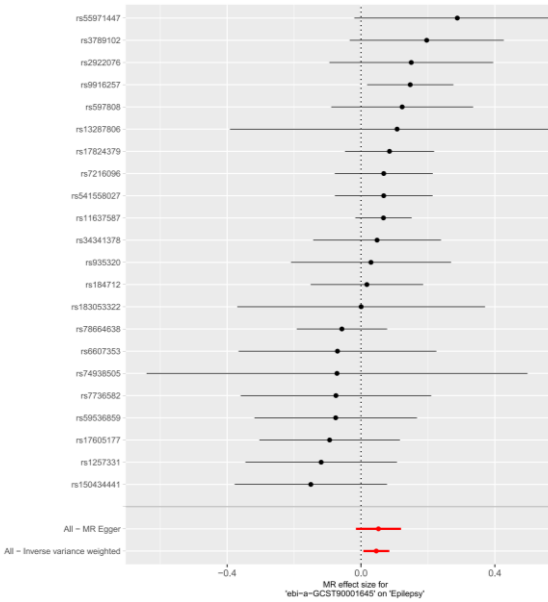
(10) CD16+ monocyte %monocyte on epilepsy



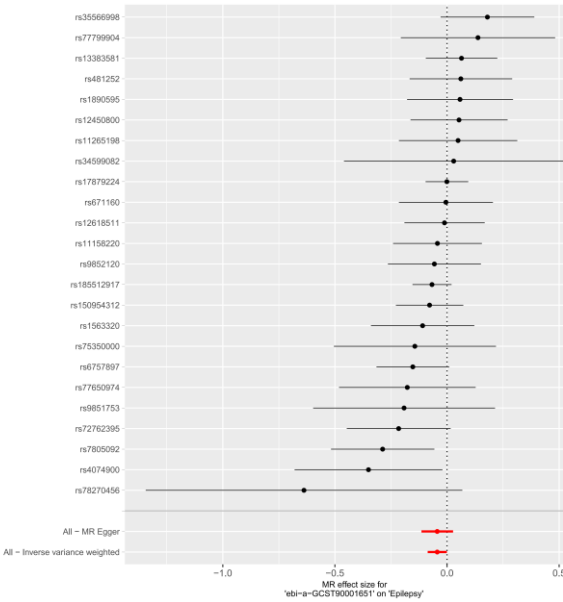
(11) HLA DR+ CD4+ T cell %lymphocyte on epilepsy



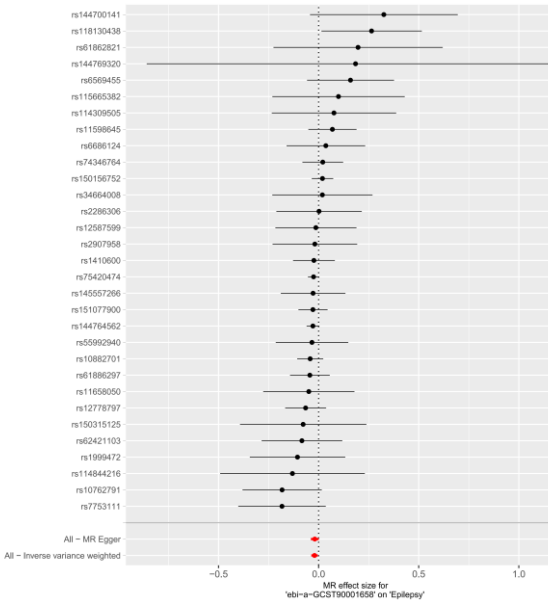
(12) B cell %lymphocyte on epilepsy



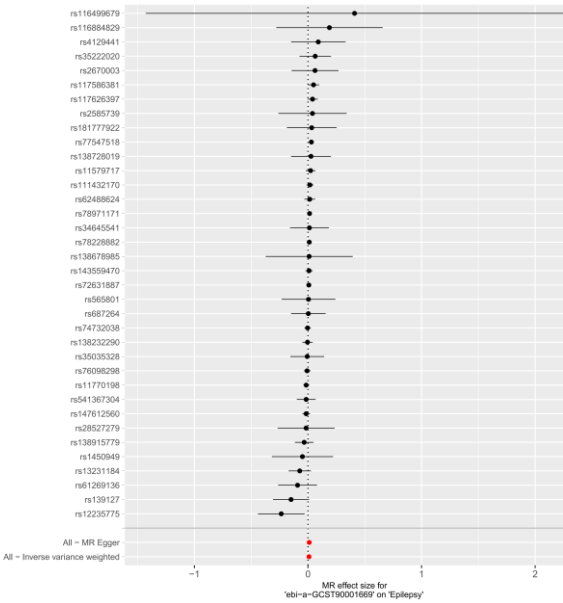
(13) Natural Killer Absolute Count on epilepsy



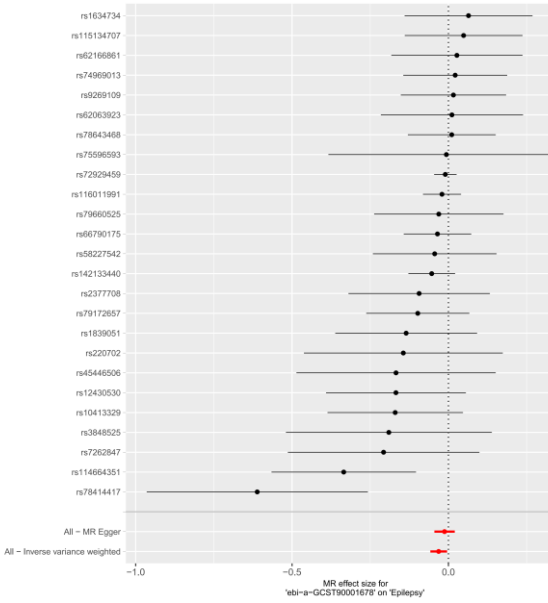
(14) Granulocyte Absolute Count on epilepsy



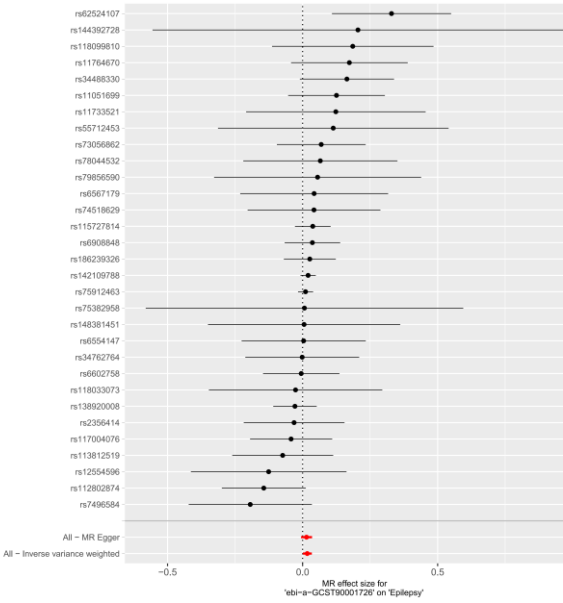
(15) CD39+ CD4+ T cell %T cell on epilepsy



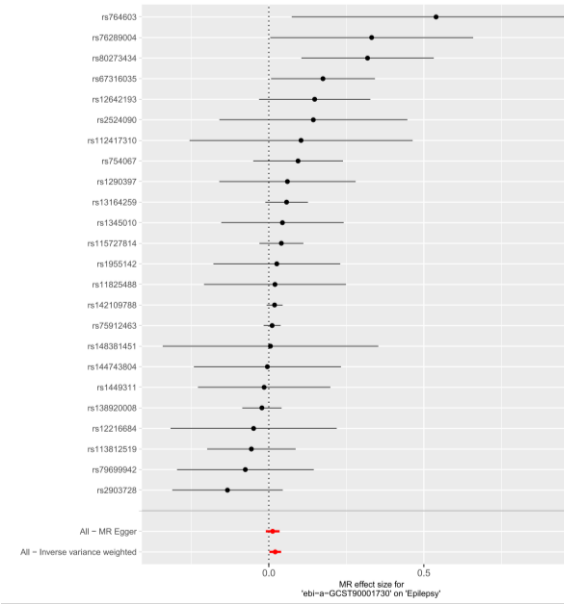
(16) CD28+ CD45RA- CD8dim T cell Absolute Count on epilepsy



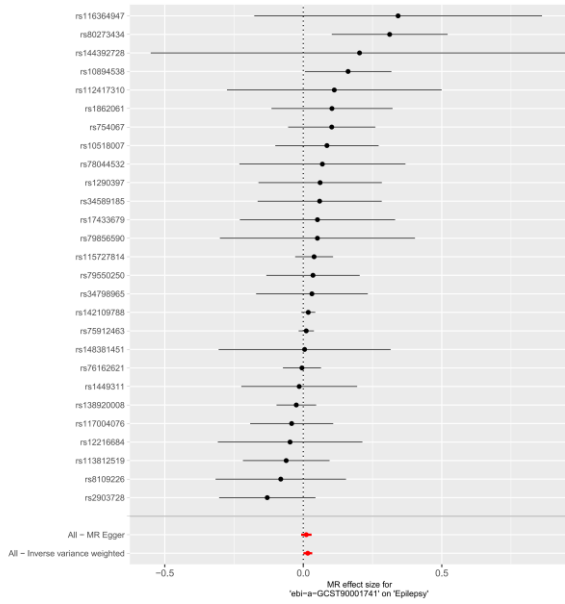
(17) CD28- CD25++ CD8+ T cell Absolute Count on epilepsy



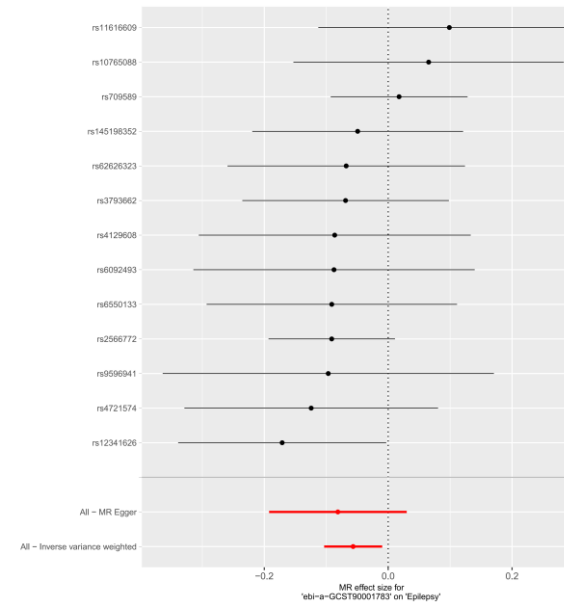
(18) CD19 on IgD+ CD38- B cell on epilepsy



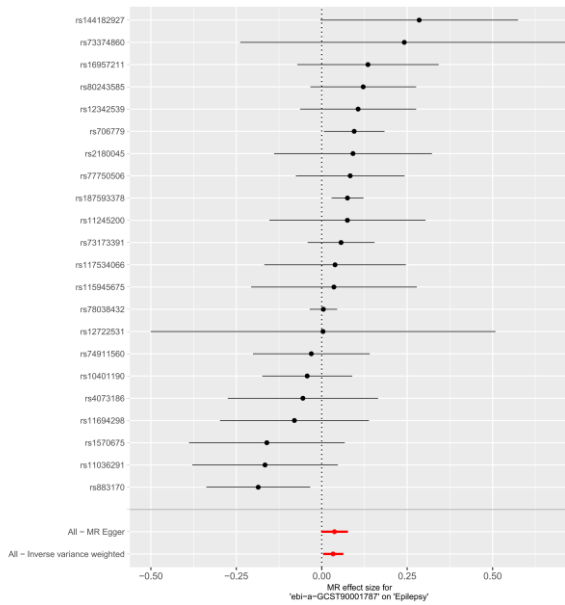
(19) CD19 on IgD+ CD38dim B cell on epilepsy



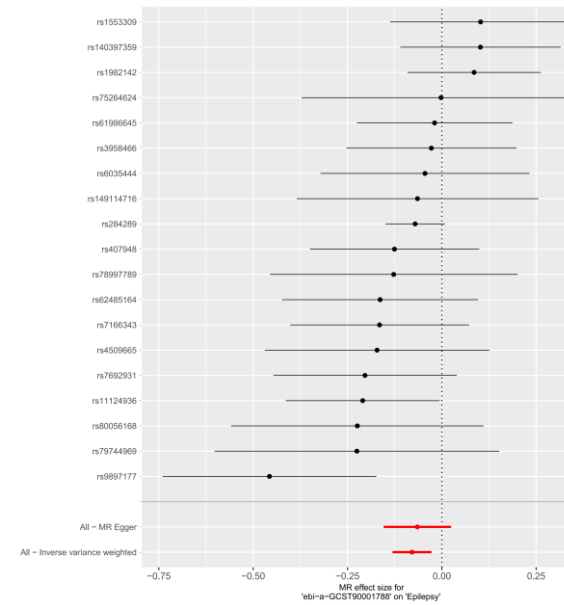
(20) CD19 on IgD+ B cell on epilepsy



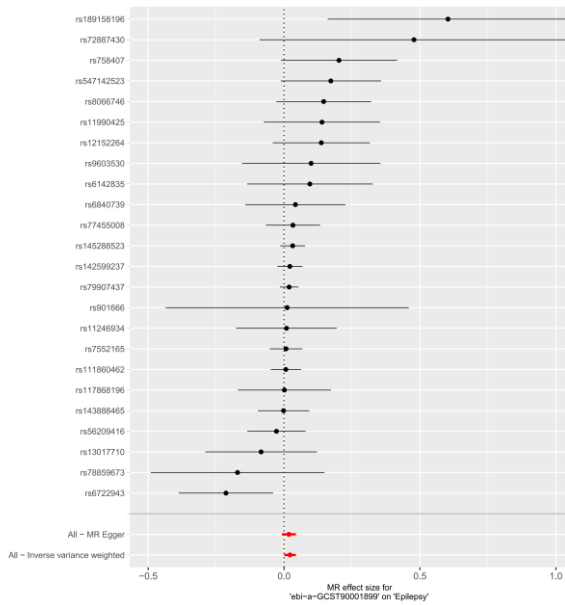
(21) CD25 on IgD+ CD38+ B cell on epilepsy



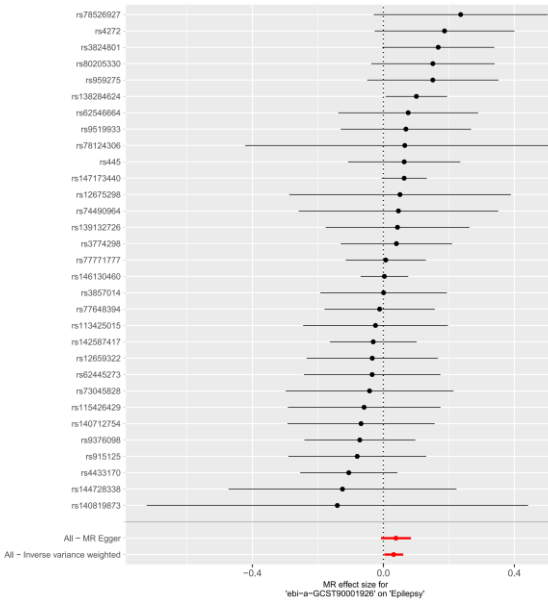
(22) CD25 on IgD- CD38- B cell on epilepsy



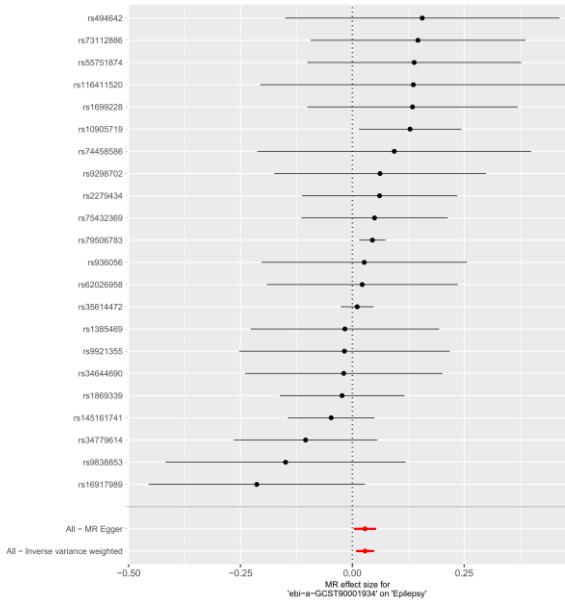
(23) CD25 on IgD- CD38+ B cell on epilepsy



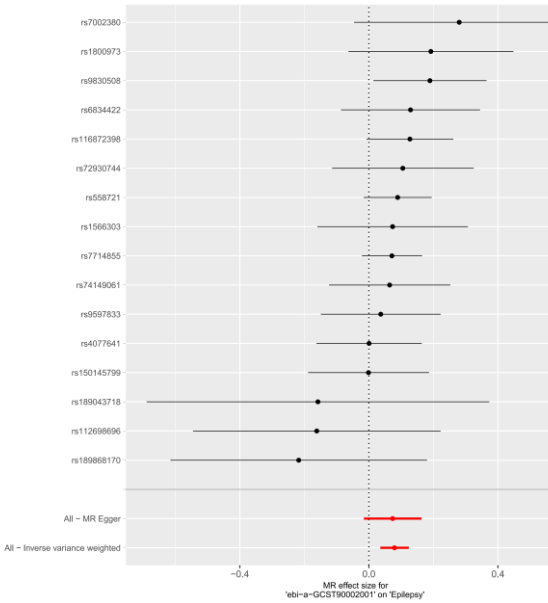
(24) CD28 on CD4 regulatory T cell on epilepsy



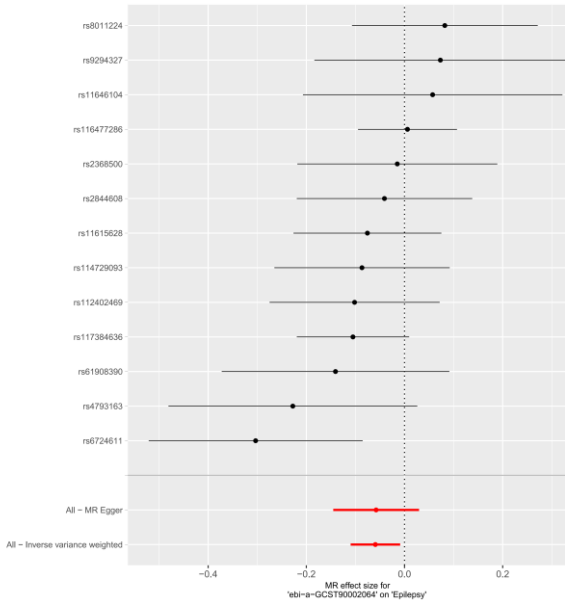
(25) CD127 on granulocyte on epilepsy



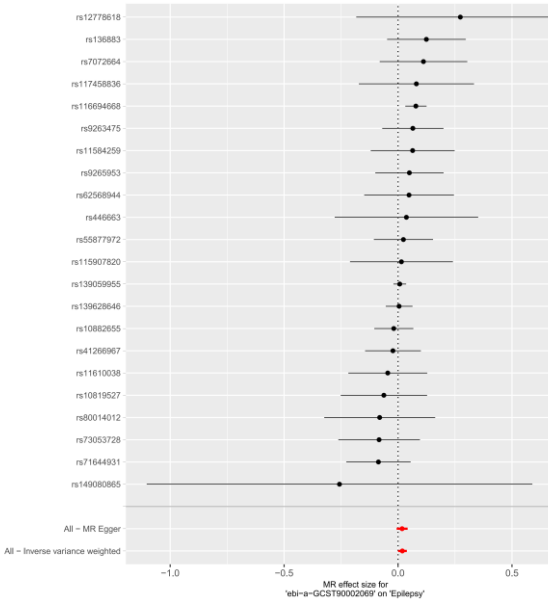
(26) CD25 on CD45RA+ CD4 not regulatory T cell on epilepsy



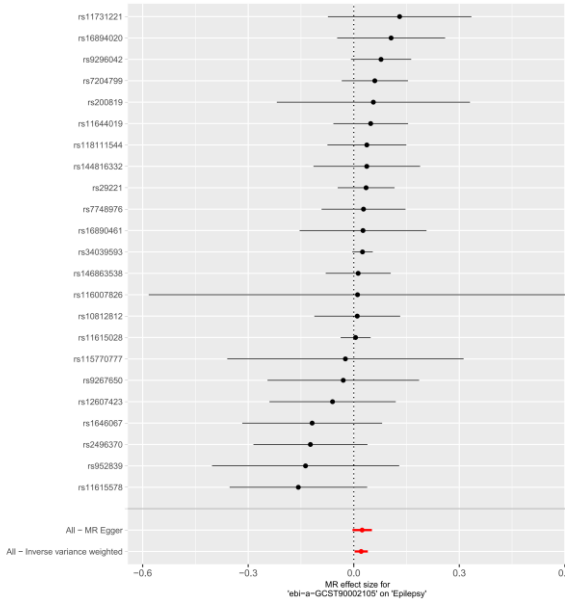
(27) CD64 on CD14- CD16- on epilepsy



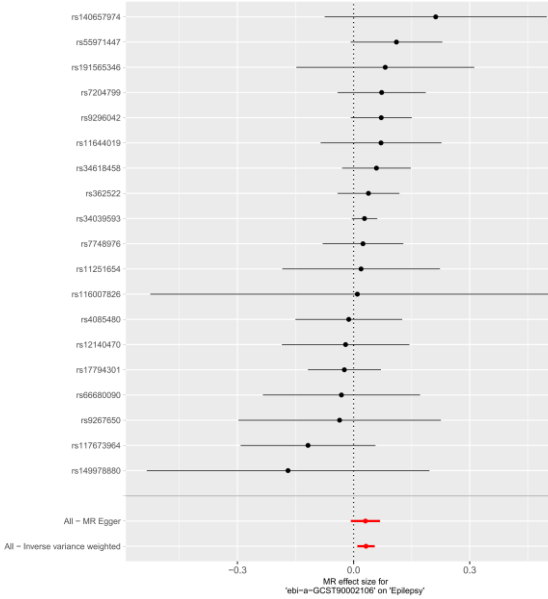
(28) CD4 on resting CD4 regulatory T cell on epilepsy



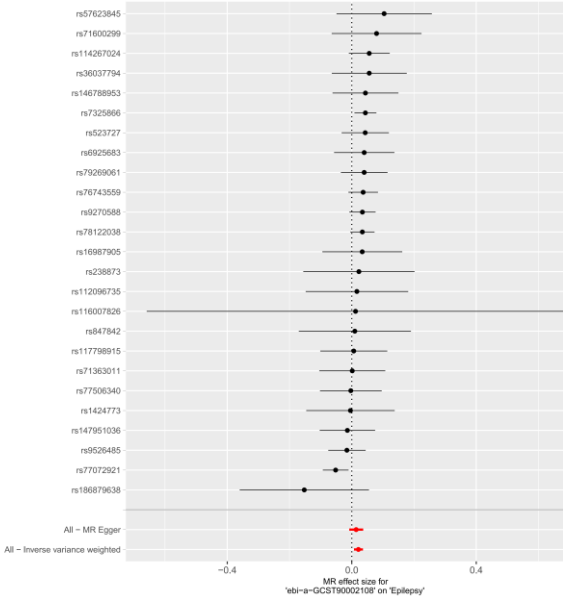
(29) CD4 on CD39+ secreting CD4 regulatory T cell on epilepsy



(30) HLA DR on plasmacytoid Dendritic Cell on epilepsy

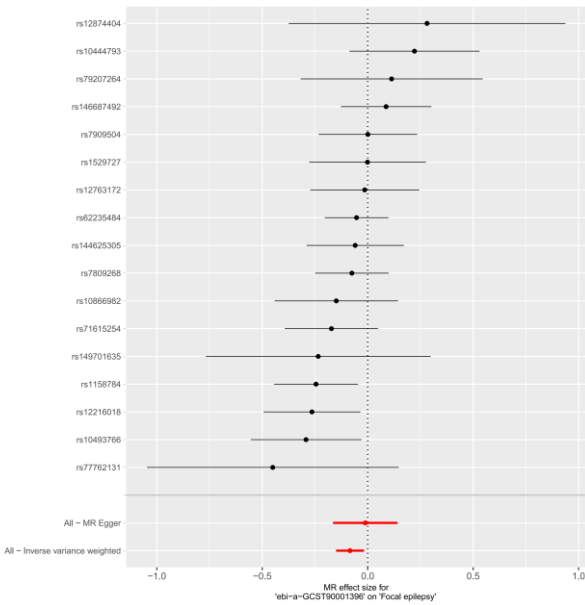


(31) HLA DR on Dendritic Cell on epilepsy

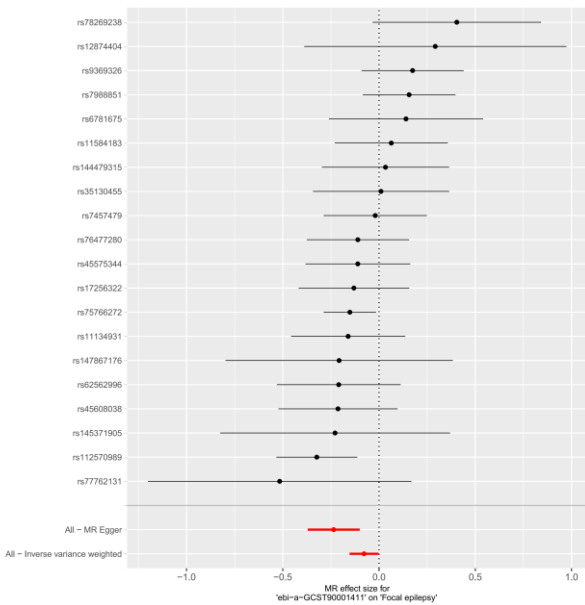


(32) HLA DR on CD33+ HLA DR+ CD14- on epilepsy

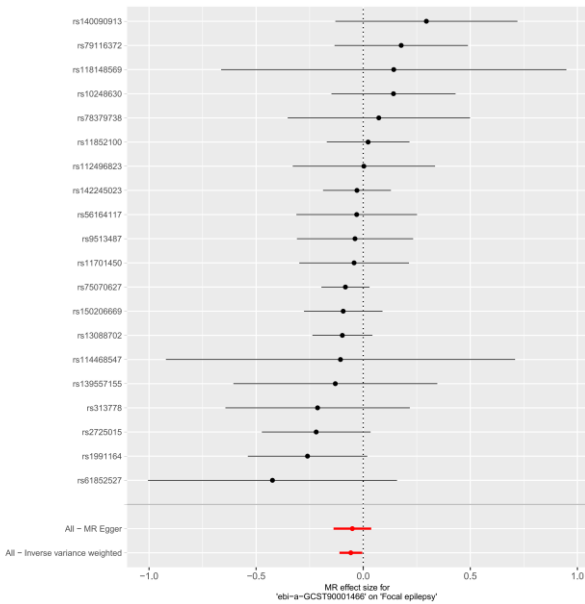
Fig. S10. Forest plots for the effect of immunophenotype on FE. CCR, C-C chemokine receptor; CD, cluster of differentiation; FE, focal epilepsy; HLA DR, human leukocyte antigen-DR isotype; Ig, immunoglobulin; MR, Mendelian randomization; SSC-A, side scatter area.



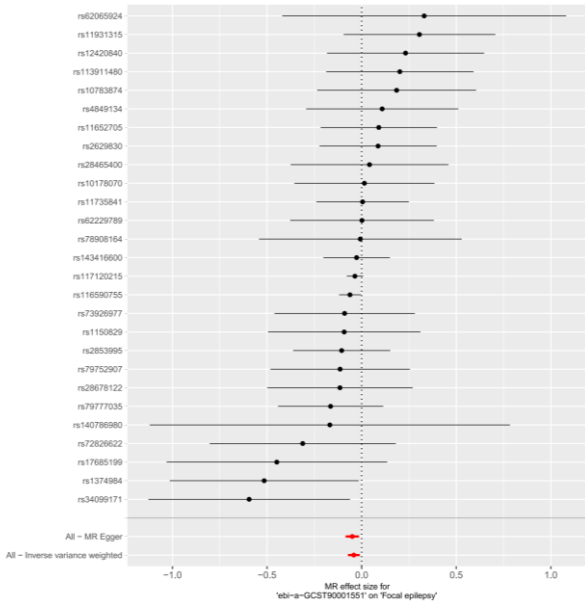
(1) IgD+ CD38- B cell Absolute Count on FE



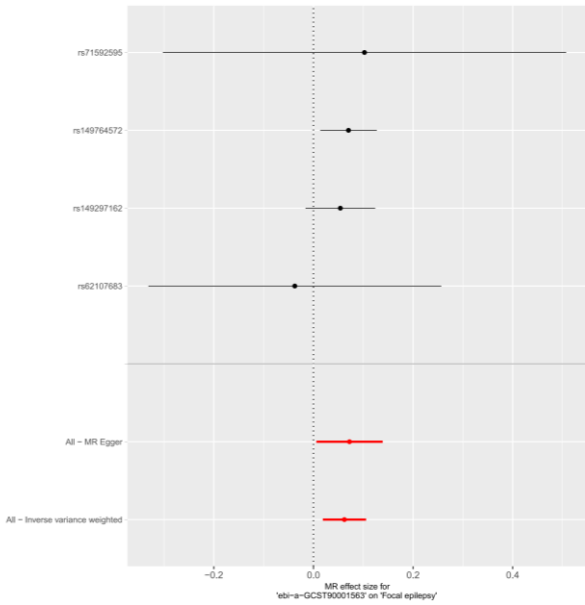
(2) IgD+ CD24+ B cell %B cell on FE



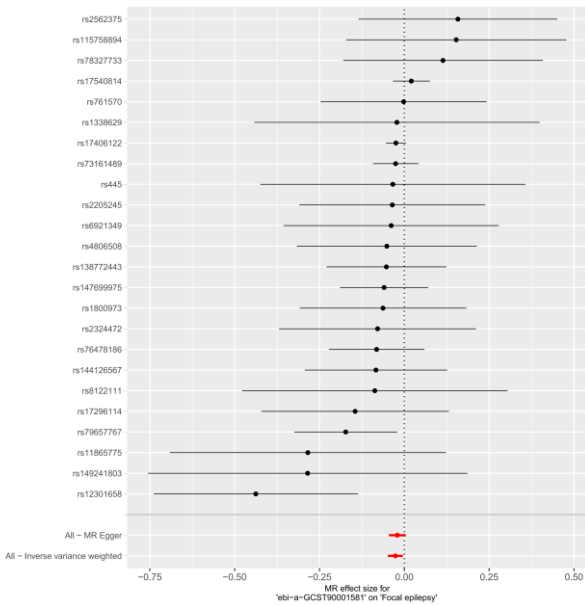
(3) CD86+ plasmacytoid Dendritic Cell Absolute Count on FE



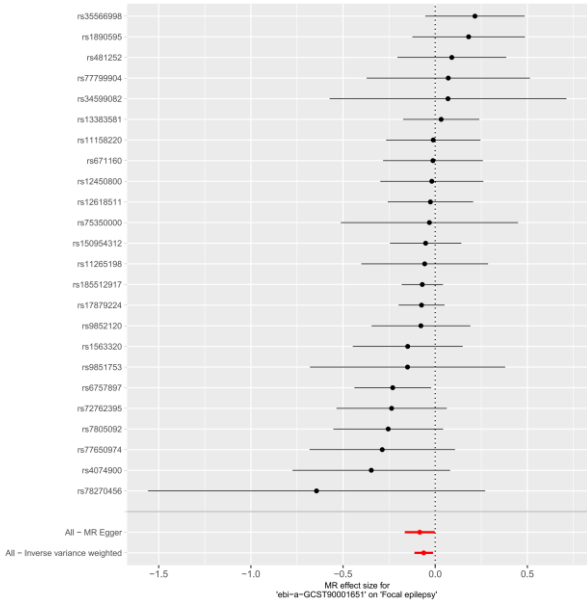
(4) Naive CD8+ T cell Absolute Count on FE



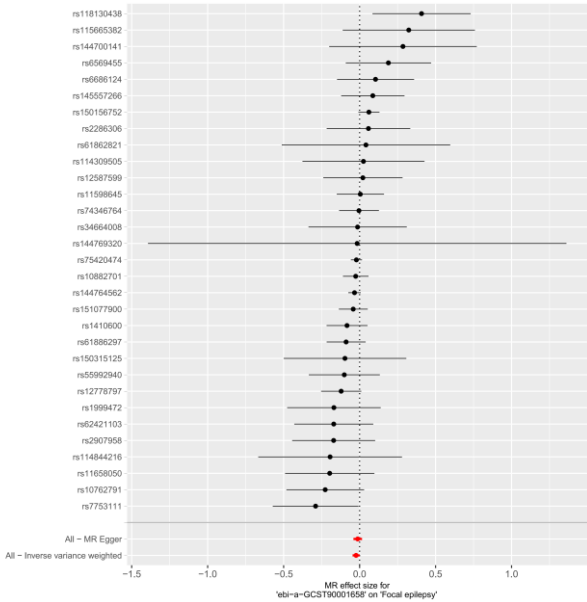
(5) Central Memory CD4-CD8- T cell Absolute Count on FE



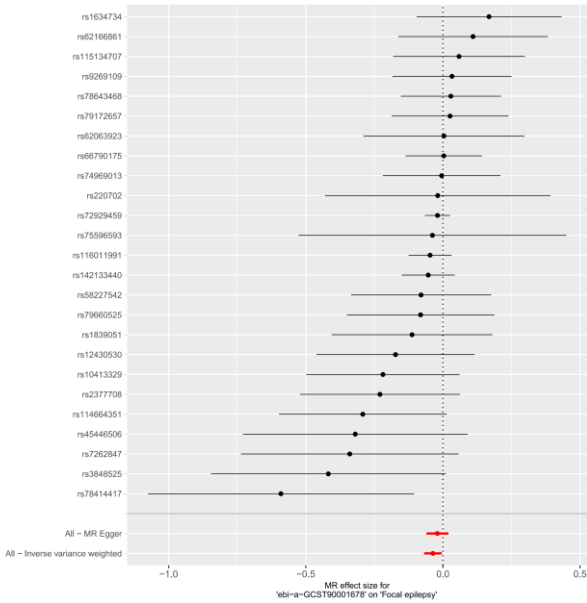
(6) CD14- CD16- Absolute Count on FE



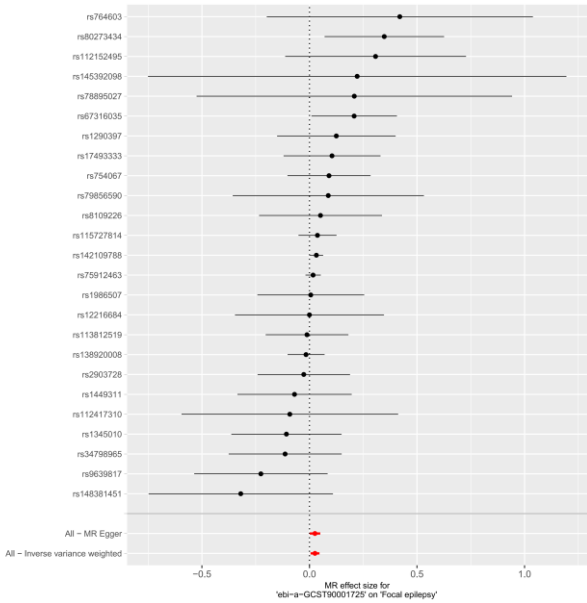
(7) Granulocyte Absolute Count on FE



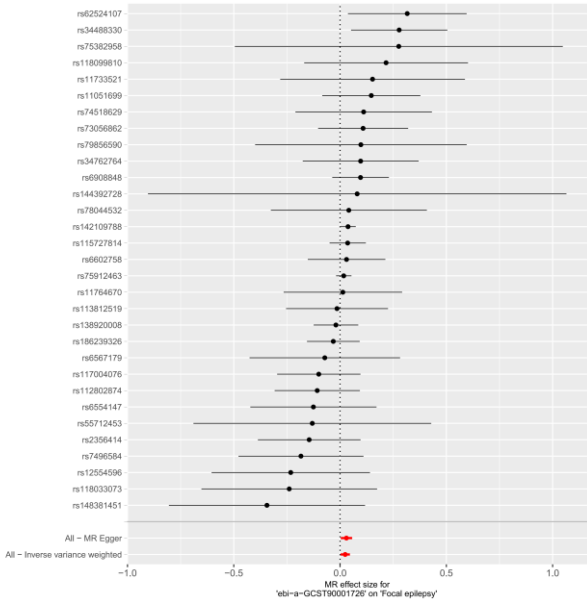
(8) CD39+ CD4+ T cell %T cell on FE



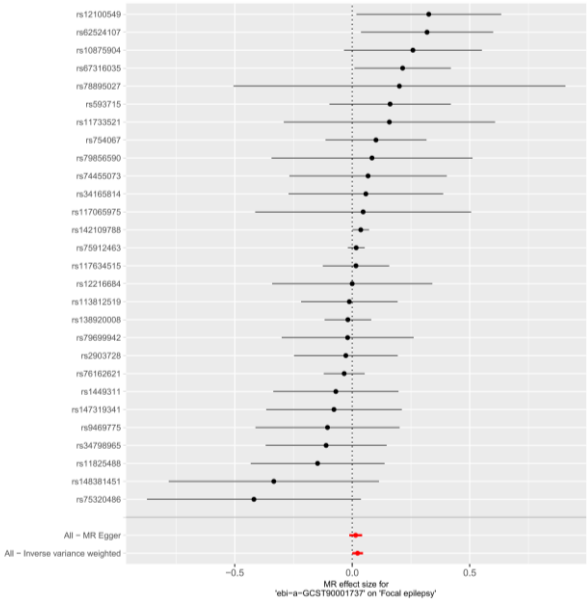
(9) CD28- CD25++ CD8+ T cell Absolute Count on FE



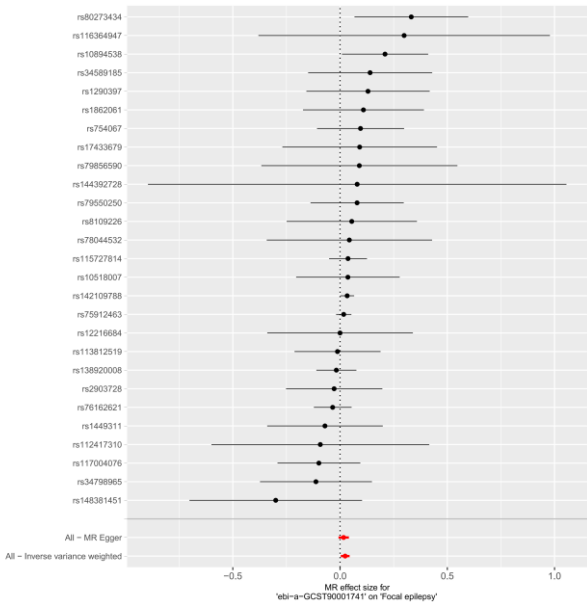
(10) CD19 on IgD+ CD24- B cell on FE



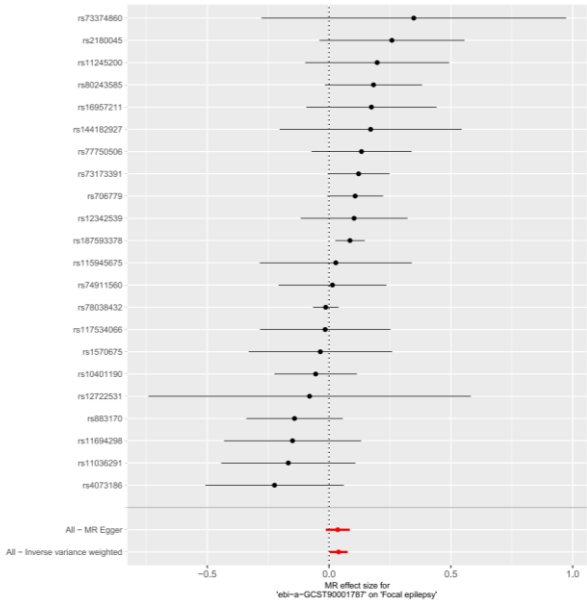
(11) CD19 on IgD+ CD38- B cell on FE



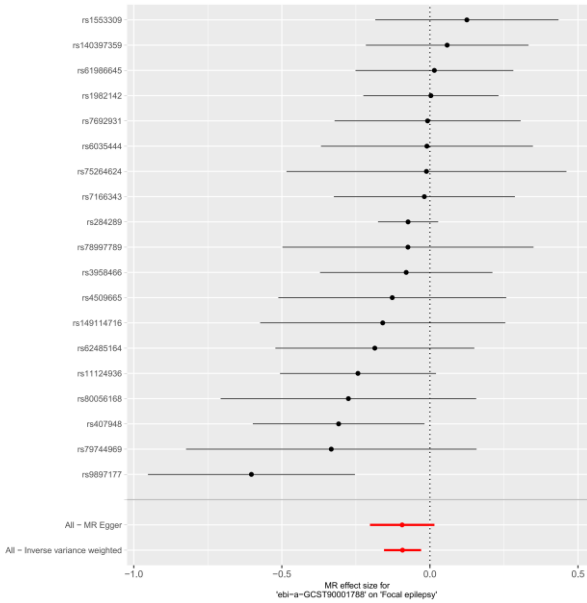
(12) CD19 on naive-mature B cell on FE



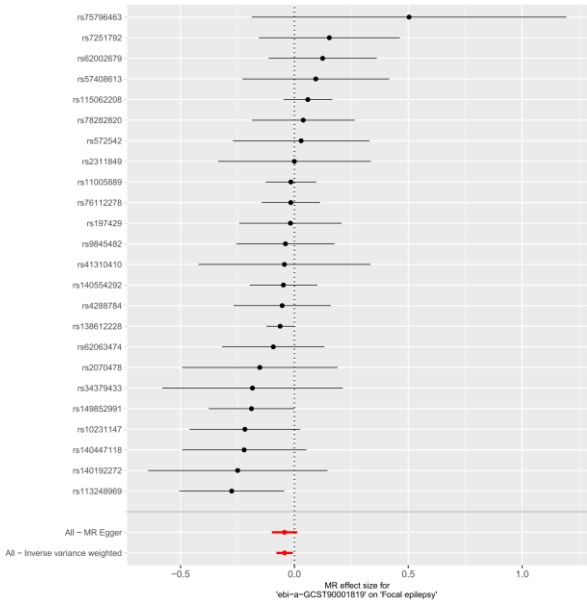
(13) CD19 on IgD+ B cell on FE



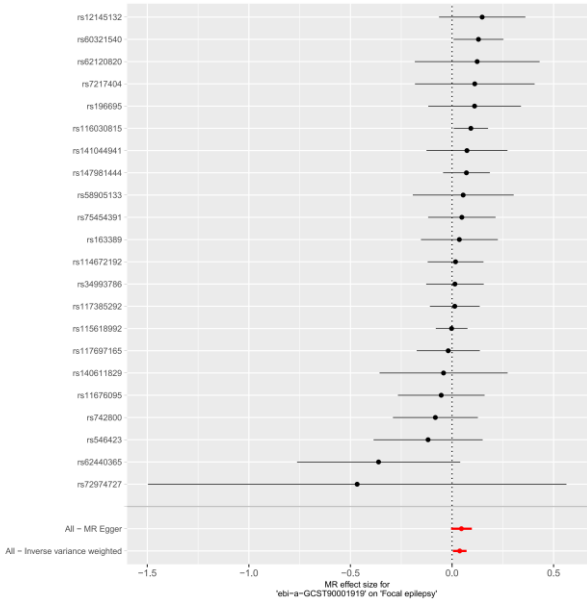
(14) CD25 on IgD- CD38- B cell on FE



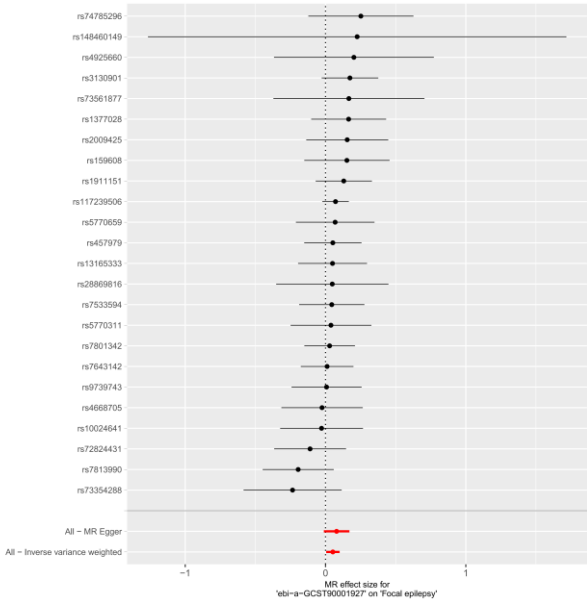
(15) CD25 on IgD- CD38+ B cell on FE



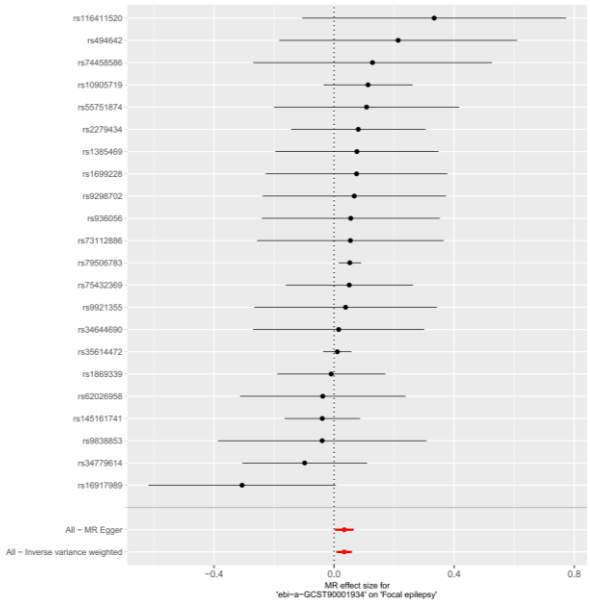
(16) CD38 on transitional B cell on FE



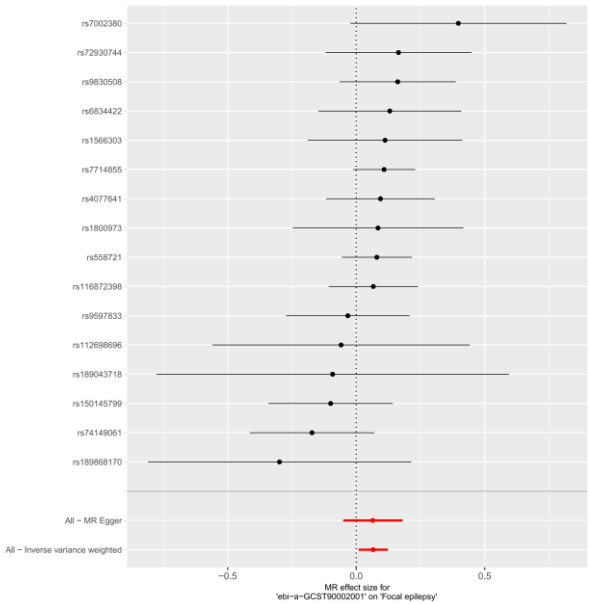
(17) CD45 on Natural Killer T on FE



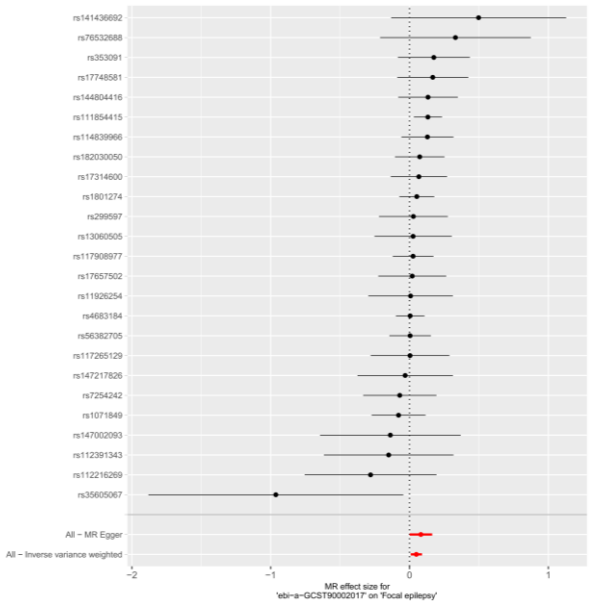
(18) CD127 on CD8+ T cell on FE



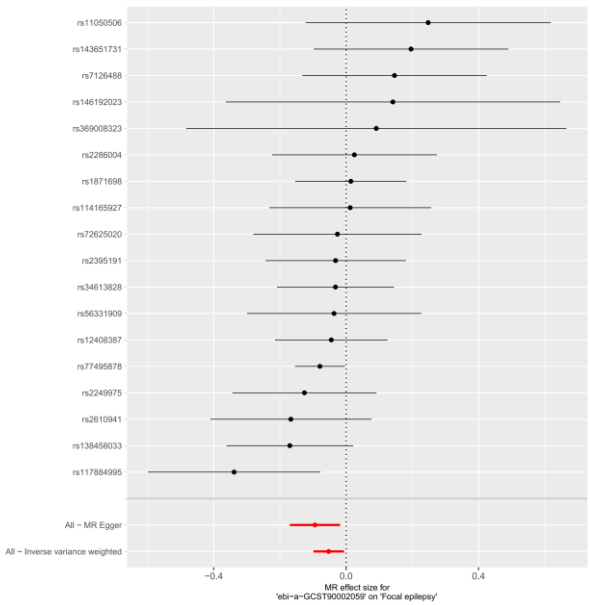
(19) CD25 on CD45RA+ CD4 not regulatory T cell on FE



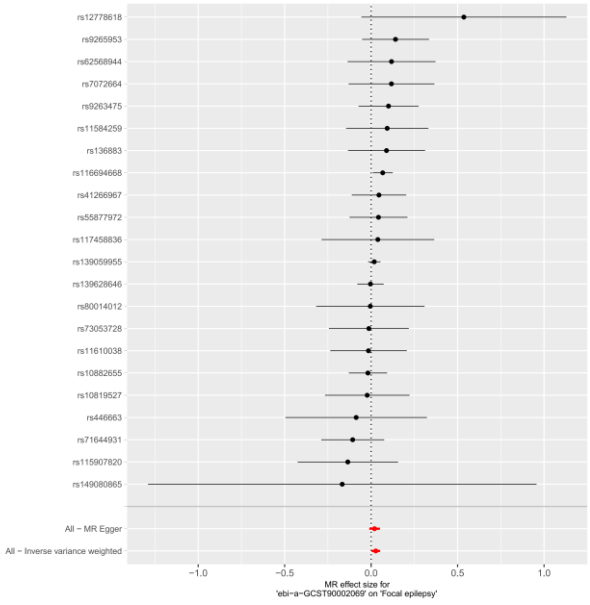
(20) CD64 on CD14- CD16- on FE



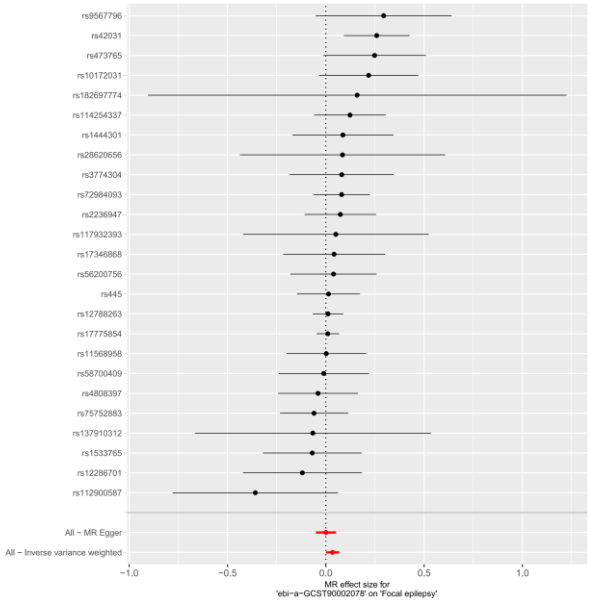
(21) CCR2 on monocyte on FE



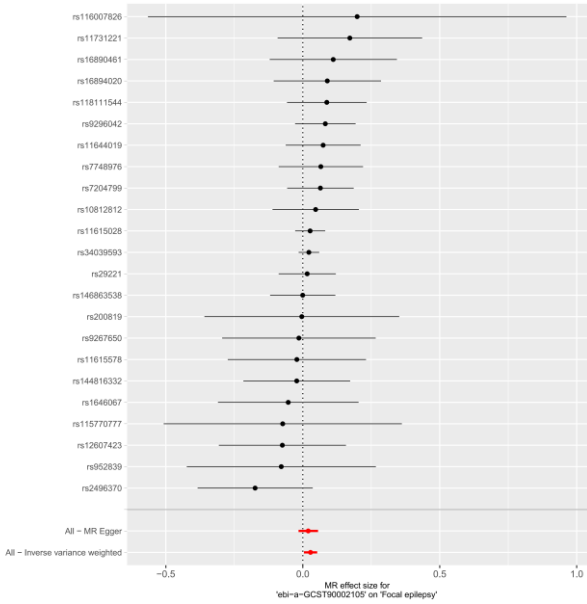
(22) CD8 on Natural Killer T on FE



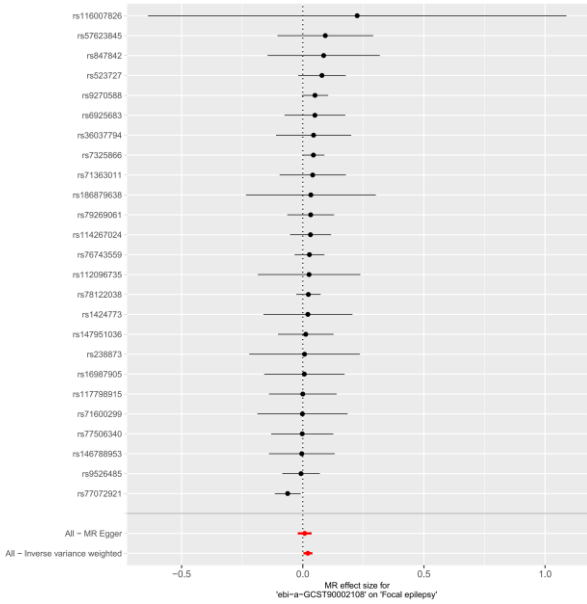
(23) CD4 on CD39+ secreting CD4 regulatory T cell on FE



(24) SSC-A on granulocyte on FE

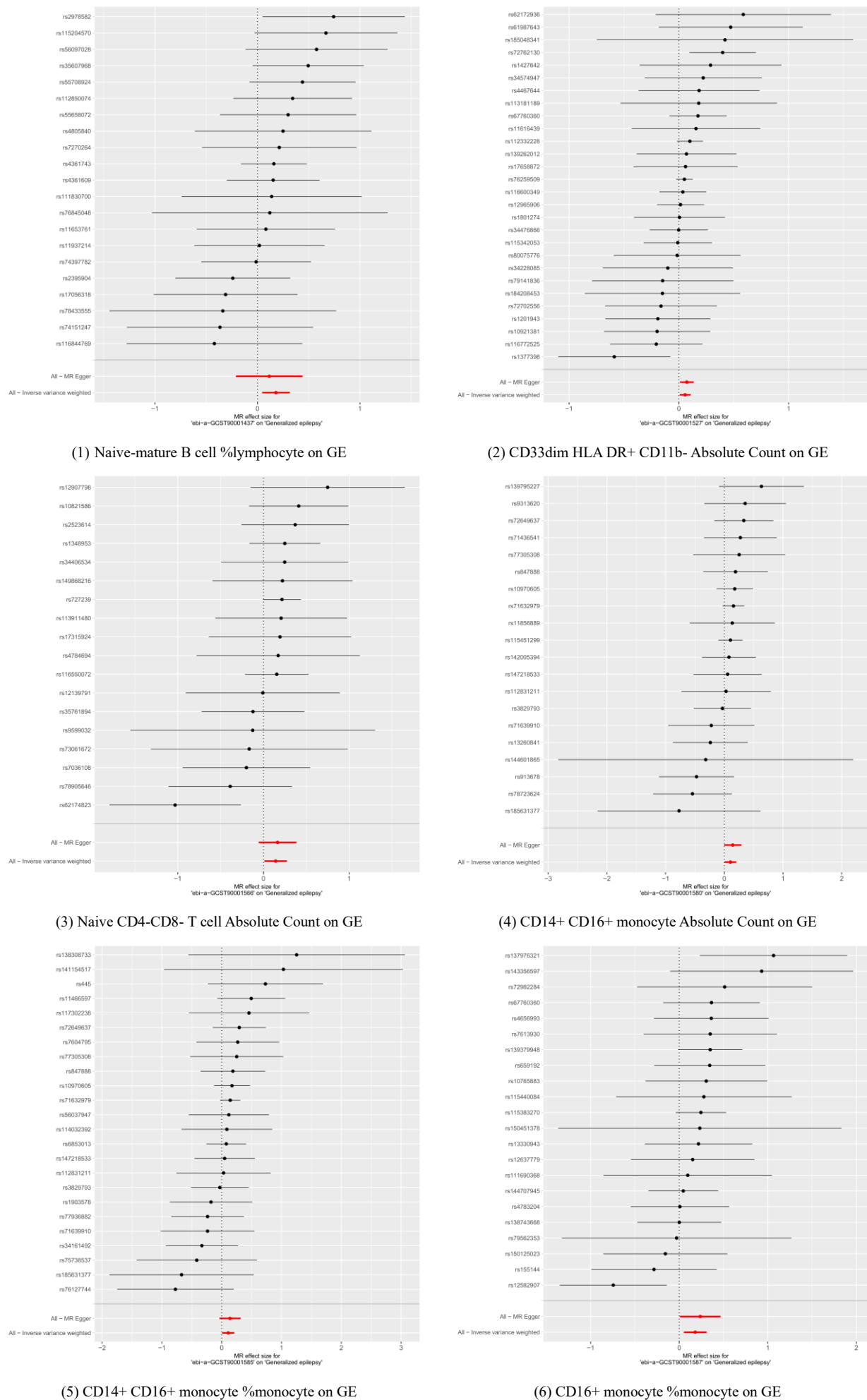


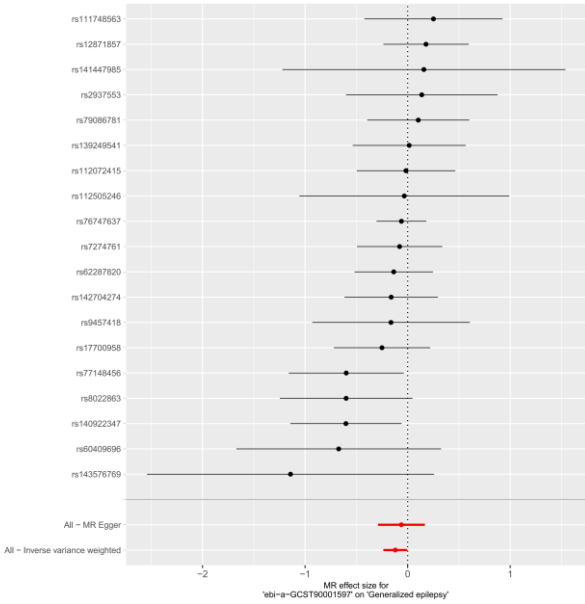
(25) HLA DR on plasmacytoid Dendritic Cell on FE



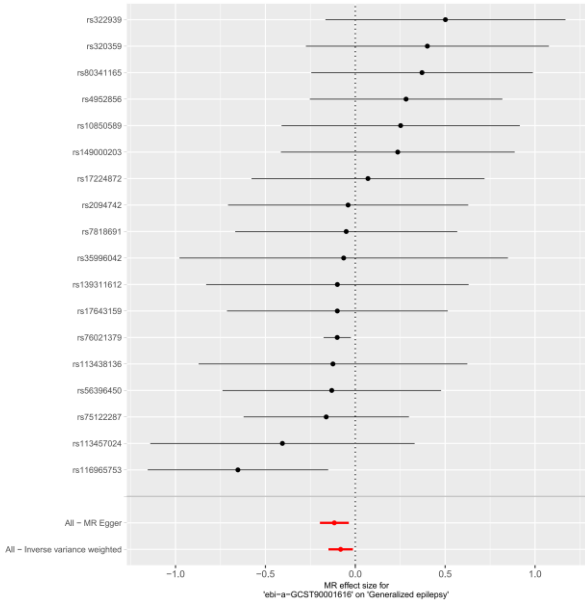
(26) HLA DR on CD33+ HLA DR+ CD14- on FE

Fig. S11. Forest plots for the effect of immunophenotype on GE. CCR, C-C chemokine receptor; CD, cluster of differentiation; FSC-A, forward scatter area; GE, generalized epilepsy; HLA DR, human leukocyte antigen-DR isotype; MR, Mendelian randomization; TCR, T cell receptor.

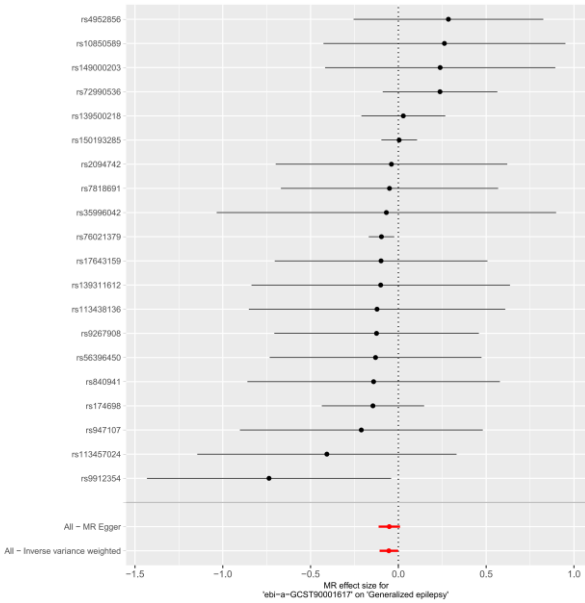




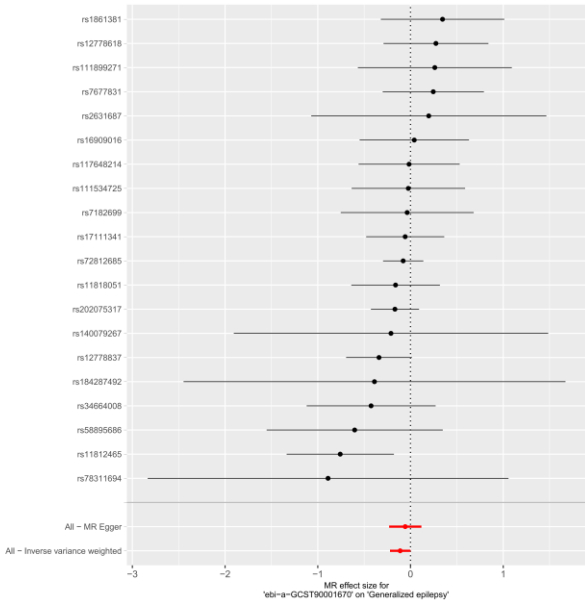
(7) CD8dim T cell %T cell on GE



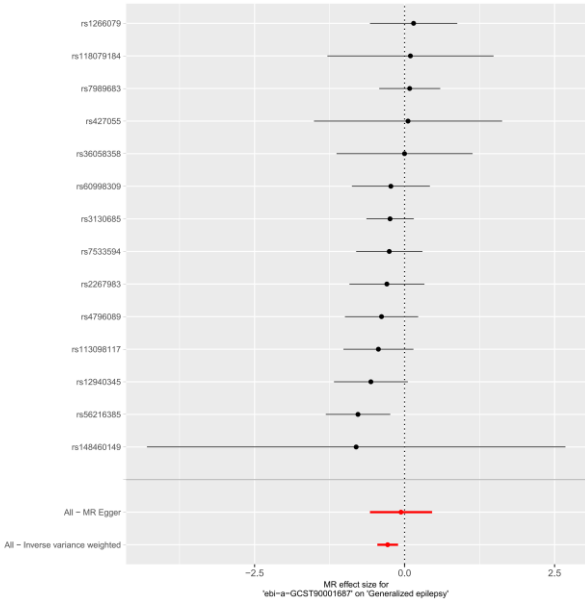
(8) TCRgd T cell %T cell on GE



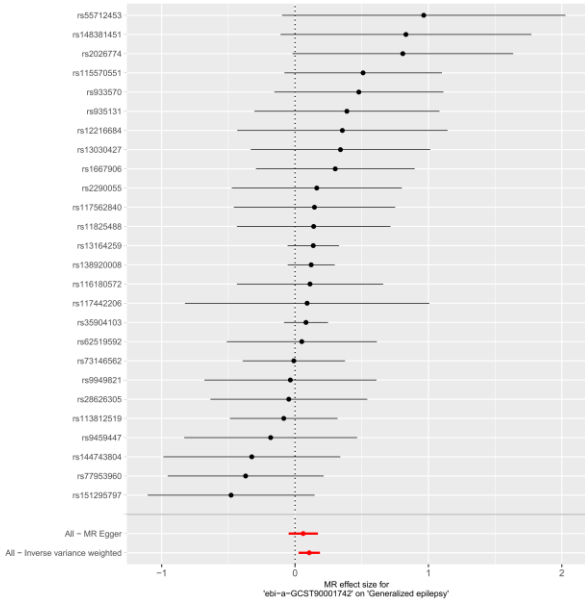
(9) TCRgd T cell %lymphocyte on GE



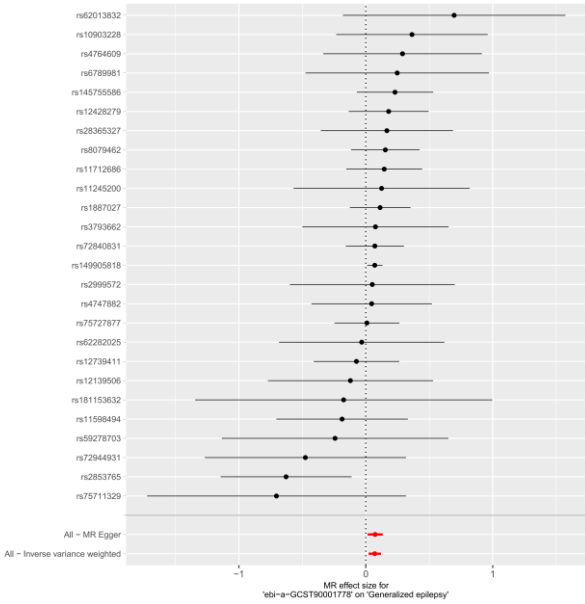
(10) CD39+ CD8+ T cell %T cell on GE



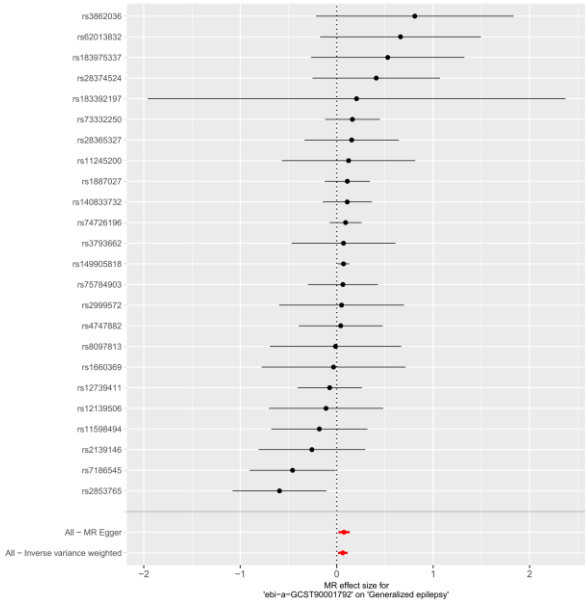
(11) CD28- CD8+ T cell Absolute Count on GE



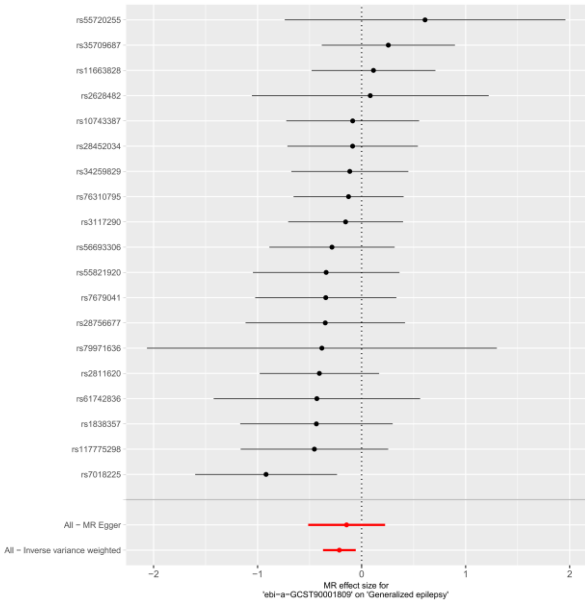
(12) CD19 on transitional B cell on GE



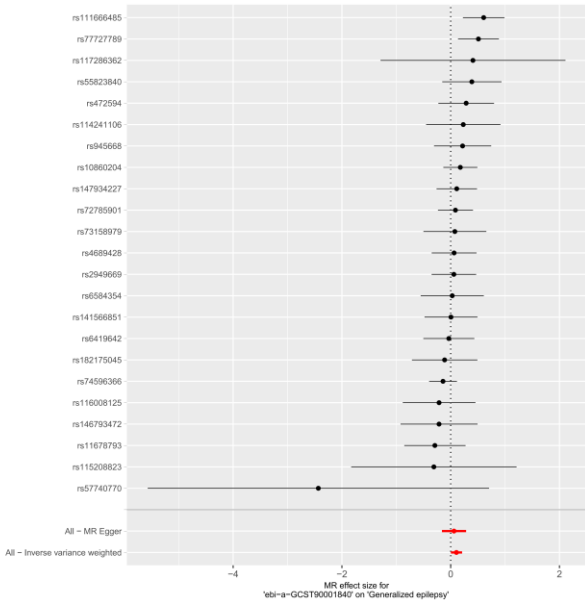
(13) CD25 on IgD+ CD24+ B cell on GE



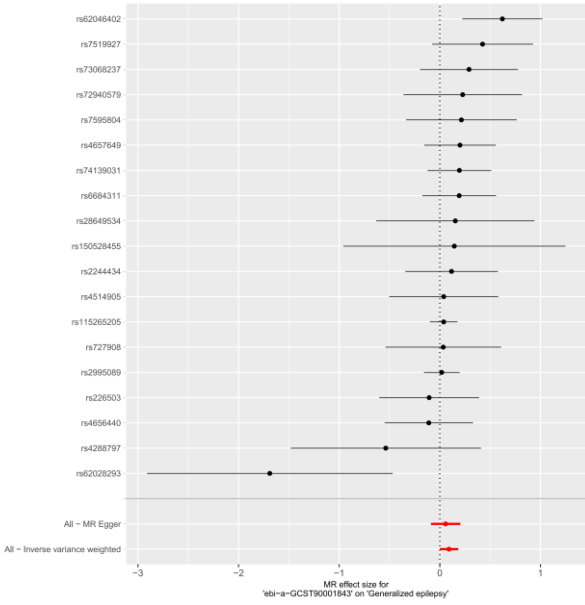
(14) CD25 on unswitched memory B cell on GE



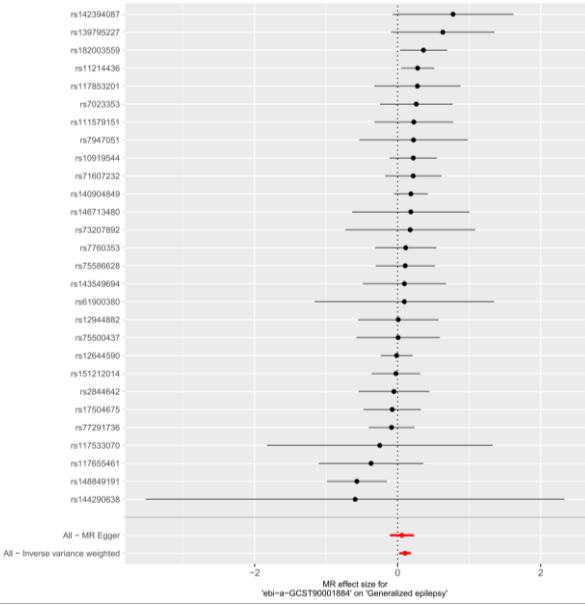
(15) CD38 on CD20- B cell on GE



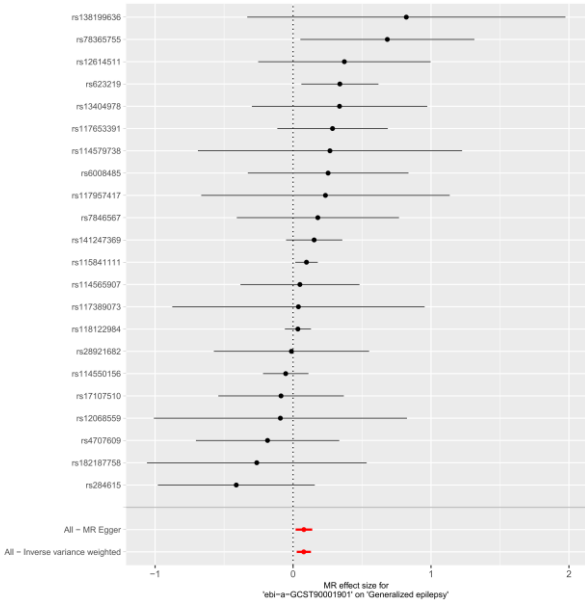
(16) CD3 on Terminally Differentiated CD8+ T cell on GE



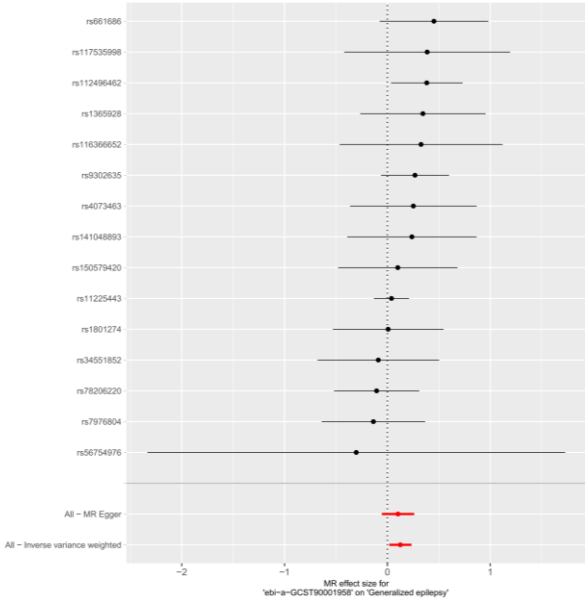
(17) CD3 on Effector Memory CD4+ T cell on GE



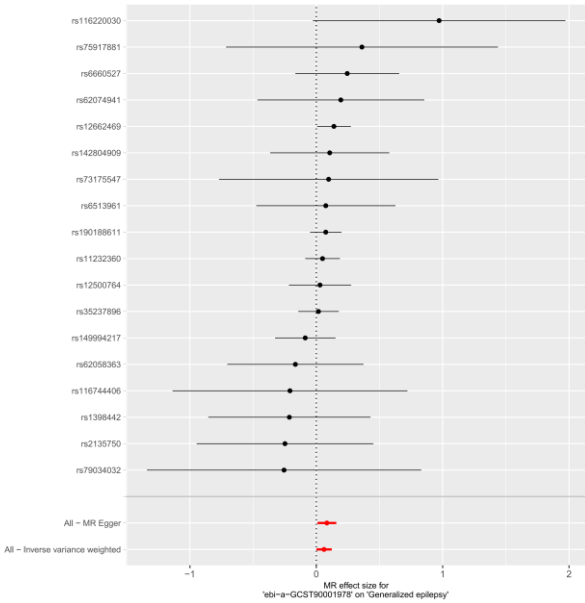
(18) CD16-CD56 on Natural Killer on GE



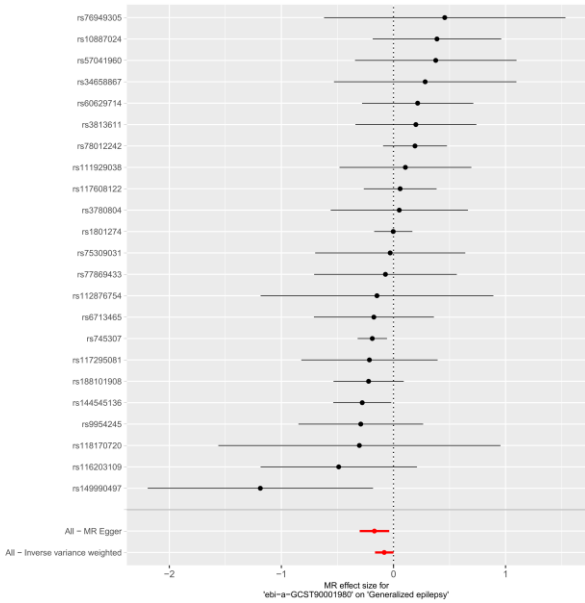
(19) CD28 on CD39+ resting CD4 regulatory T cell on GE



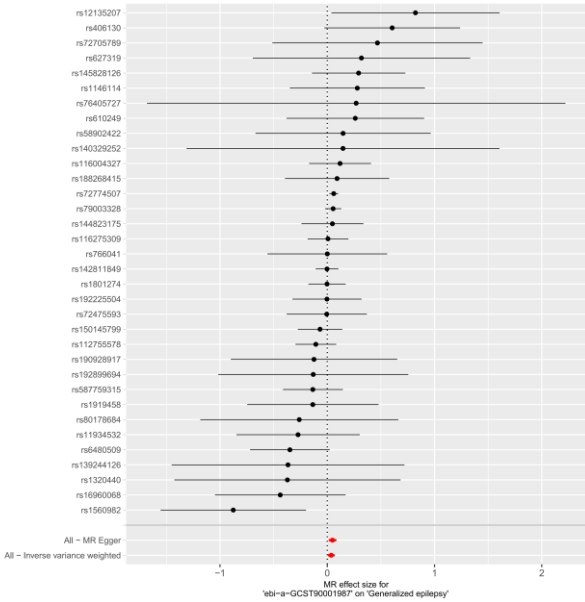
(20) CD4 on monocyte on GE



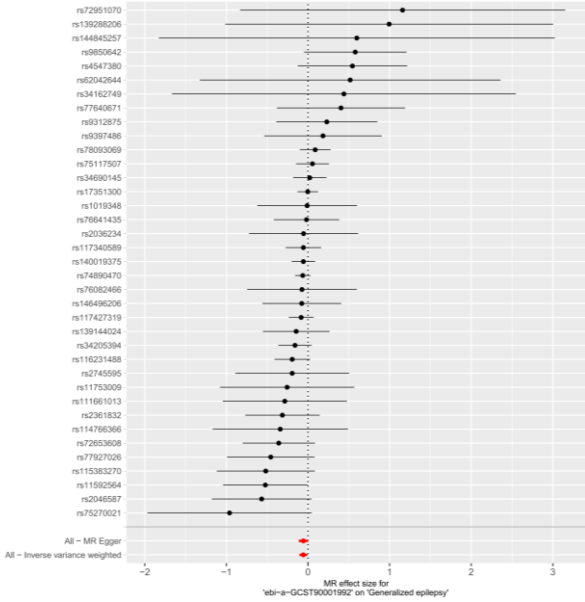
(21) FSC-A on HLA DR+ CD8+ T cell on GE



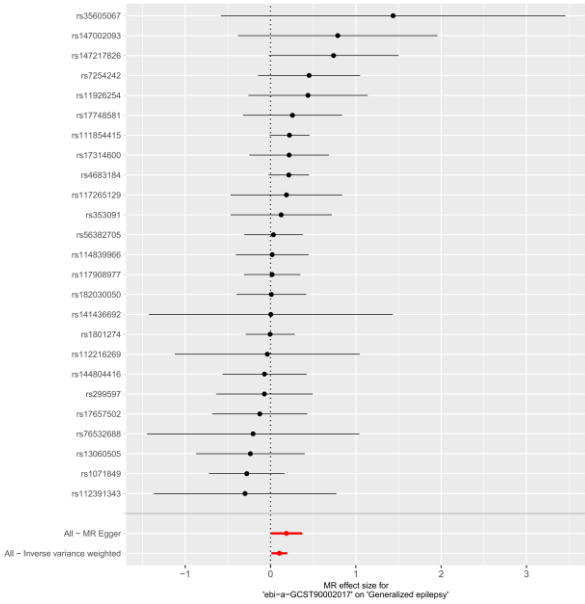
(22) CD40 on CD14+ CD16- monocyte on GE



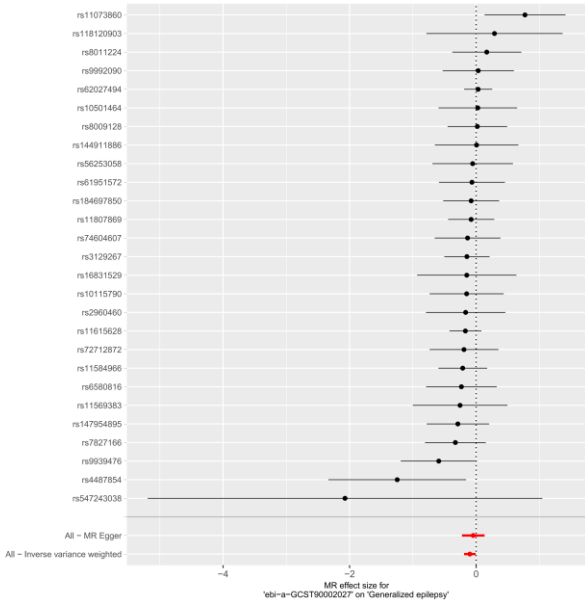
(23) CD64 on CD14+ CD16- monocyte on GE



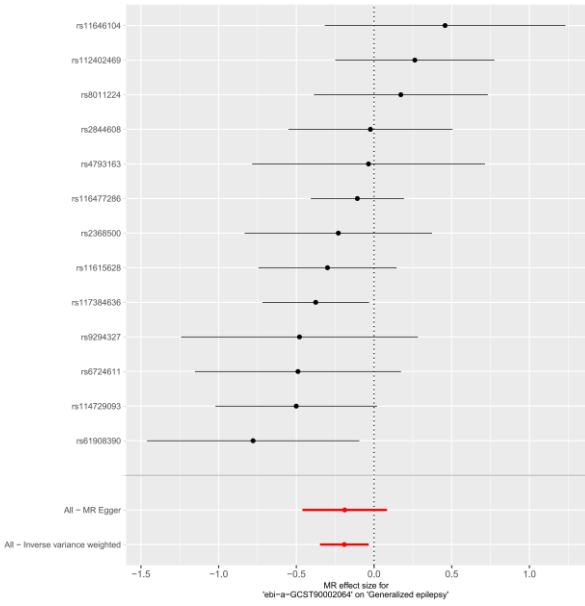
(24) CCR2 on CD14+ CD16+ monocyte on GE



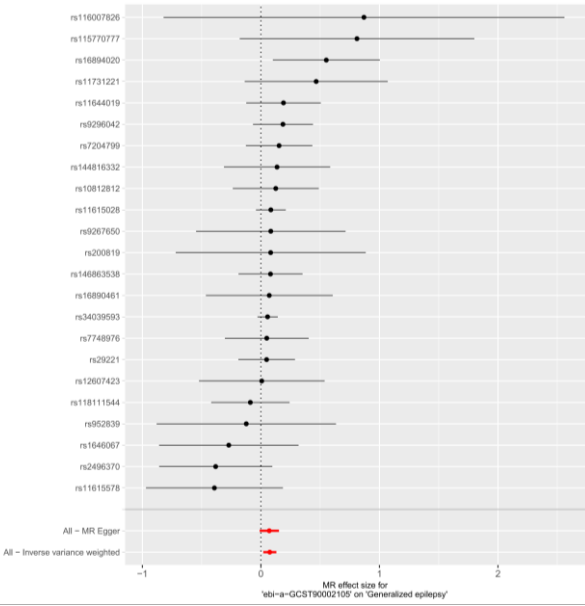
(25) CCR2 on monocyte on GE



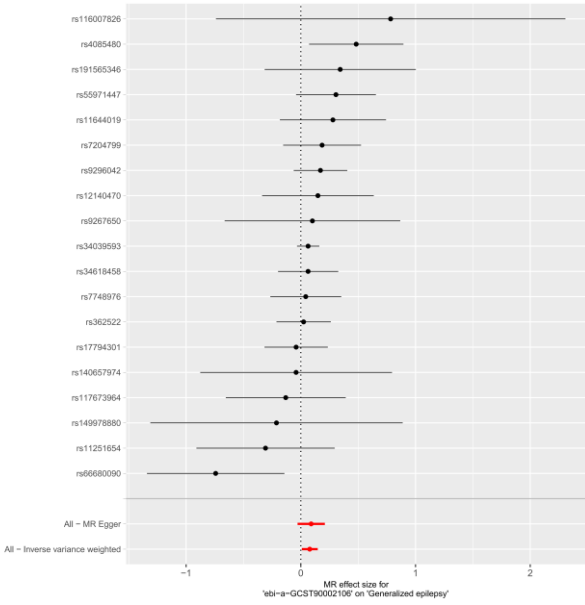
(26) CD4 on CD45RA+ CD4+ T cell on GE



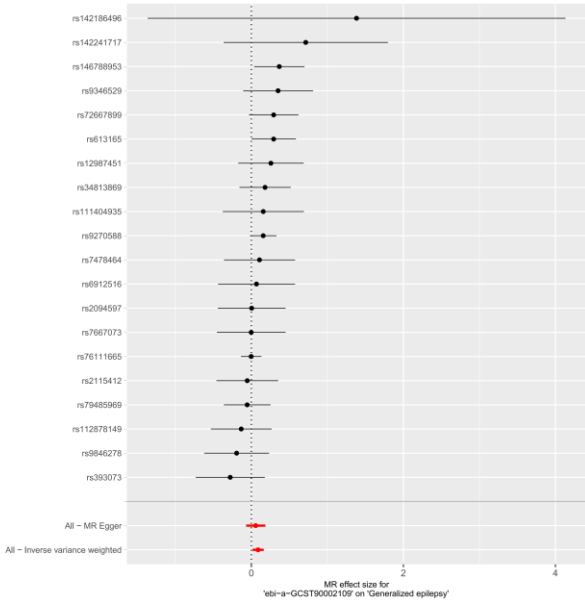
(27) CD4 on resting CD4 regulatory T cell on GE



(28) HLA DR on plasmacytoid Dendritic Cell on GE

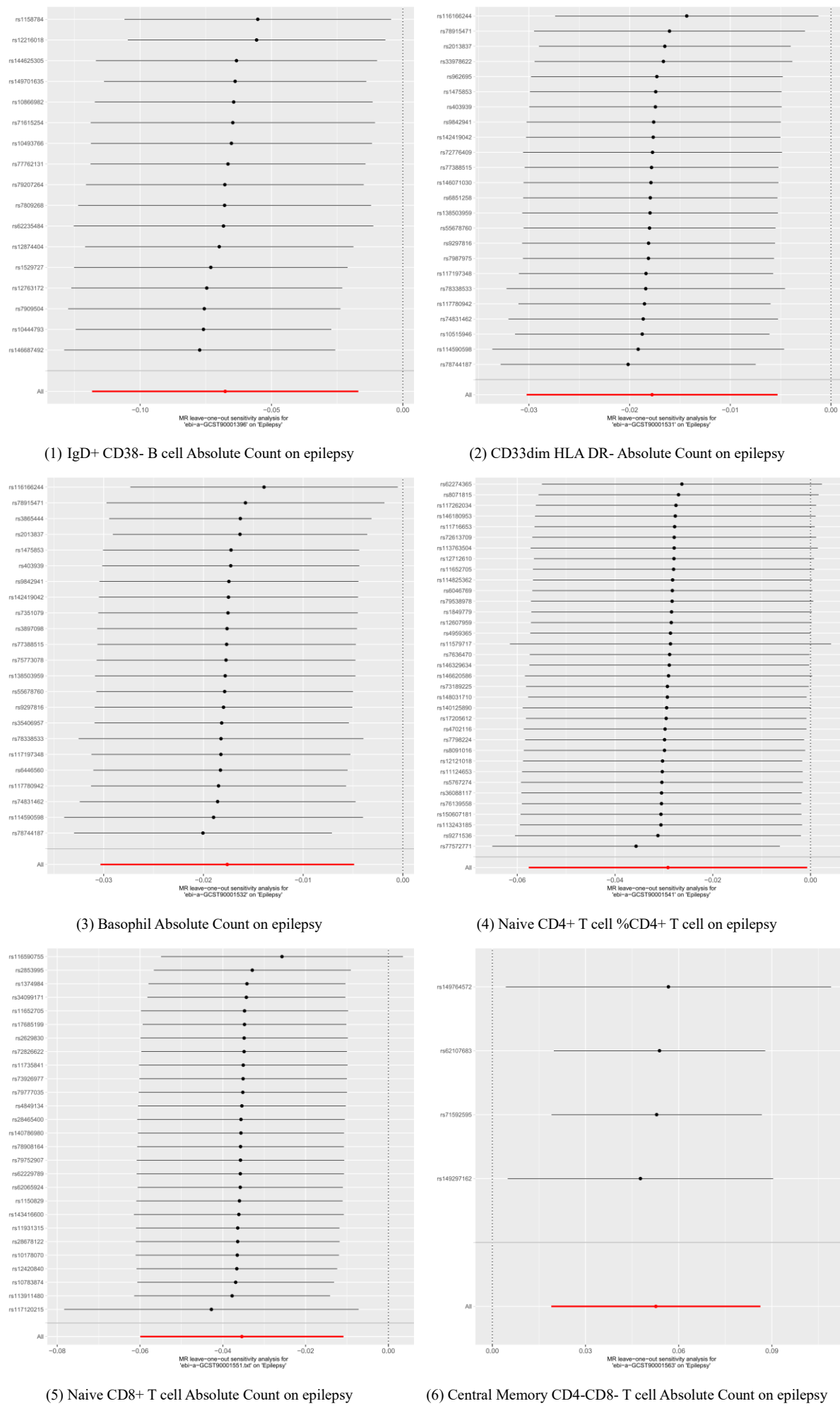


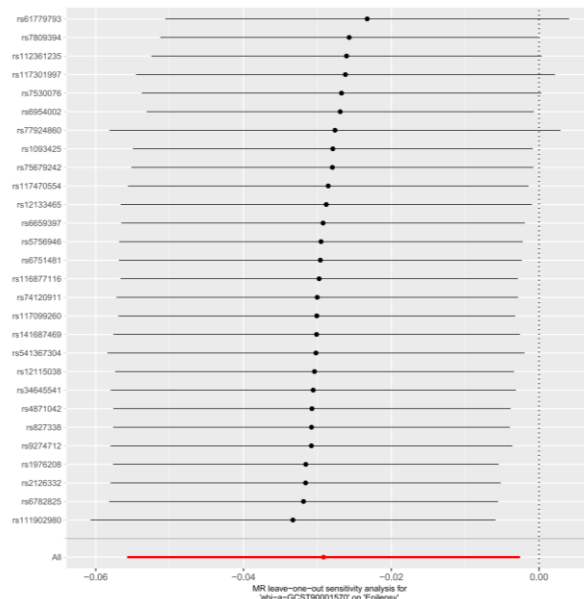
(29) HLA DR on Dendritic Cell on GE



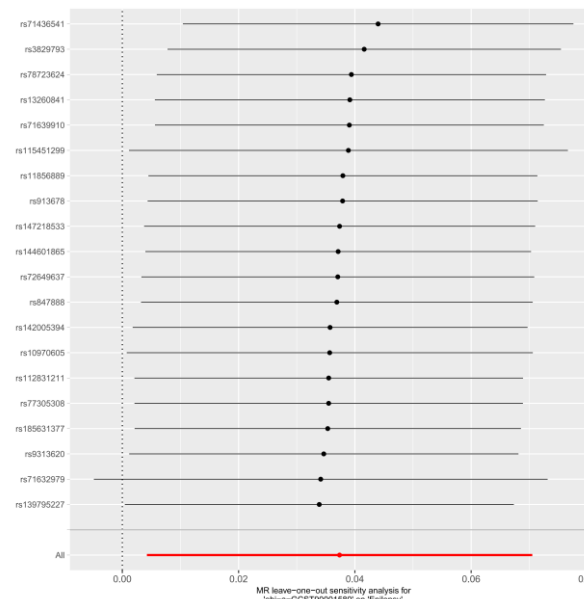
(30) HLA DR on CD33+ HLA DR+ CD14dim on GE

Fig. S12. MR leave-one-out sensitivity analysis immunophenotype on epilepsy. CD, cluster of differentiation; HLA DR, human leukocyte antigen-DR isotype; Ig, immunoglobulin; MR, Mendelian randomization.

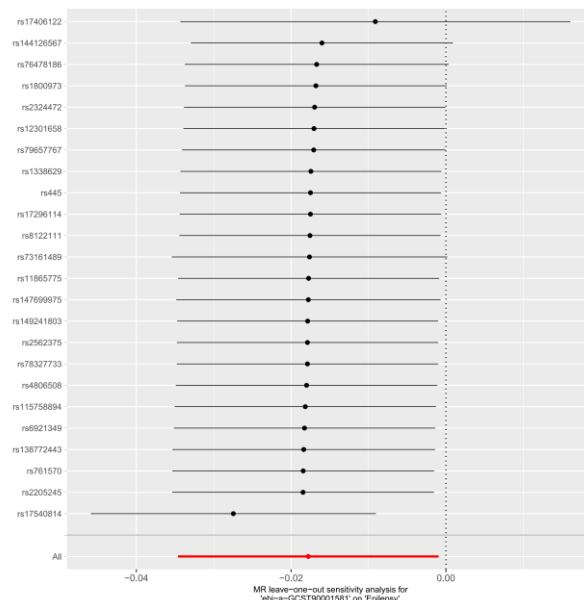




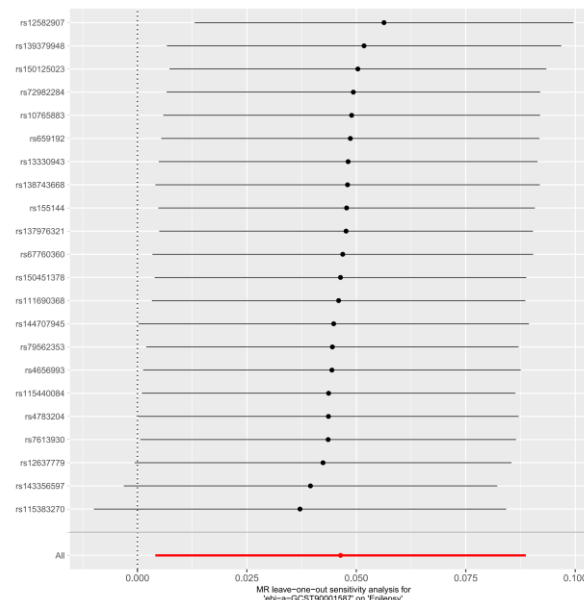
(7)Effector Memory CD4-CD8- T cell %CD4-CD8- T cell on epilepsy



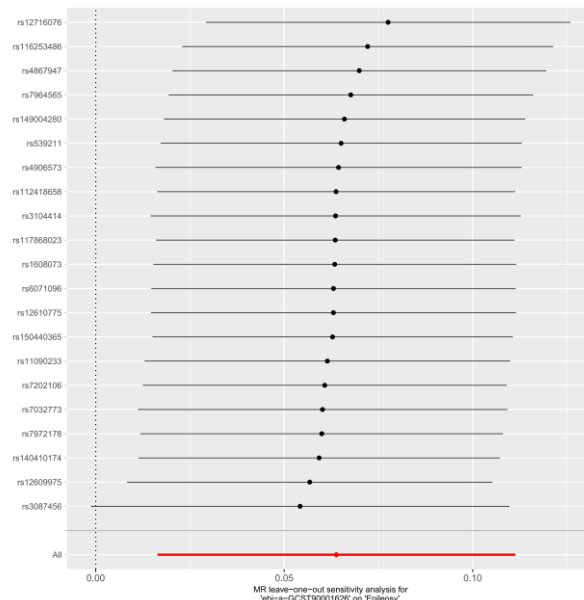
(8) CD14+ CD16+ monocyte Absolute Count on epilepsy



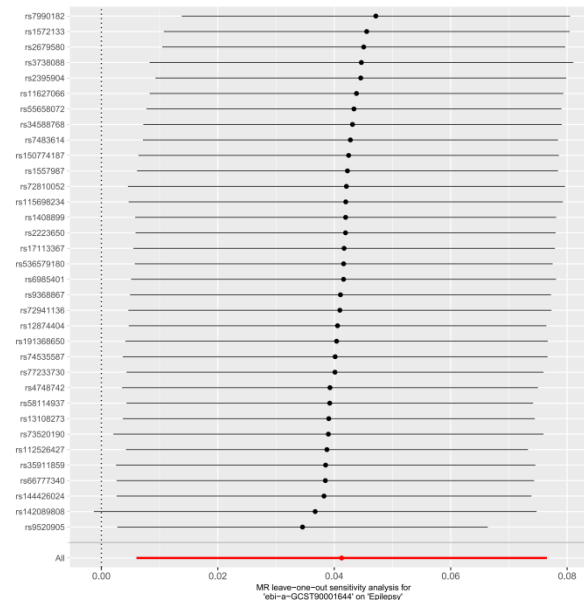
(9) CD14- CD16- Absolute Count on epilepsy



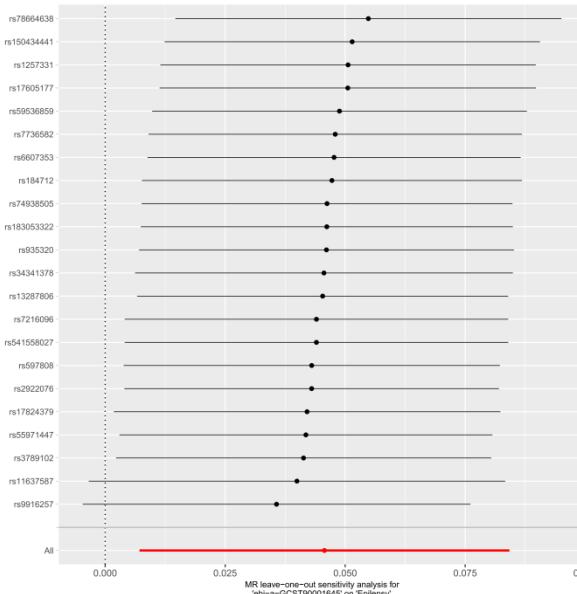
(10) CD16+ monocyte %monocyte on epilepsy



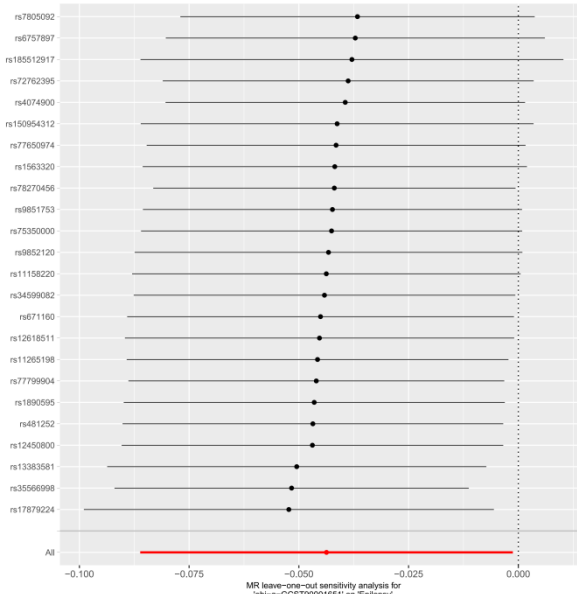
(11) HLA DR+ CD4+ T cell %lymphocyte on epilepsy



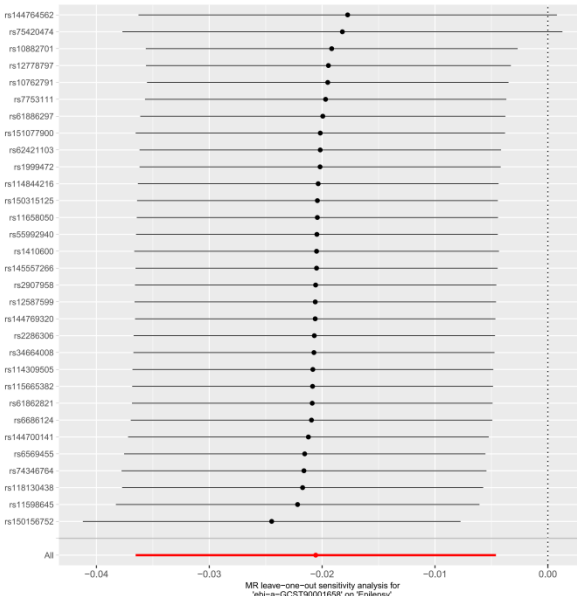
(12) B cell %lymphocyte on epilepsy



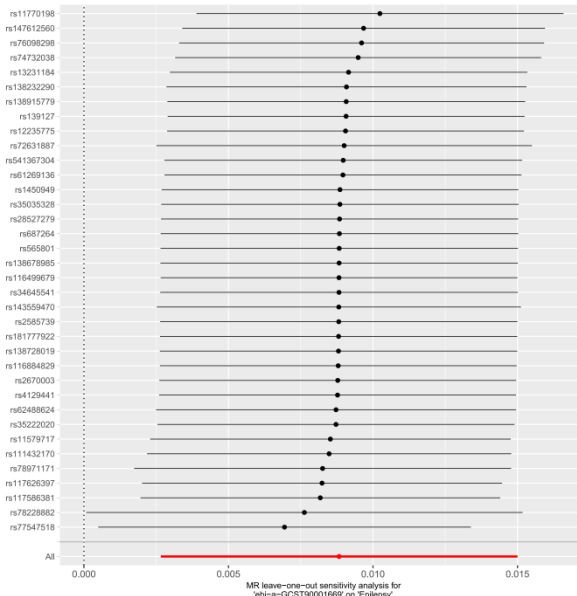
(13) Natural Killer Absolute Count on epilepsy



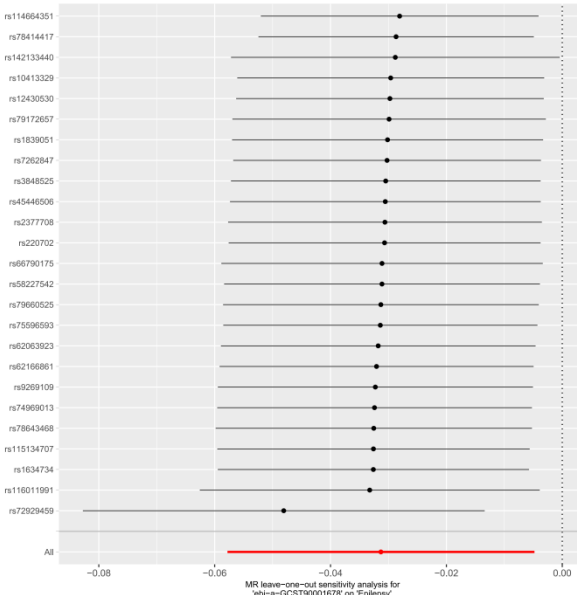
(14) Granulocyte Absolute Count on epilepsy



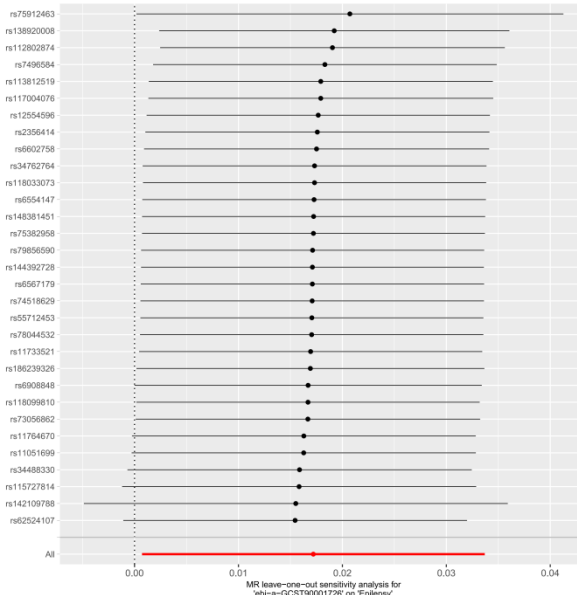
(15) CD39+ CD4+ T cell %T cell on epilepsy



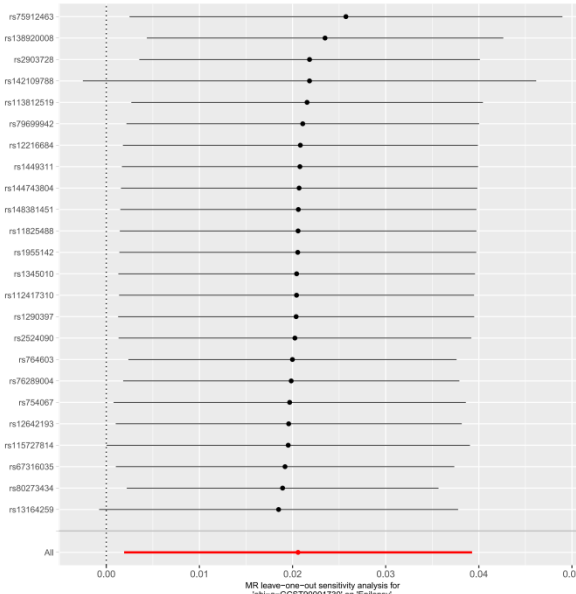
(16) CD28+ CD45RA- CD8dim T cell Absolute Count on epilepsy



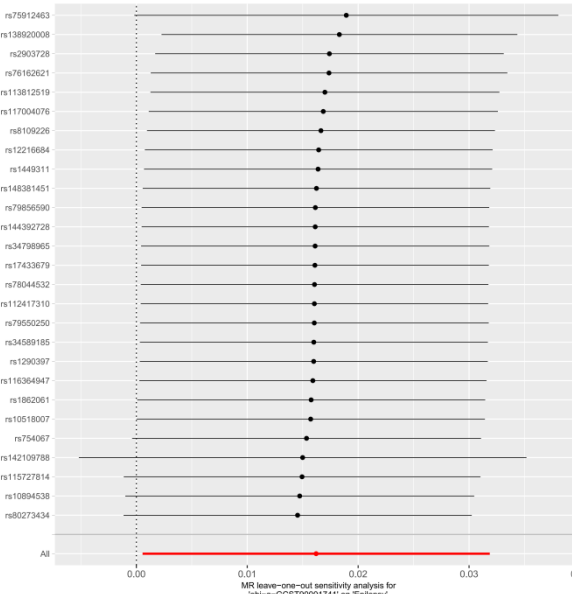
(17) CD28- CD25++ CD8+ T cell Absolute Count on epilepsy



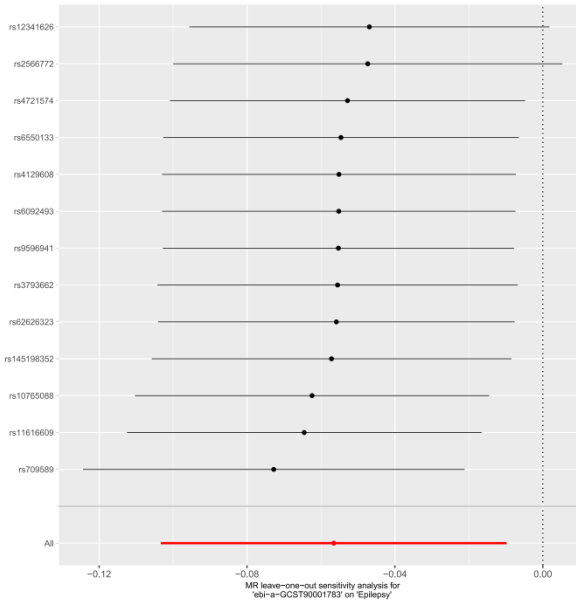
(18) CD19 on IgD+ CD38- B cell on epilepsy



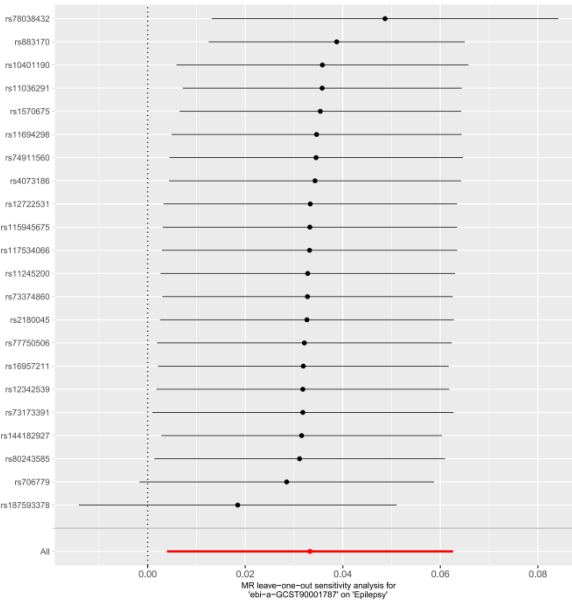
(19) CD19 on IgD+ CD38dim B cell on epilepsy



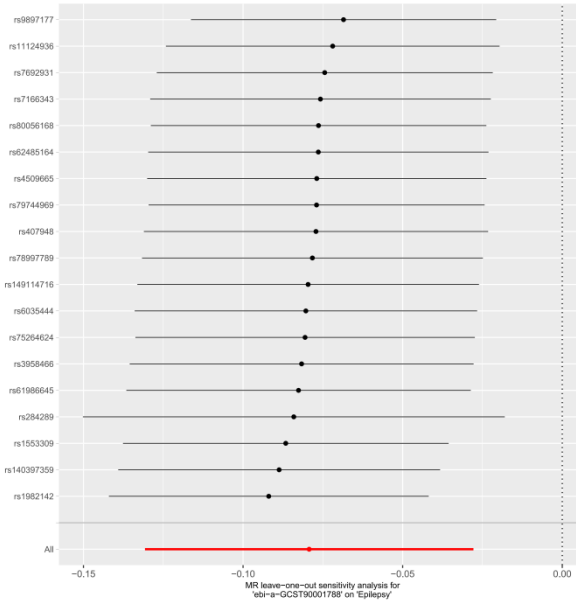
(20) CD19 on IgD+ B cell on epilepsy



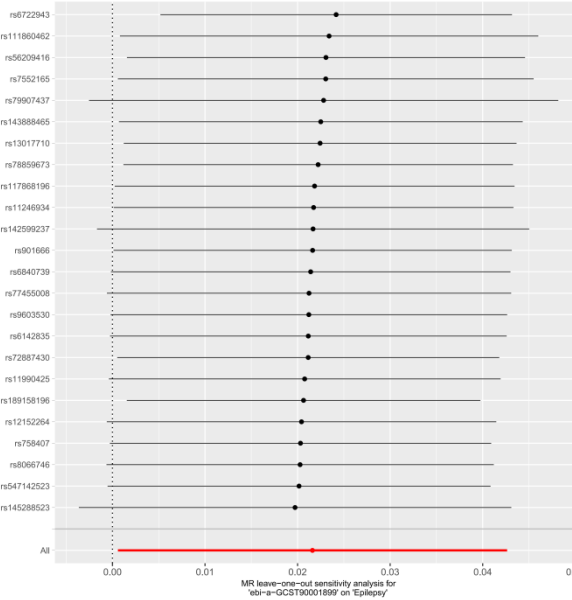
(21) CD25 on IgD+ CD38+ B cell on epilepsy



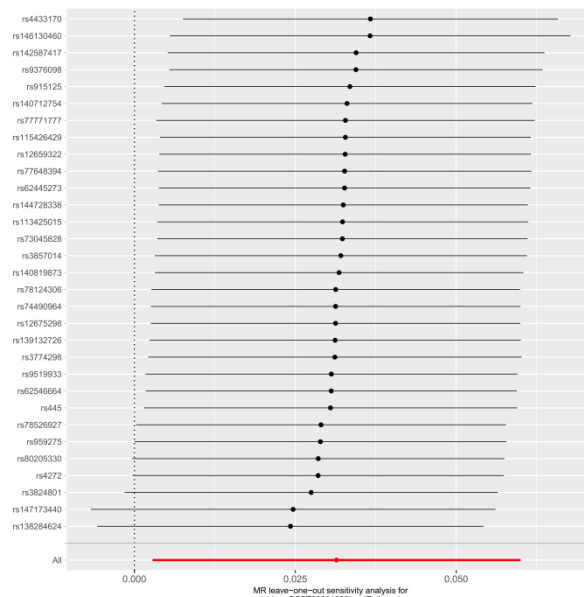
(22) CD25 on IgD- CD38- B cell on epilepsy



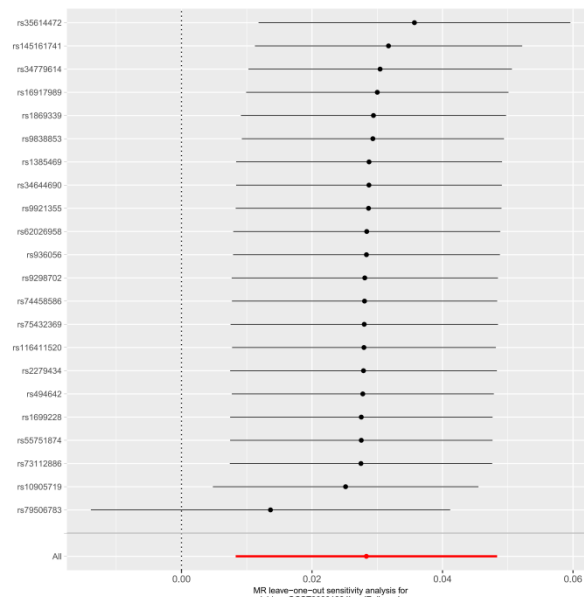
(23) CD25 on IgD- CD38+ B cell on epilepsy



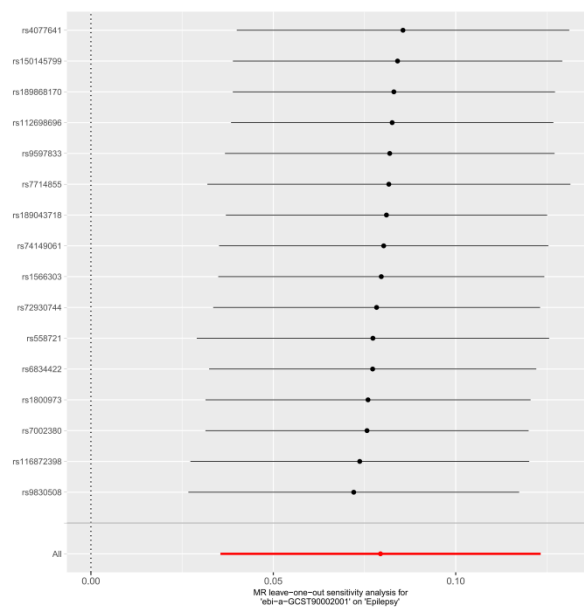
(24) CD28 on CD4 regulatory T cell on epilepsy



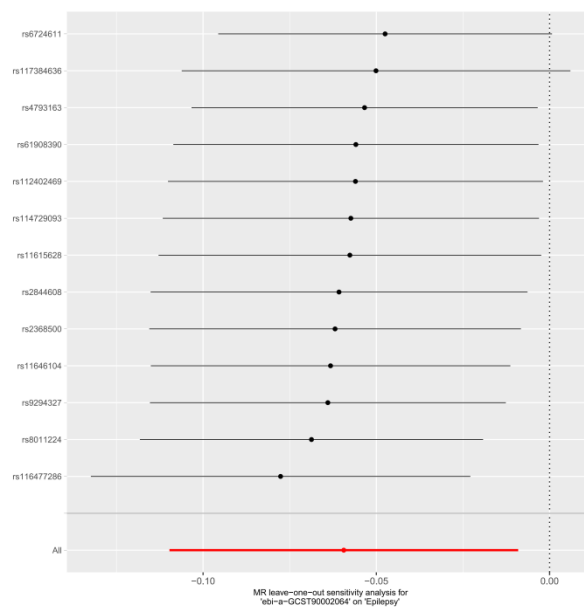
(25) CD127 on granulocyte on epilepsy



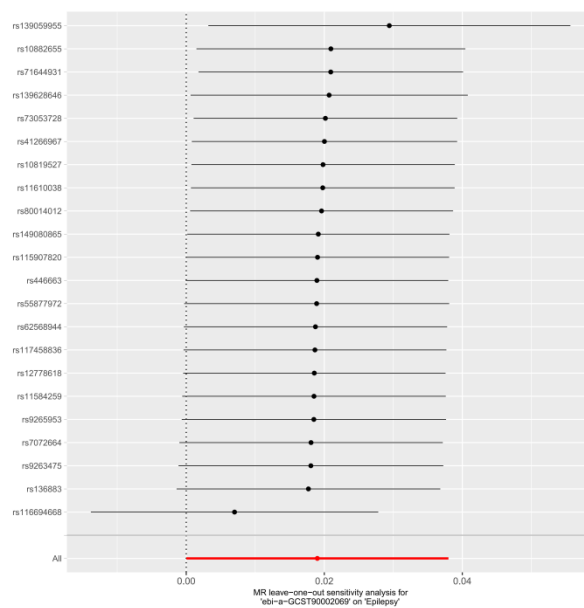
(26) CD25 on CD45RA+ CD4 not regulatory T cell on epilepsy



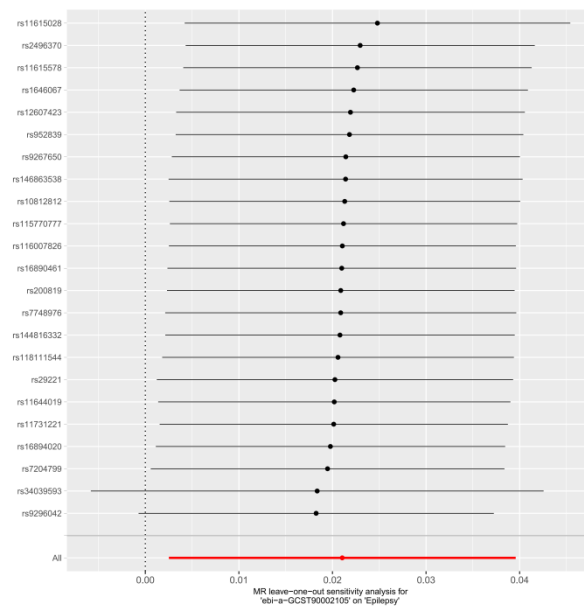
(27) CD64 on CD14- CD16- on epilepsy



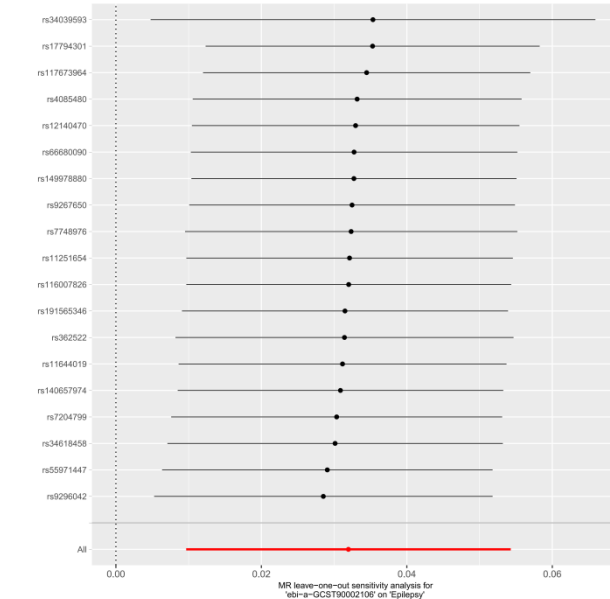
(28) CD4 on resting CD4 regulatory T cell on epilepsy



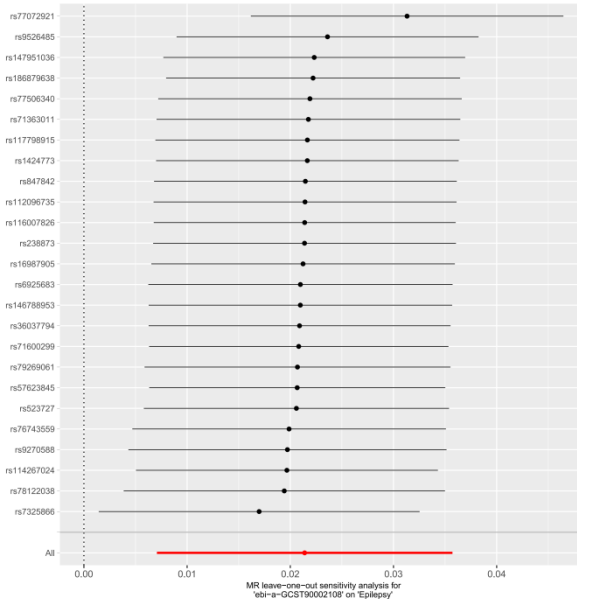
(29) CD4 on CD39+ secreting CD4 regulatory T cell on epilepsy



(30) HLA DR on plasmacytoid Dendritic Cell on epilepsy

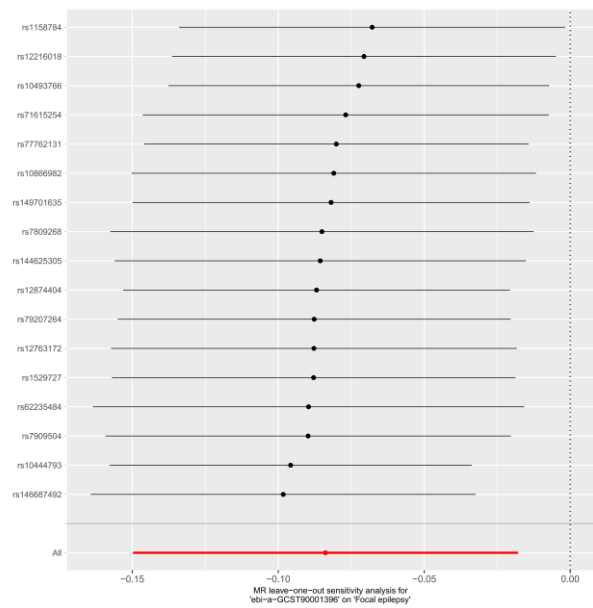


(31) HLA DR on Dendritic Cell on epilepsy

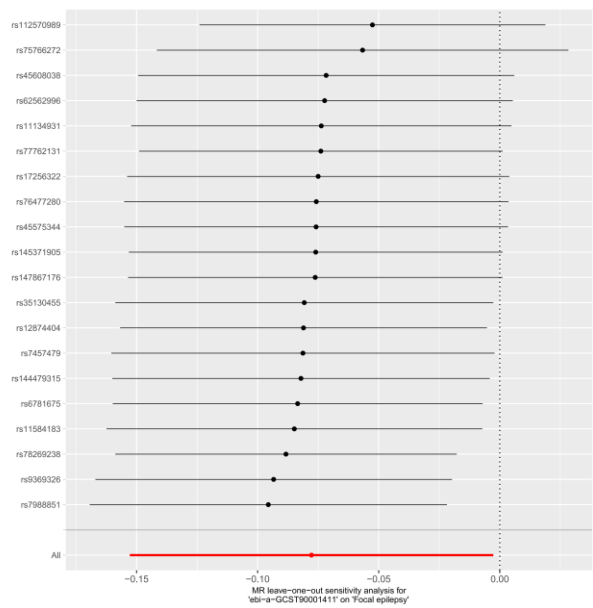


(32) HLA DR on CD33+ HLA DR+ CD14- on epilepsy

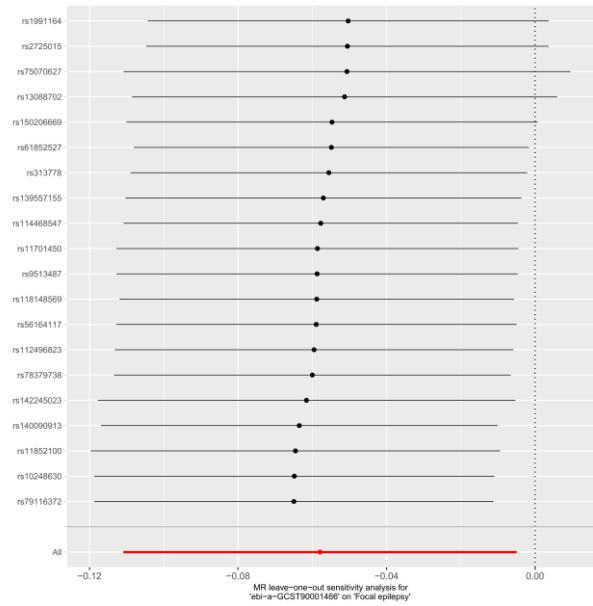
Fig. S13. MR leave-one-out sensitivity analysis immunophenotype on FE. CCR, C-C chemokine receptor; CD, cluster of differentiation; FE, focal epilepsy; HLA DR, human leukocyte antigen-DR isotype; Ig, immunoglobulin; MR, Mendelian randomization; SSC-A, side scatter area.



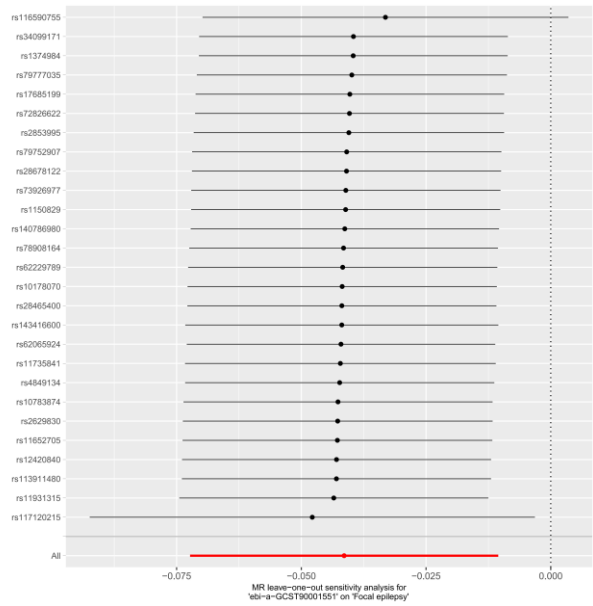
(1) IgD+ CD38- B cell Absolute Count on FE



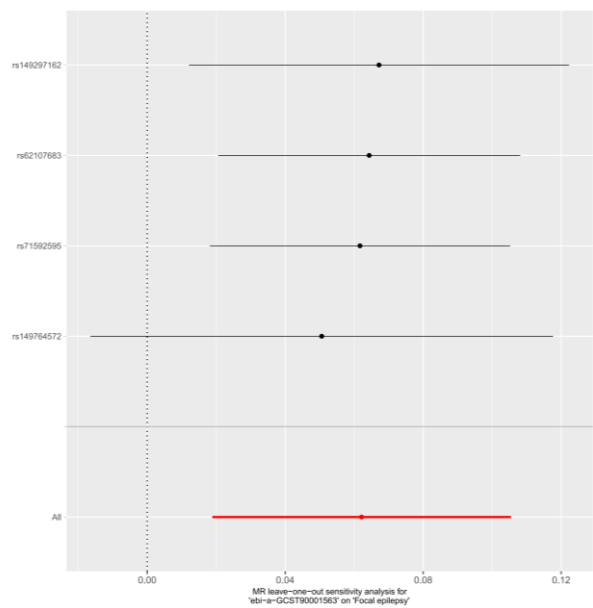
(2) IgD+ CD24+ B cell %B cell on FE



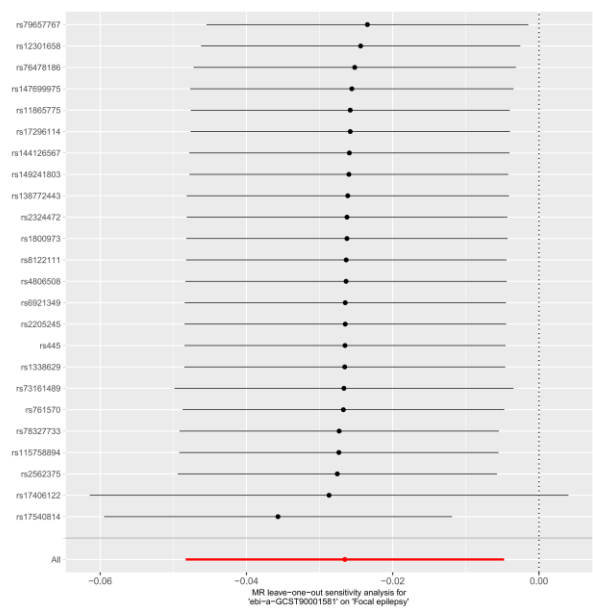
(3) CD86+ plasmacytoid Dendritic Cell Absolute Count on FE



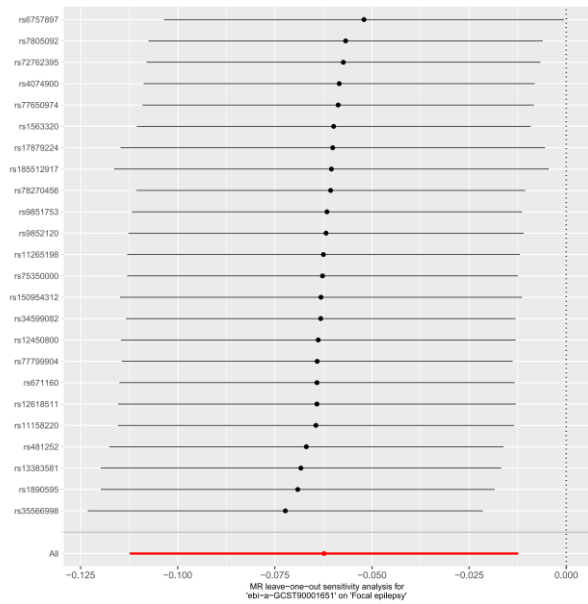
(4) Naive CD8+ T cell Absolute Count on FE



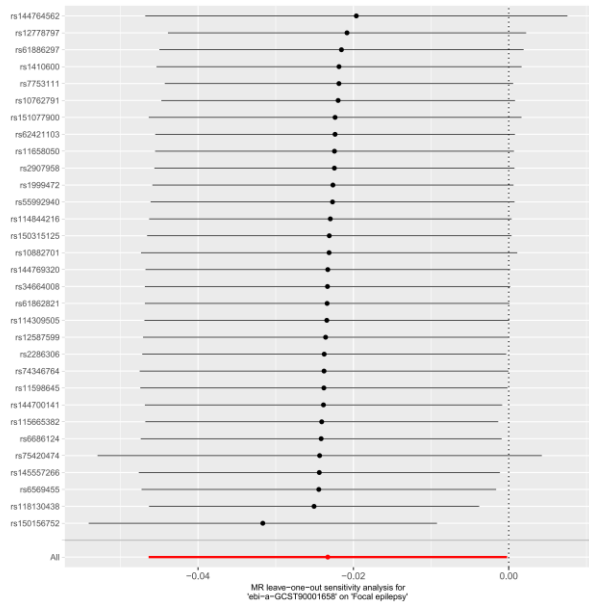
(5) Central Memory CD4-CD8- T cell Absolute Count on FE



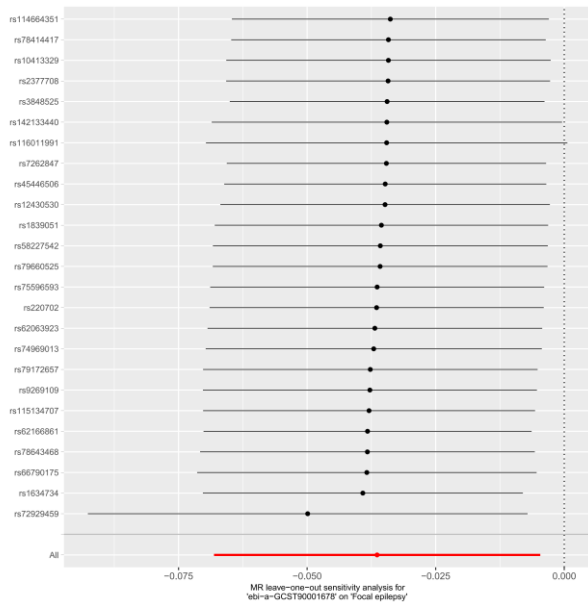
(6) CD14- CD16- Absolute Count on FE



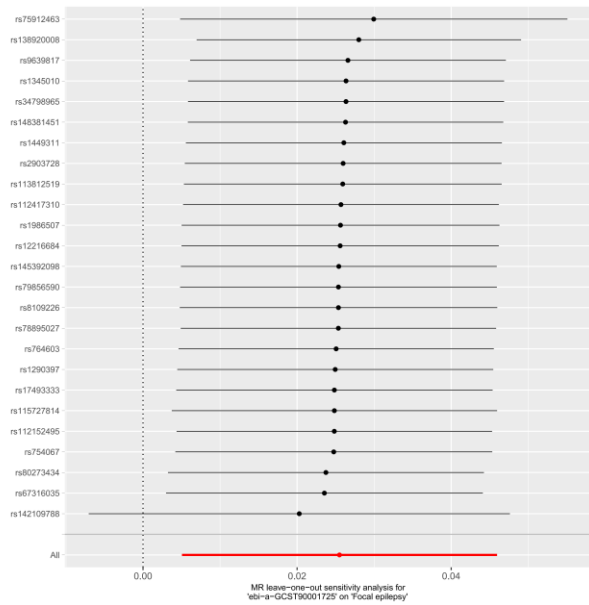
(7) Granulocyte Absolute Count on FE



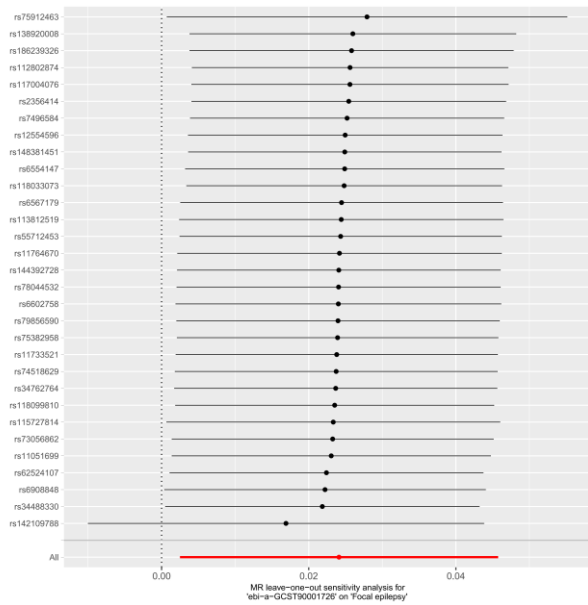
(8) CD39+ CD4+ T cell %T cell on FE



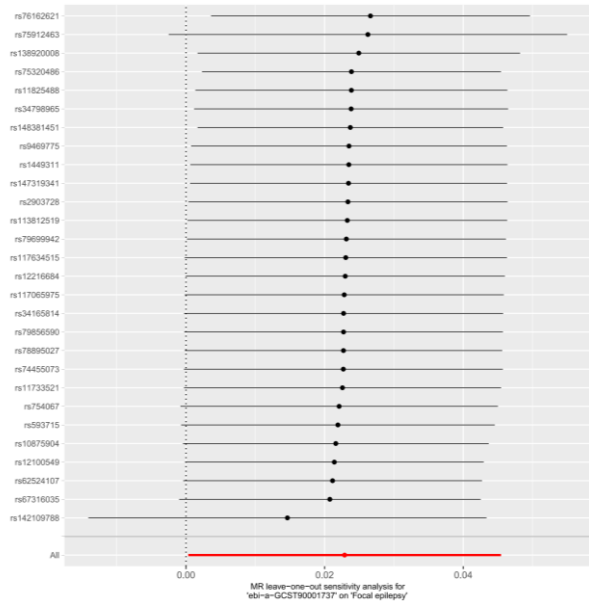
(9) CD28- CD25++ CD8+ T cell Absolute Count on FE



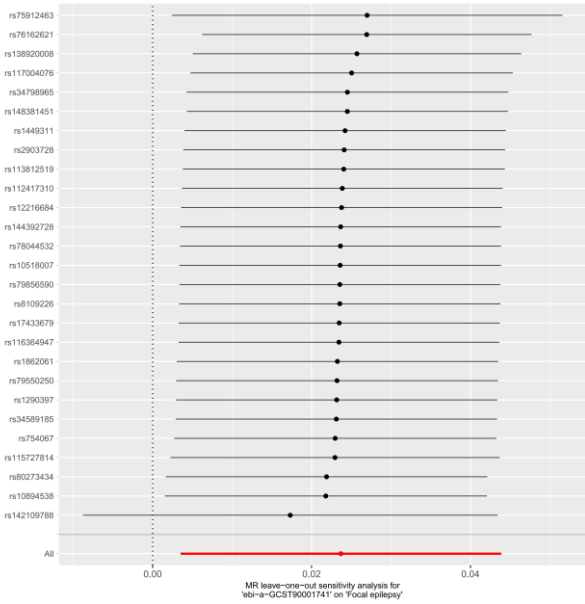
(10) CD19 on IgD+ CD24- B cell on FE



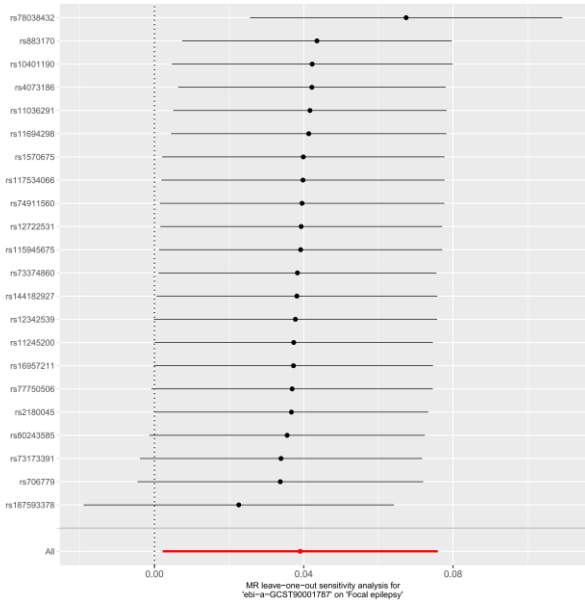
(11) CD19 on IgD+ CD38- B cell on FE



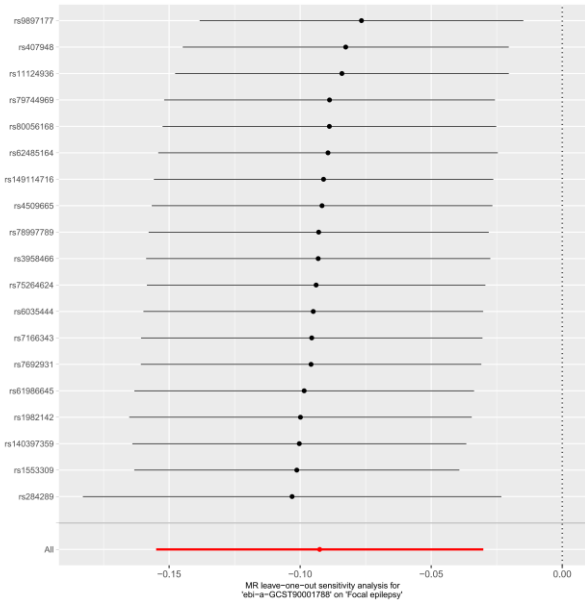
(12) CD19 on naive-mature B cell on FE



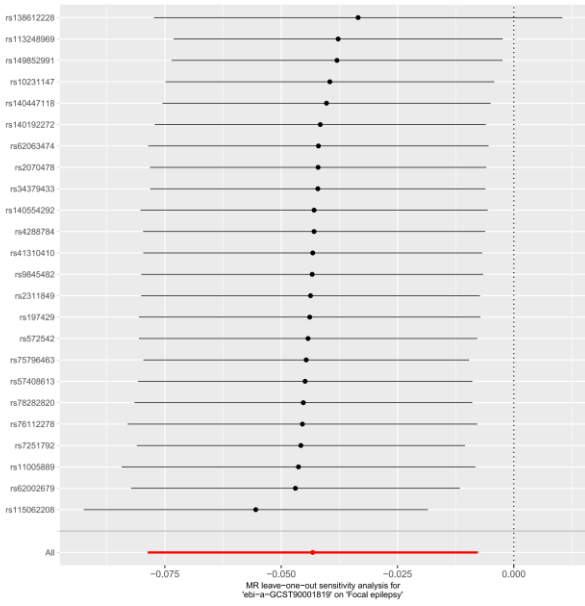
(13) CD19 on IgD+ B cell on FE



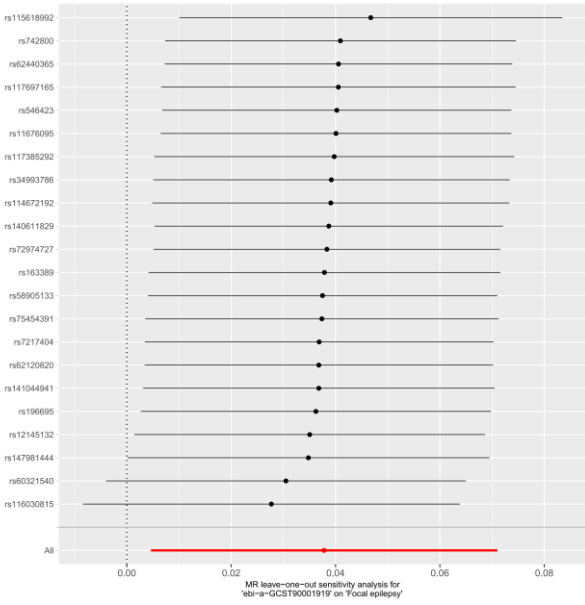
(14) CD25 on IgD- CD38- B cell on FE



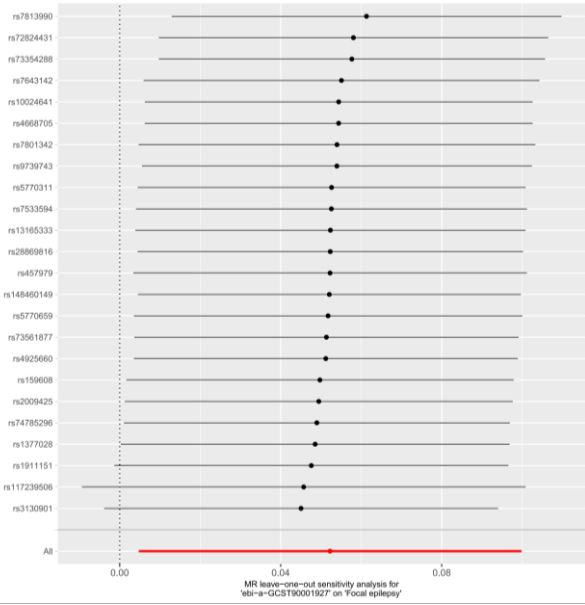
(15) CD25 on IgD- CD38+ B cell on FE



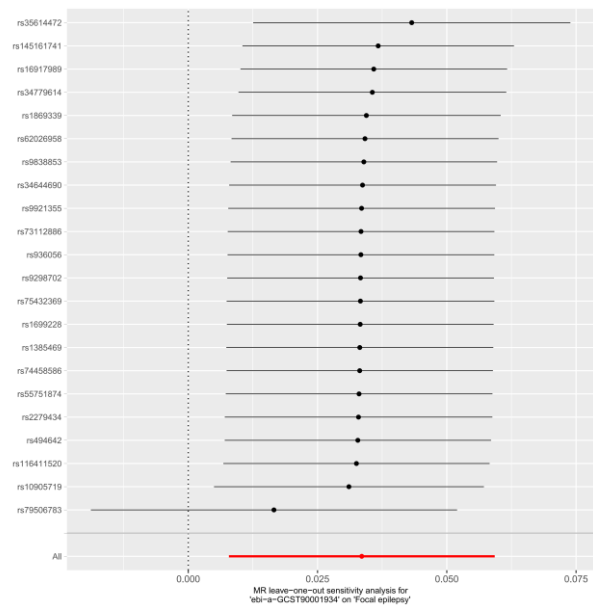
(16) CD38 on transitional B cell on FE



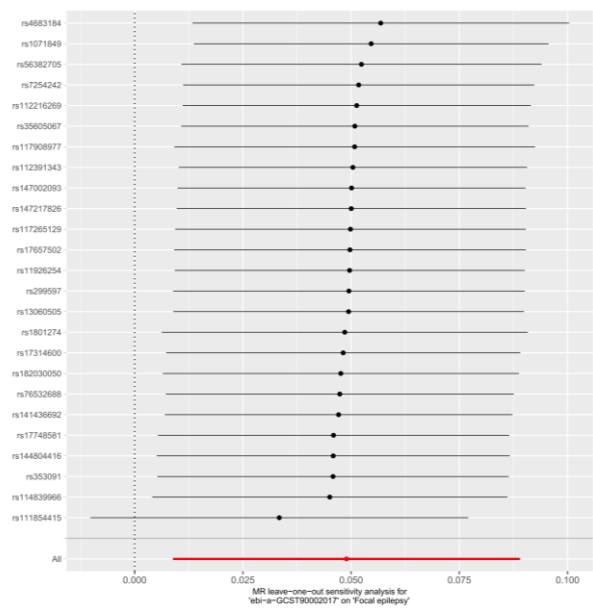
(17) CD45 on Natural Killer T on FE



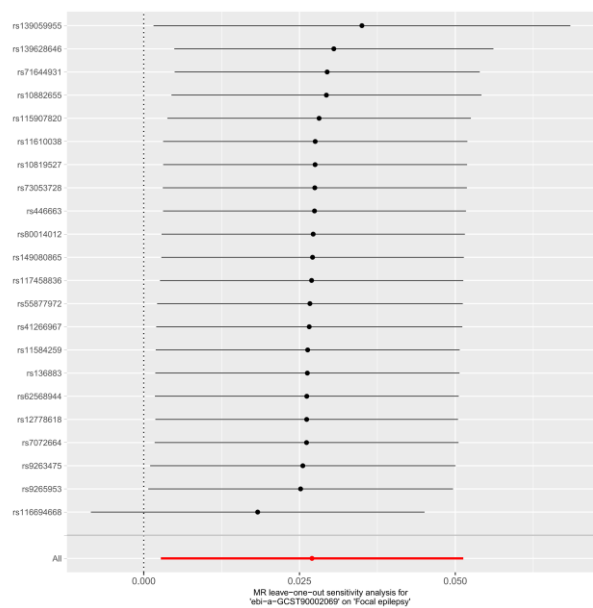
(18) CD127 on CD8+ T cell on FE



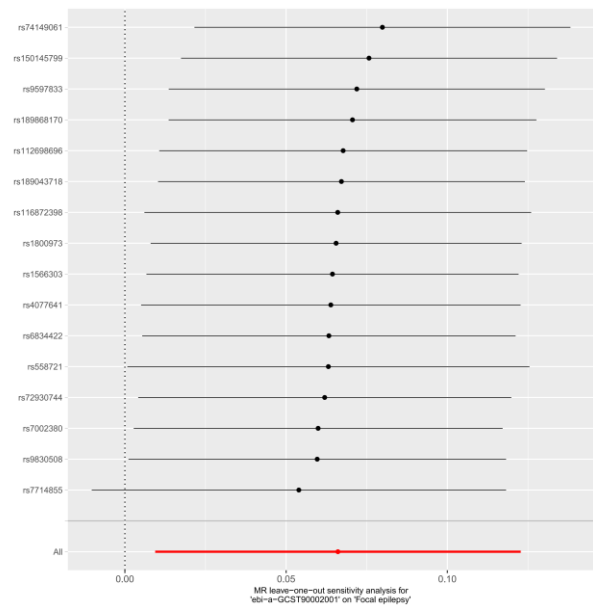
(19) CD25 on CD45RA+ CD4 not regulatory T cell on FE



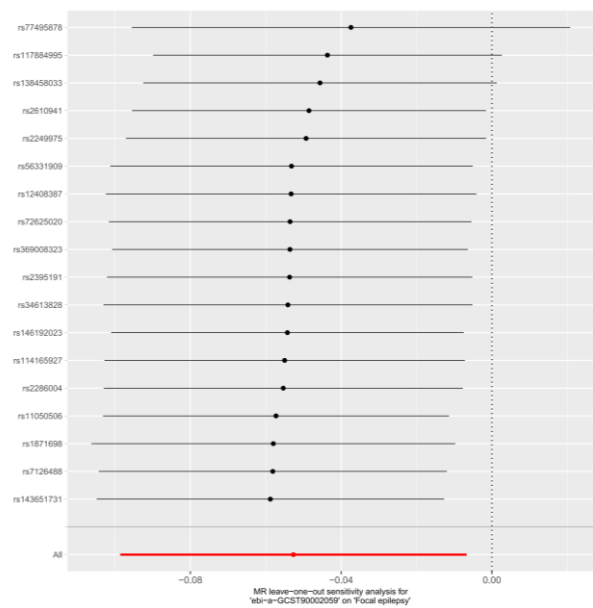
(21) CCR2 on monocyte on FE



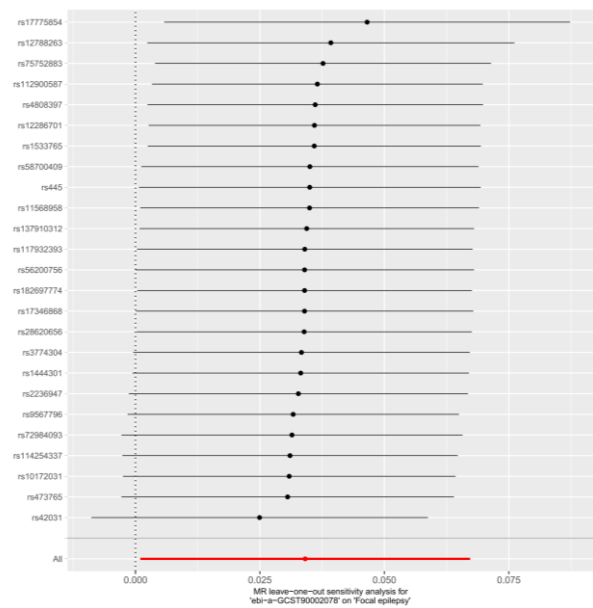
(23) CD4 on CD39+ secreting CD4 regulatory T cell on FE



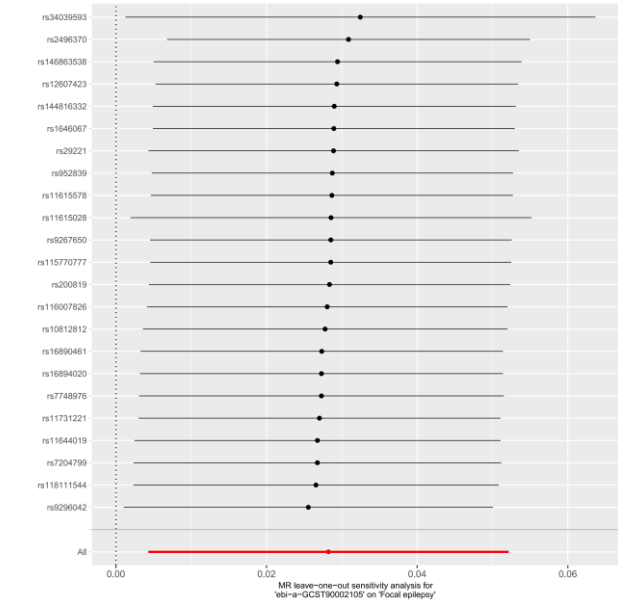
(20) CD64 on CD14- CD16- on FE



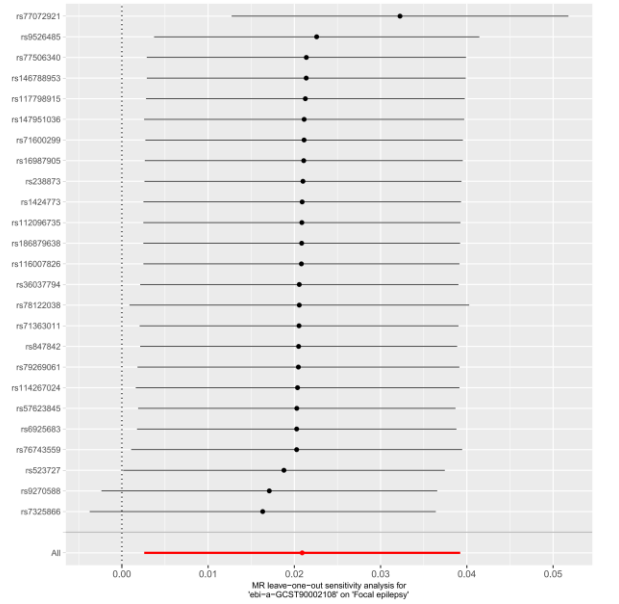
(22) CD8 on Natural Killer T on FE



(24) SSC-A on granulocyte on FE

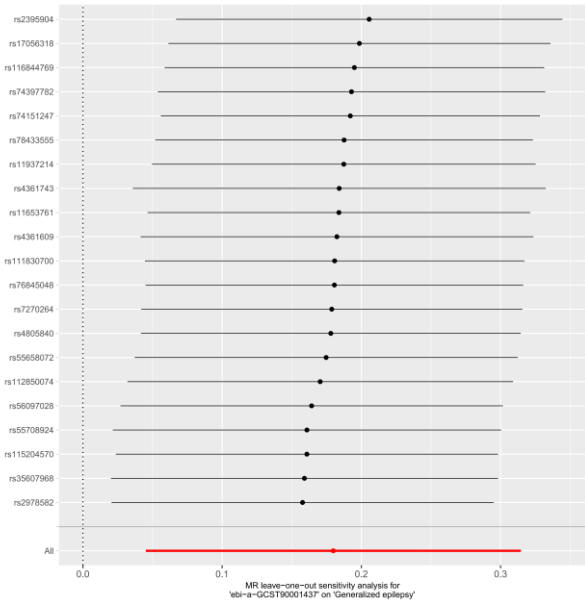


(25) HLA DR on plasmacytoid Dendritic Cell on FE

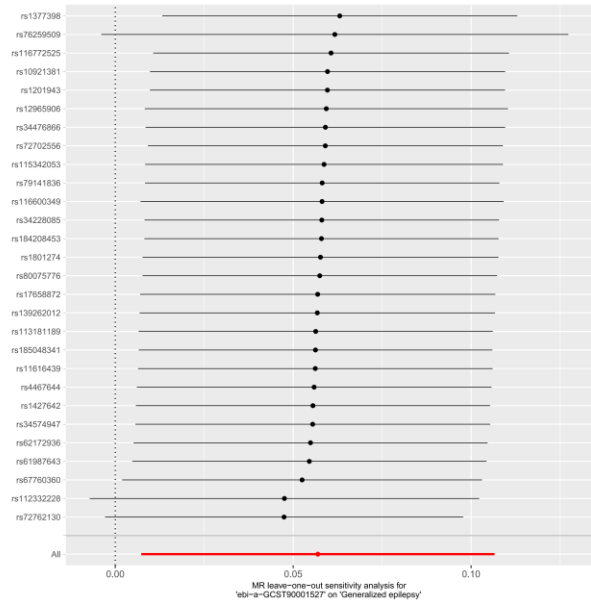


(26) CD25 on CD45RA+ CD4 not regulatory T cell on epilepsy

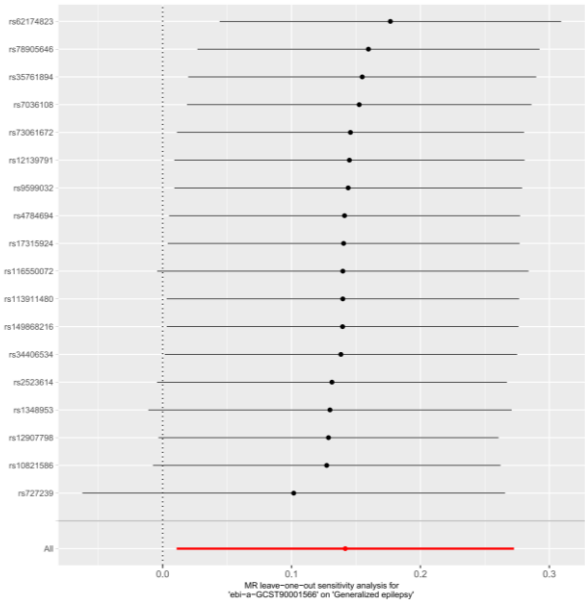
Fig. S14. MR leave-one-out sensitivity analysis immunophenotype on GE. CCR, C-C chemokine receptor; CD, cluster of differentiation; FSC-A, forward scatter area; GE, generalized epilepsy; HLA DR, human leukocyte antigen-DR isotype; Ig, immunoglobulin; MR, Mendelian randomization; TCR, T cell receptor.



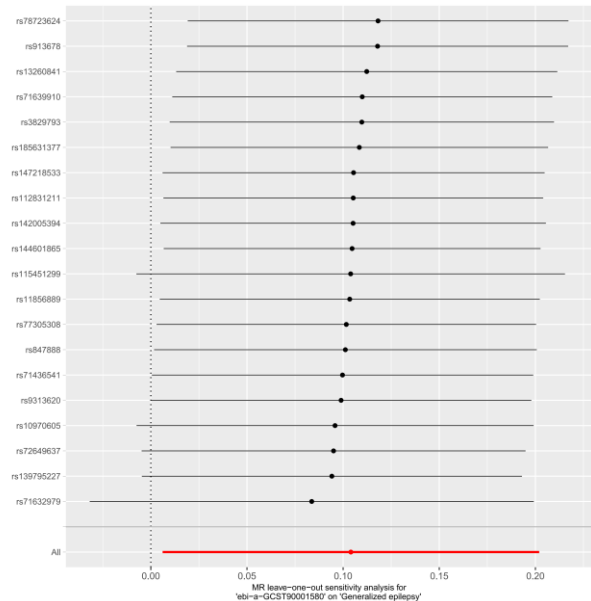
(1) Naive-mature B cell %lymphocyte on GE



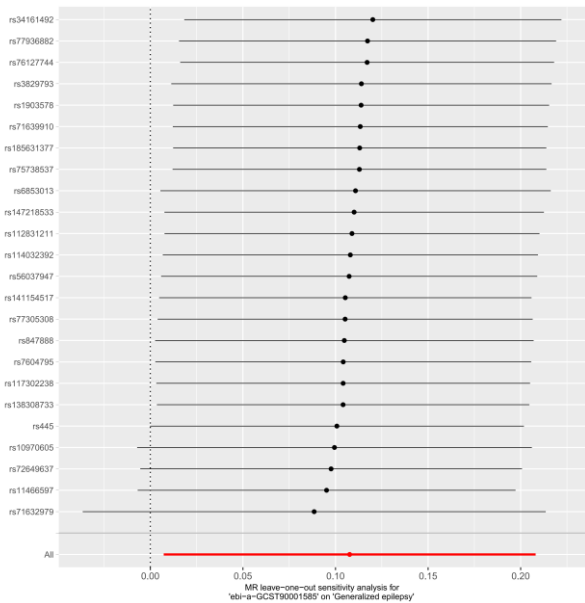
(2) CD33dim HLA DR+ CD11b- Absolute Count on GE



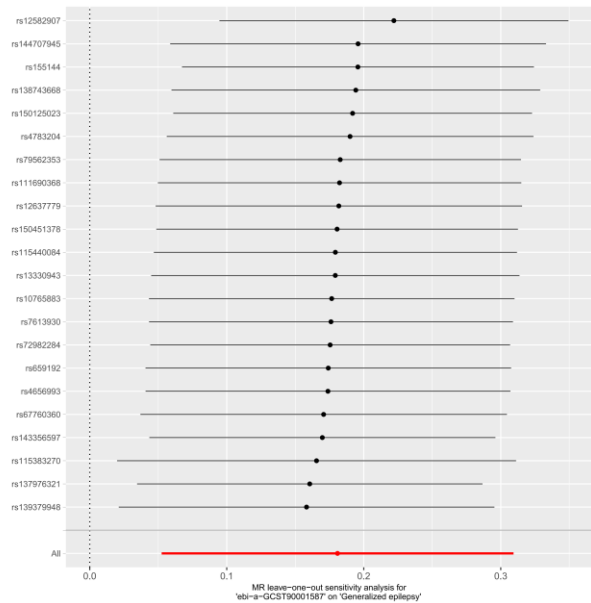
(3) Naive CD4-CD8- T cell Absolute Count on GE



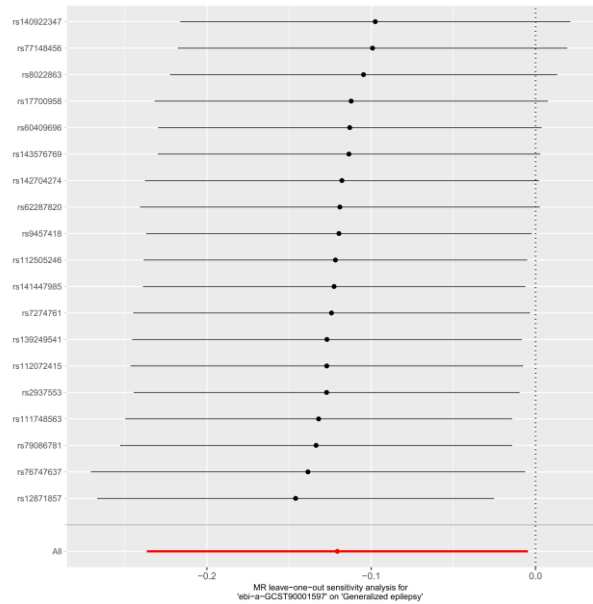
(4) CD14+ CD16+ monocyte Absolute Count on GE



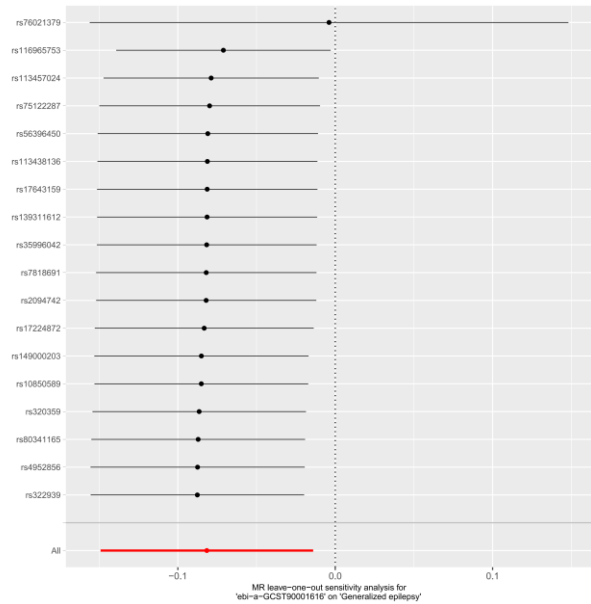
(5) CD14+ CD16+ monocyte %monocyte on GE



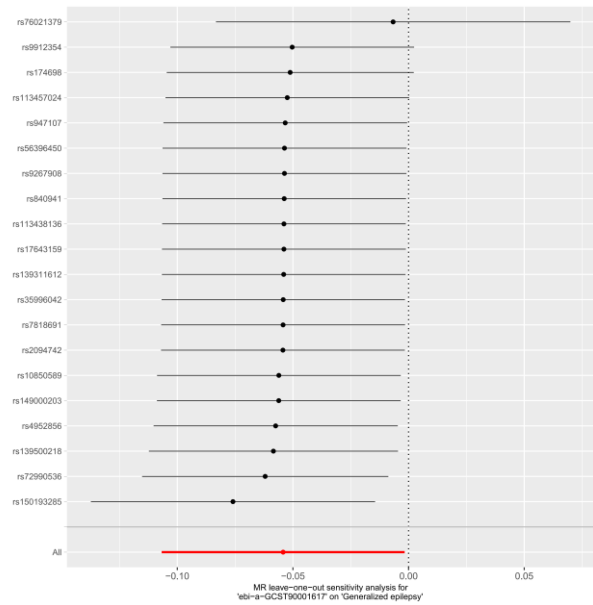
(6) CD16+ monocyte %monocyte on GE



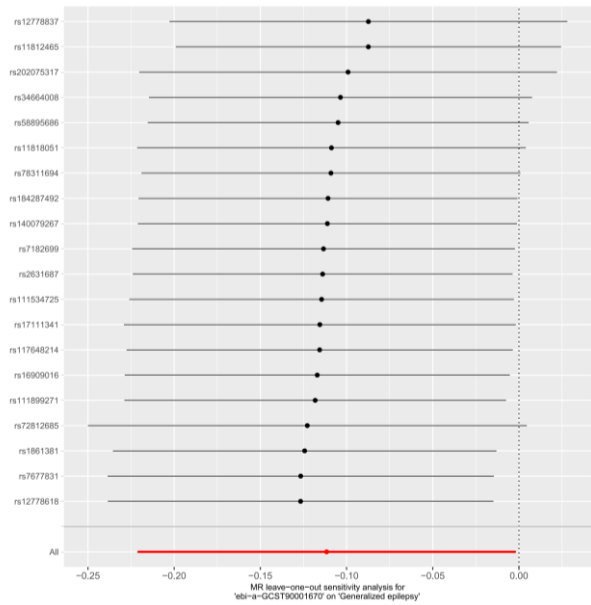
(7) CD8dim T cell %T cell on GE



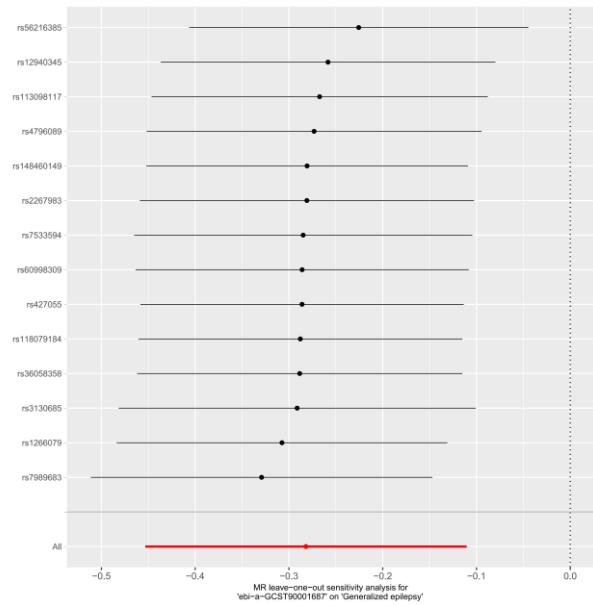
(8) TCRgd T cell %T cell on GE



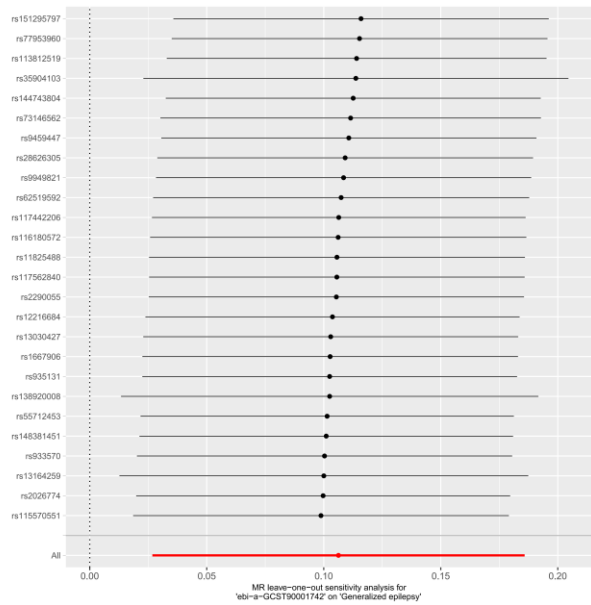
(9) TCRgd T cell %lymphocyte on GE



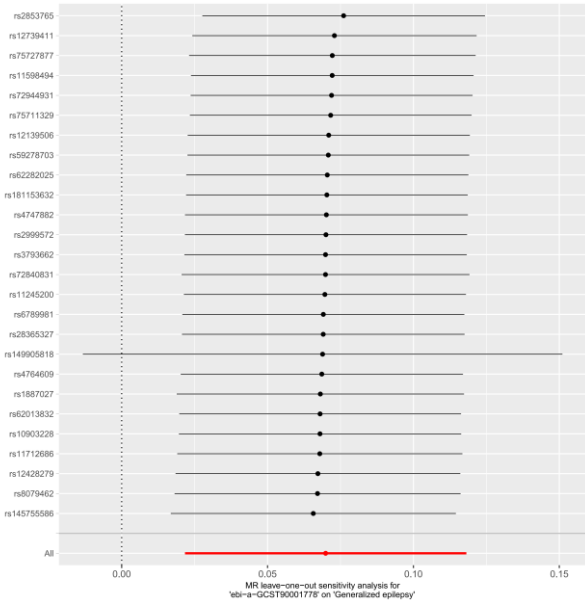
(10) CD39+ CD8+ T cell %T cell on GE



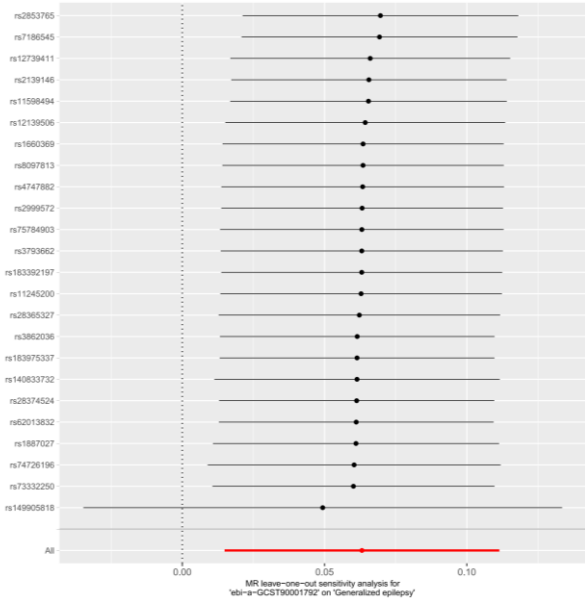
(11) CD28- CD8+ T cell Absolute Count on GE



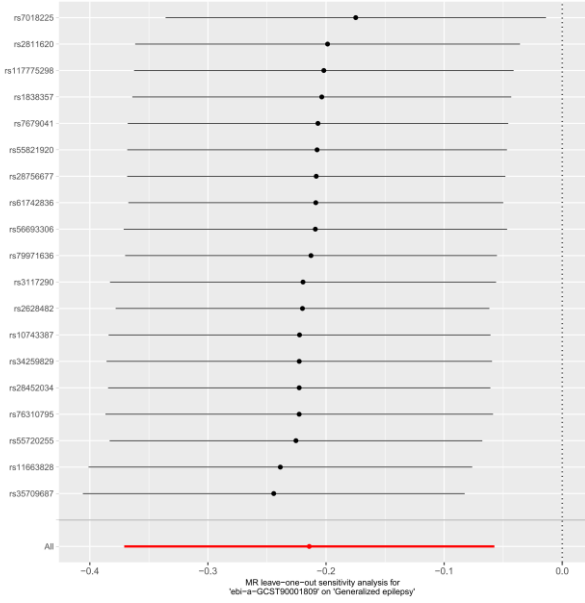
(12) CD19 on transitional B cell on GE



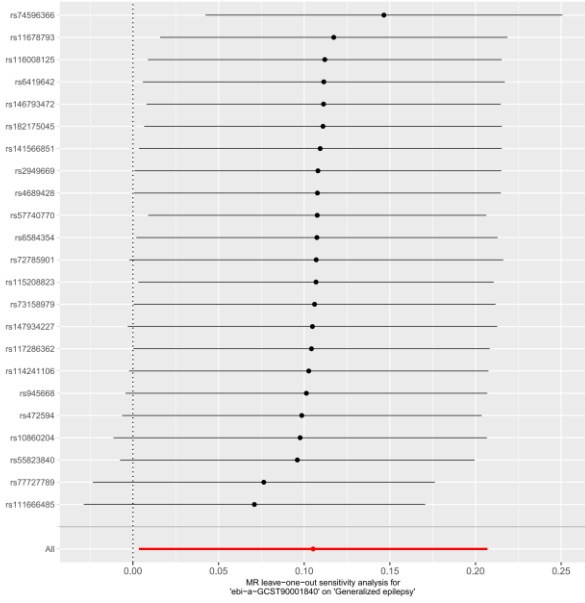
(13) CD25 on IgD+ CD24+ B cell on GE



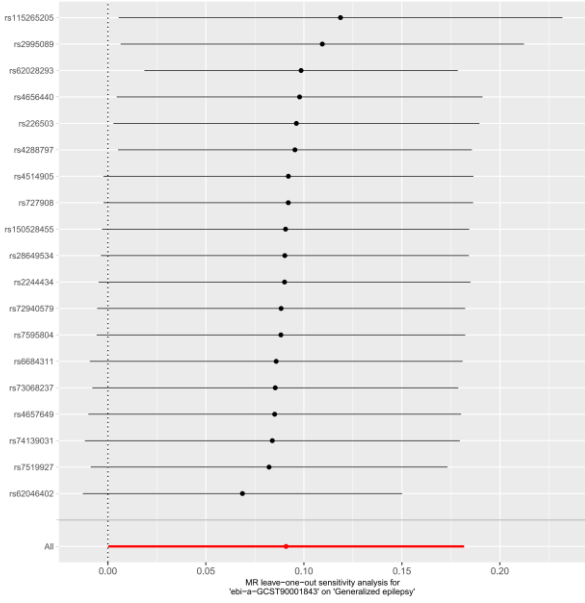
(14) CD25 on unswitched memory B cell on GE



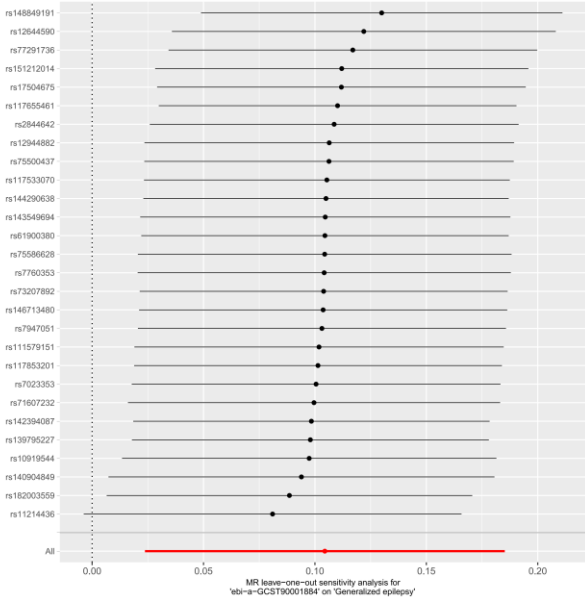
(15) CD38 on CD20- B cell on GE



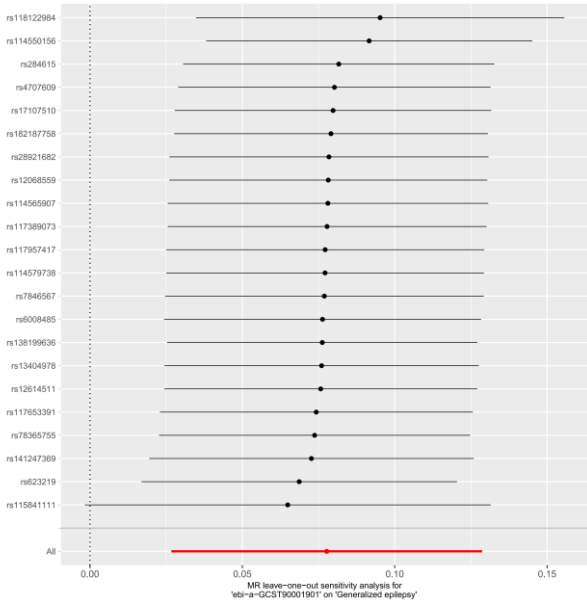
(16) CD3 on Terminally Differentiated CD8+ T cell on GE



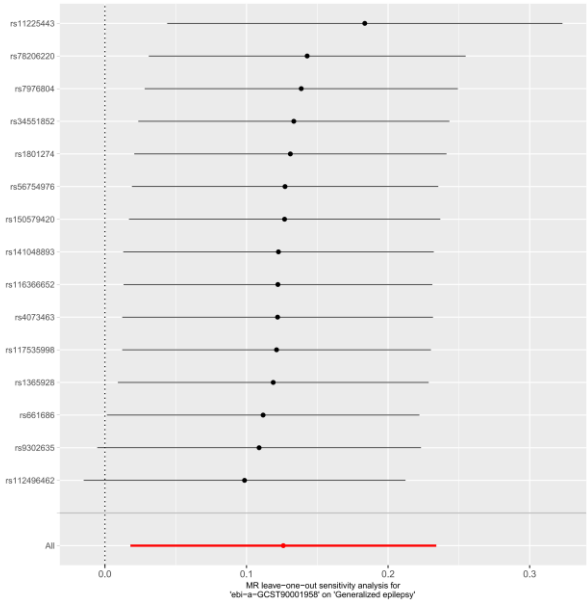
(17) CD3 on Effector Memory CD4+ T cell on GE



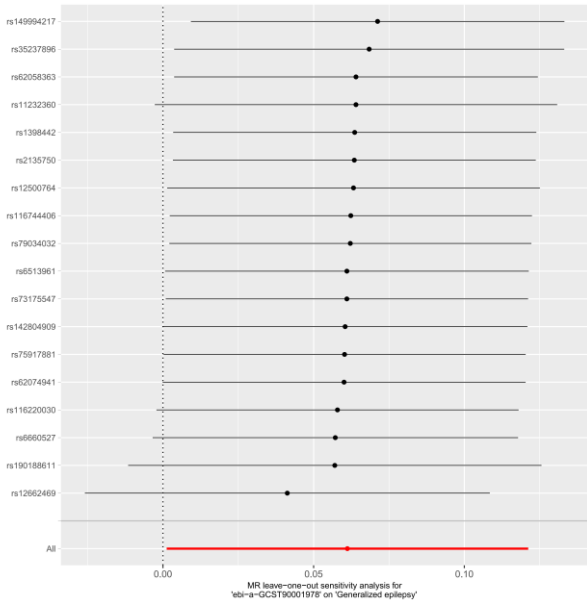
(18) CD16-CD56 on Natural Killer on GE



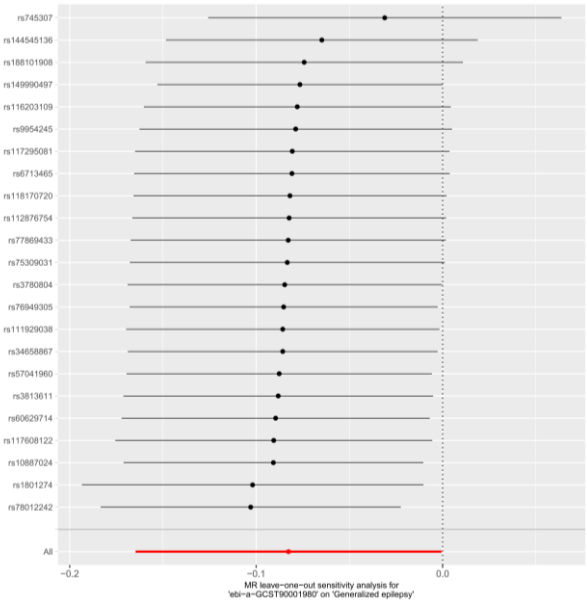
(19) CD28 on CD39+ resting CD4 regulatory T cell on GE



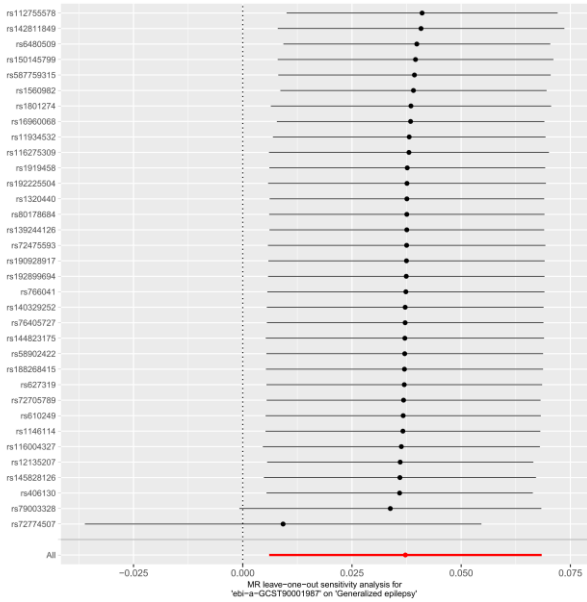
(20) CD4 on monocyte on GE



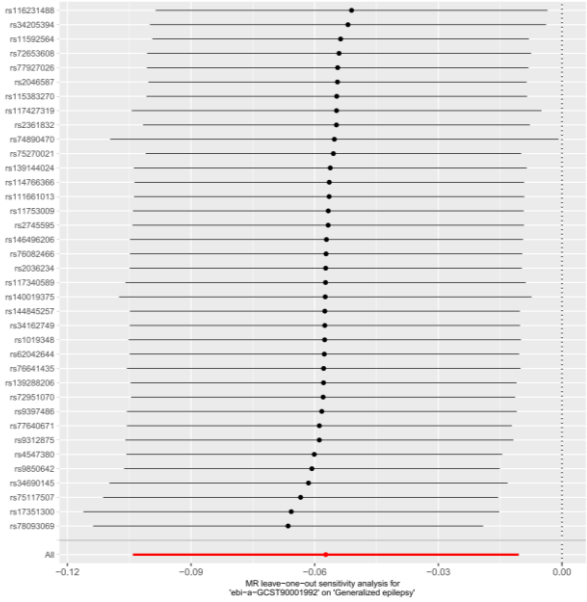
(21) FSC-A on HLA DR+ CD8+ T cell on GE



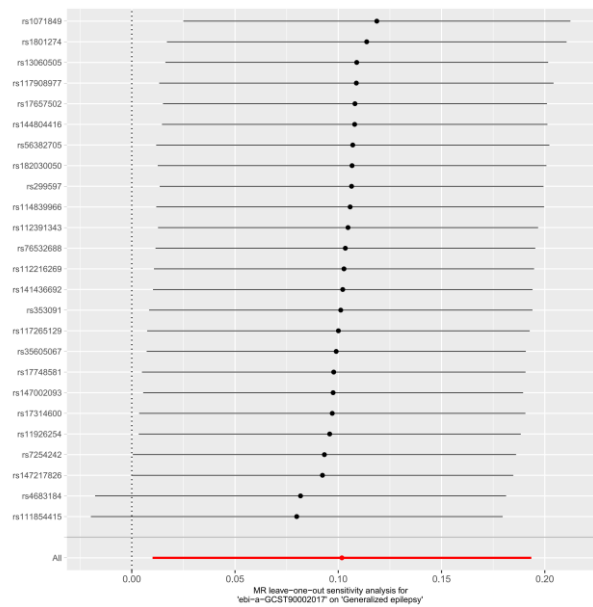
(22) CD40 on CD14+ CD16- monocyte on GE



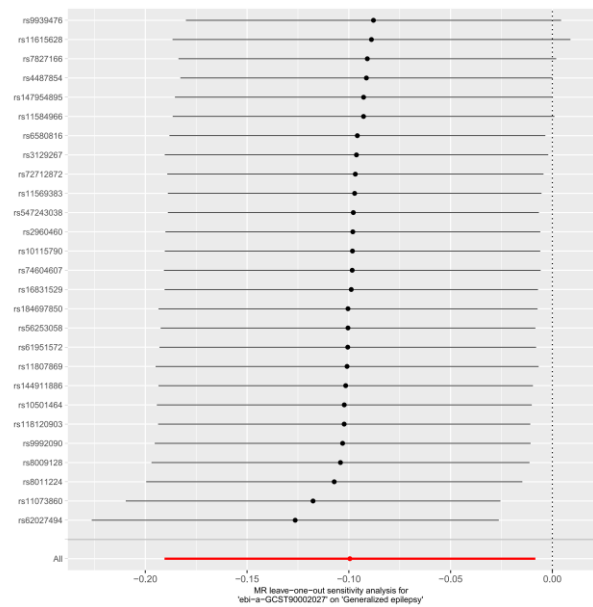
(23) CD64 on CD14+ CD16- monocyte on GE



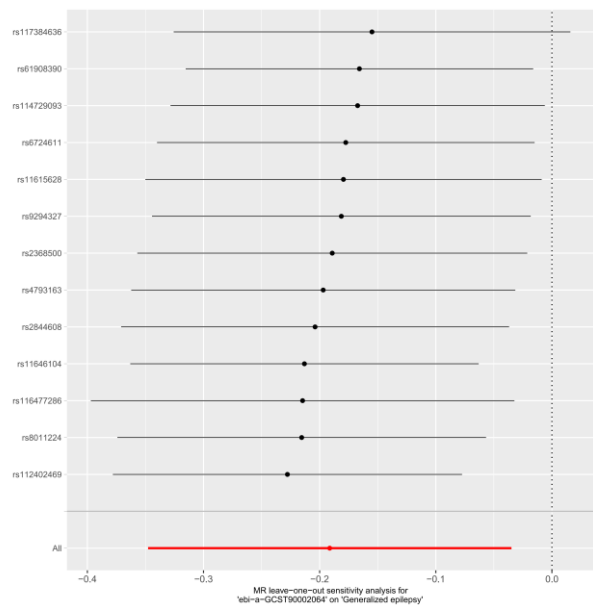
(24) CCR2 on CD14+ CD16+ monocyte on GE



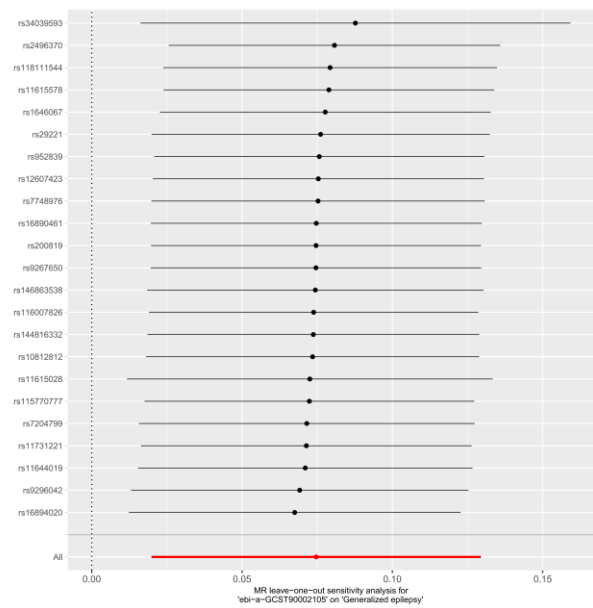
(25) CCR2 on monocyte on GE



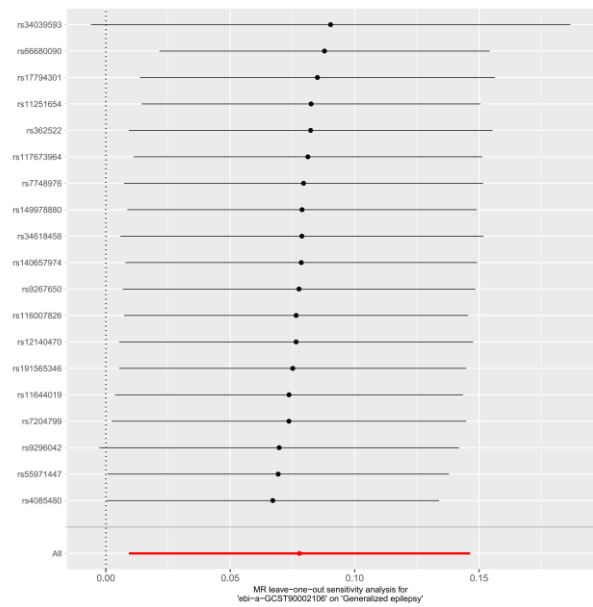
(26) CD4 on CD45RA+ CD4+ T cell on GE



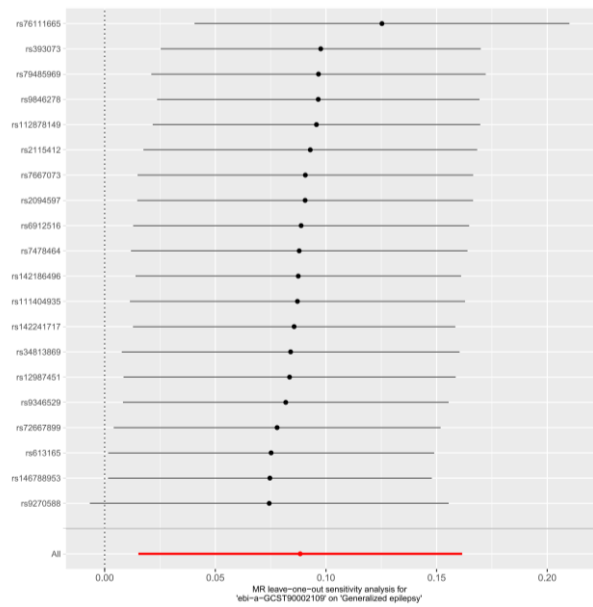
(27) CD4 on resting CD4 regulatory T cell on GE



(28) HLA DR on plasmacytoid Dendritic Cell on GE

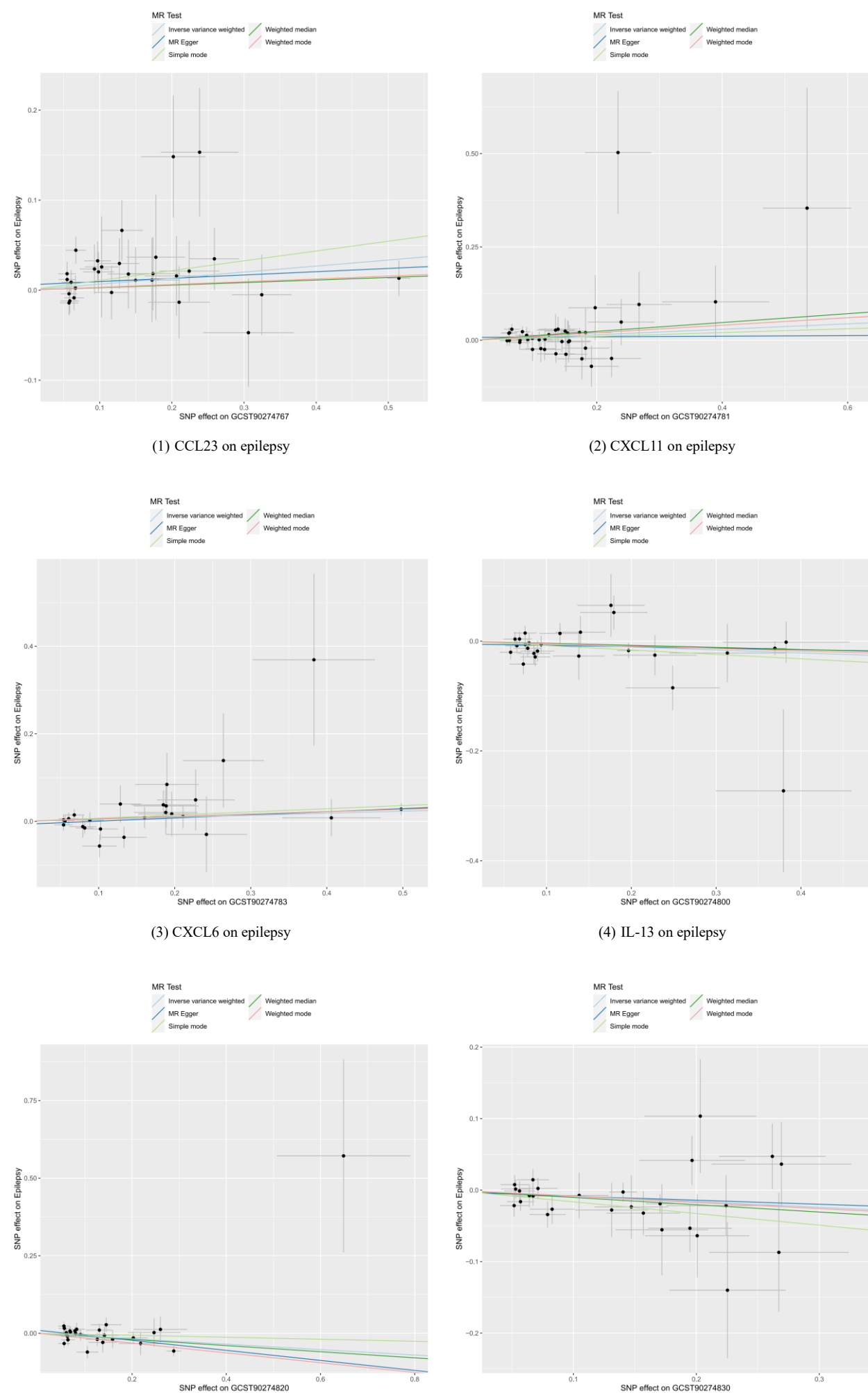


(29) HLA DR on Dendritic Cell on GE

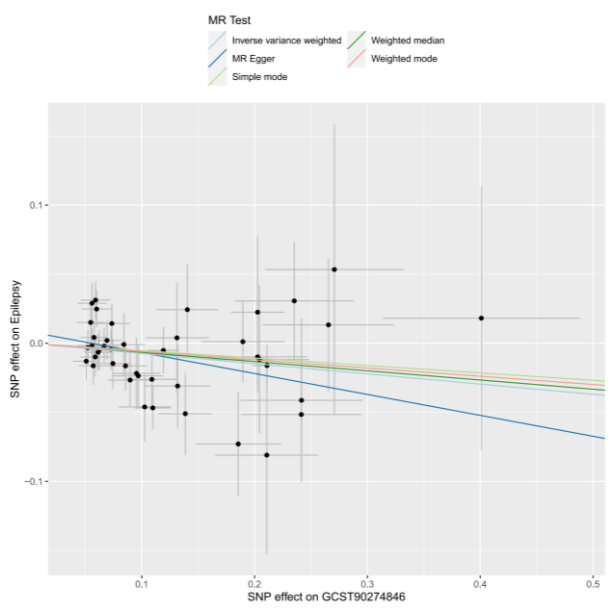


(30) HLA DR on CD33+ HLA DR+ CD14dim on GE

Fig. S15. Scatter plots for the effect of inflammatory protein on epilepsy. CCL, C-C chemokine ligand; CXCL, C-X-C motif chemokine ligand; IL, interleukin; LIF-R, leukemia inhibitory factor receptor; MR, Mendelian randomization; OPG, osteoprotegerin; SNP, single nucleotide polymorphism; TNF, tumor necrosis factor; VEGF_A, vascular endothelial growth factor A.

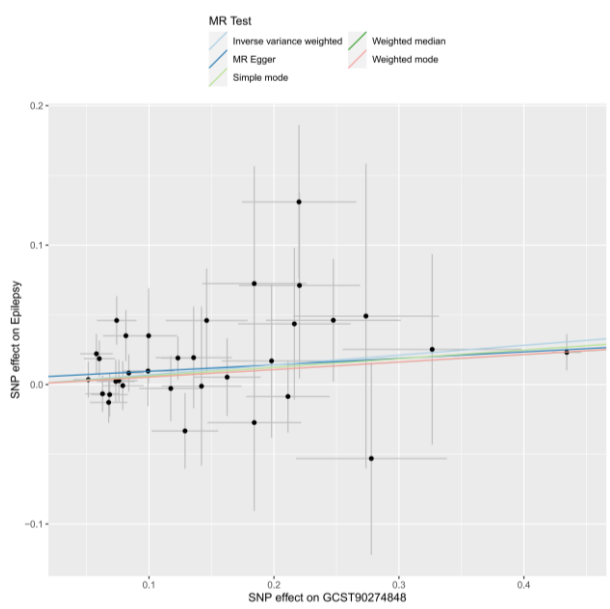


(5) LIF-R on epilepsy



(7) TNF on epilepsy

(6) OPG on epilepsy



(8) VEGF_A on epilepsy

Fig. S16. Scatter plots for the effect of inflammatory protein on FE. CXCL, C-X-C motif chemokine ligand; FE, focal epilepsy; IL, interleukin; LIF-R, leukemia inhibitory factor receptor; SNP, single nucleotide polymorphism; TNF, tumor necrosis factor.

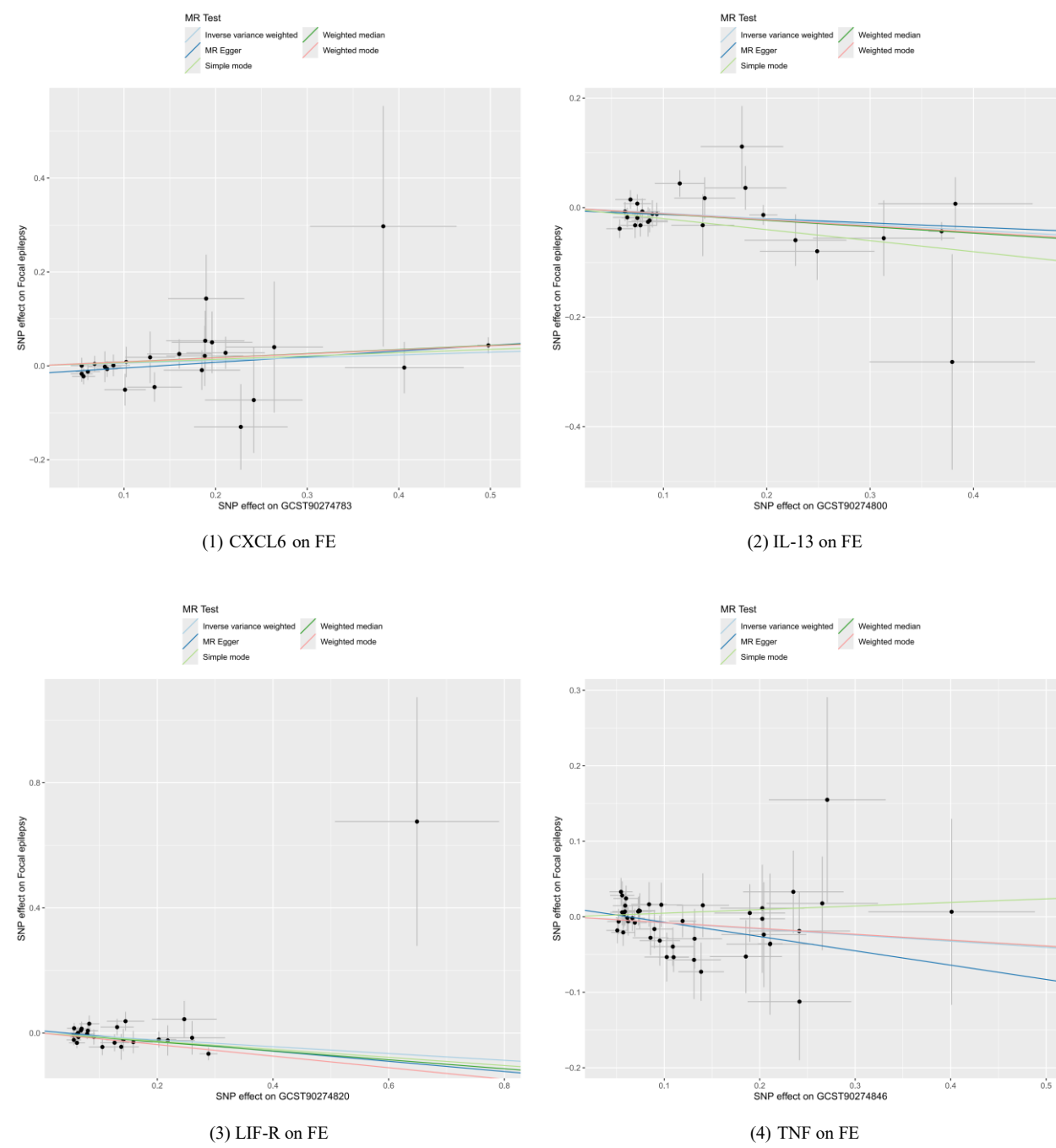


Fig. S17. Scatter plots for the effect of inflammatory protein on GE. CD, cluster of differentiation; GE, generalized epilepsy; IL, interleukin; IL10RB, interleukin 10 receptor subunit beta; SNP, single nucleotide polymorphism; TNFSF, tumor necrosis factor superfamily protein; 4EBP1, eukaryotic initiation factor 4E binding protein 1.

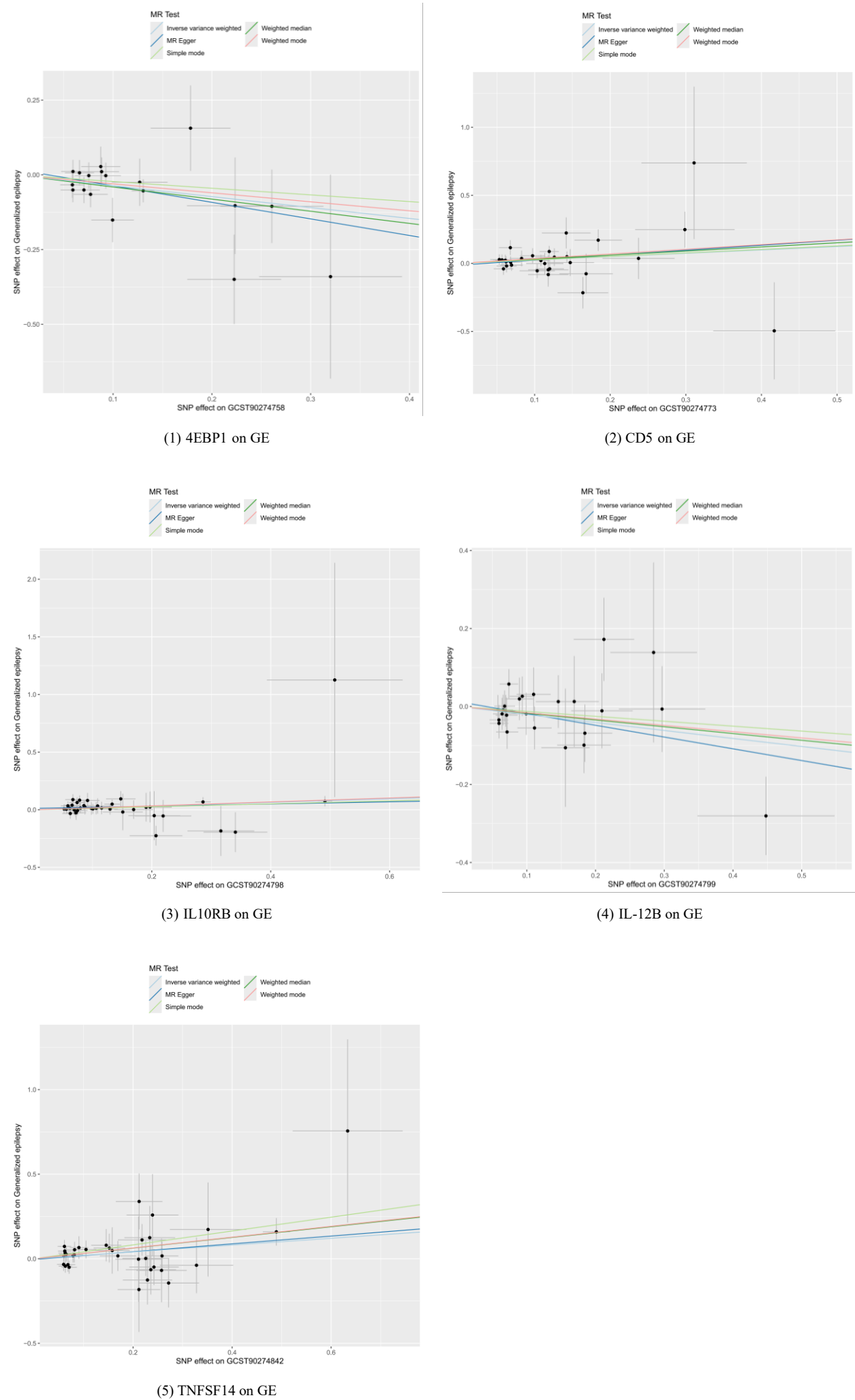
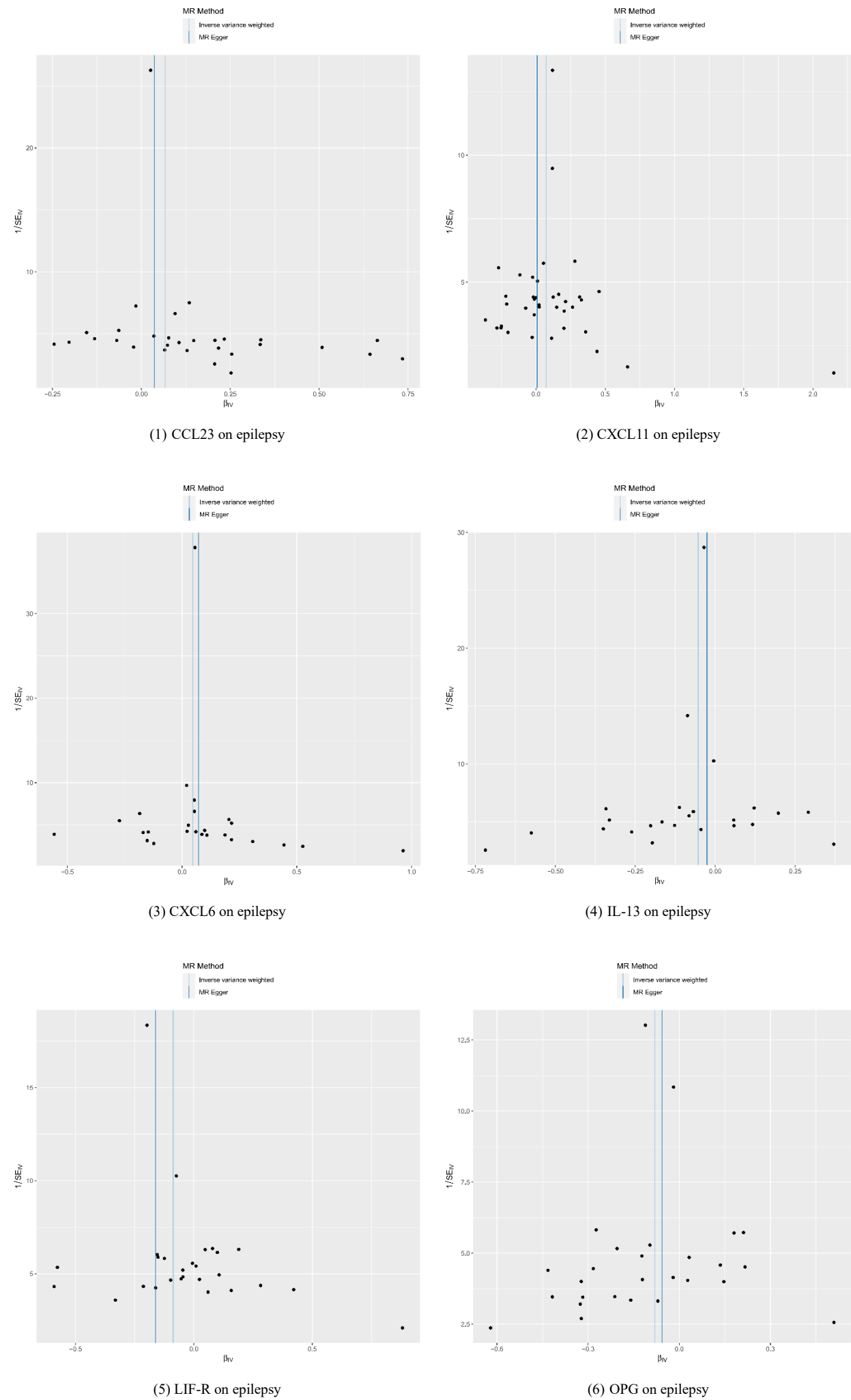
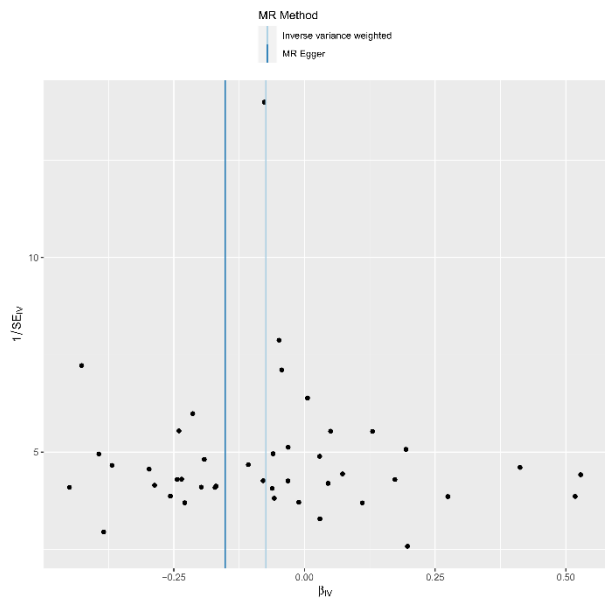
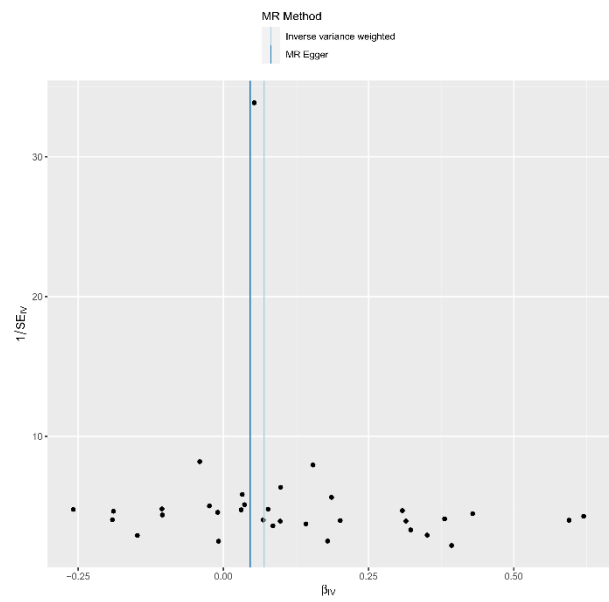


Fig. S18. Funnel plots for the effect of inflammatory protein on epilepsy. CCL, C-C chemokine ligand; CXCL, C-X-C motif chemokine ligand; IL, interleukin; LIF-R, leukemia inhibitory factor receptor; MR, Mendelian randomization; OPG, osteoprotegerin; SE, standard error; TNF, tumor necrosis factor; VEGF_A, vascular endothelial growth factor A.





(7) TNF on epilepsy



(8) VEGF_A on epilepsy

Fig. S19. Funnel plots for the effect of inflammatory protein on FE. CXCL, C-X-C motif chemokine ligand; FE, focal epilepsy; IL, interleukin; LIF-R, leukemia inhibitory factor receptor; MR, Mendelian randomization; TNF, tumor necrosis factor.

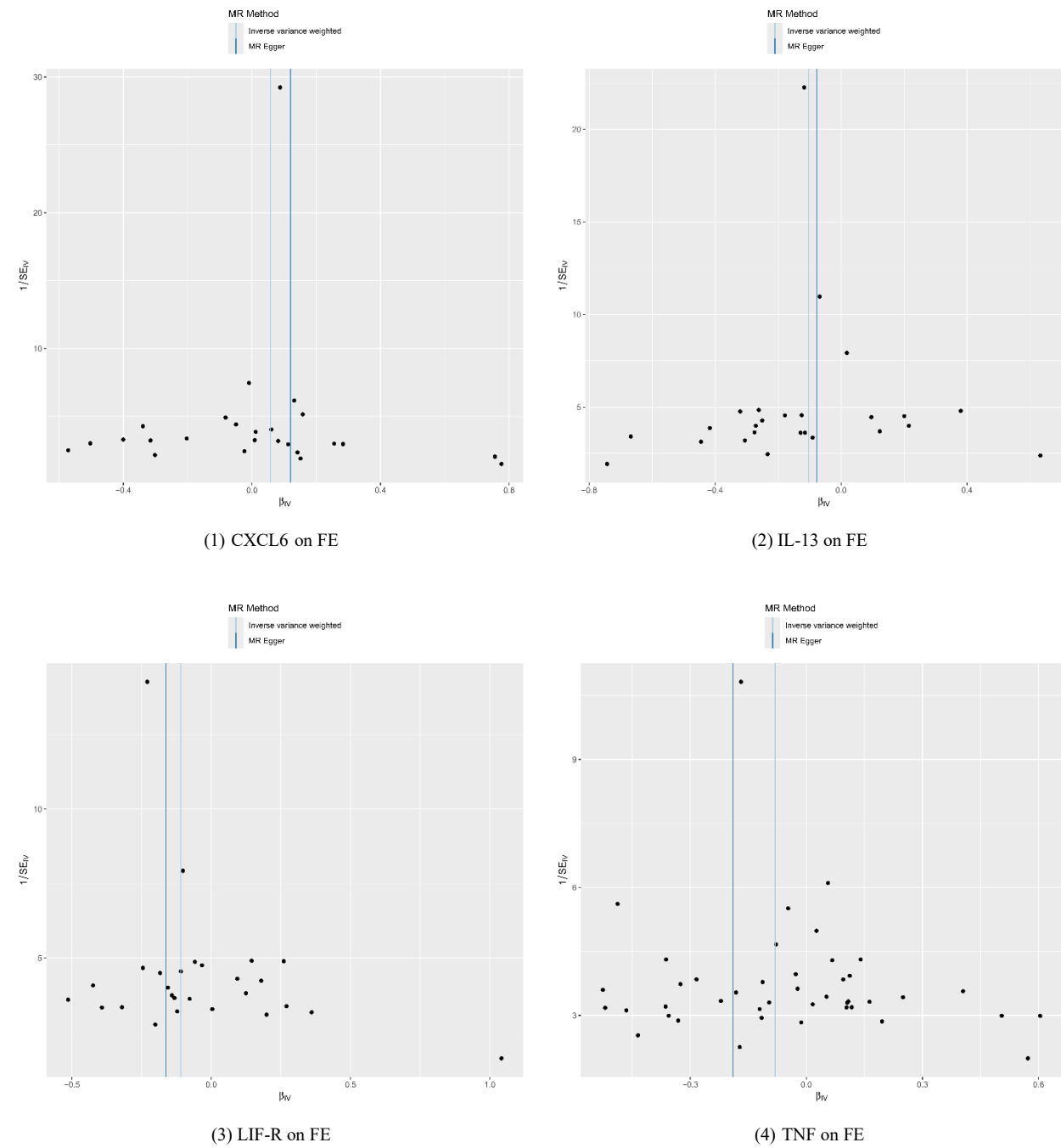


Fig. S20. Funnel plots for the effect of inflammatory protein on GE. CD, cluster of differentiation; GE, generalized epilepsy; IL, interleukin; IL10RB, interleukin 10 receptor subunit beta; MR, Mendelian randomization; TNFSF, tumor necrosis factor superfamily protein; 4EBP1, eukaryotic initiation factor 4E binding protein 1.

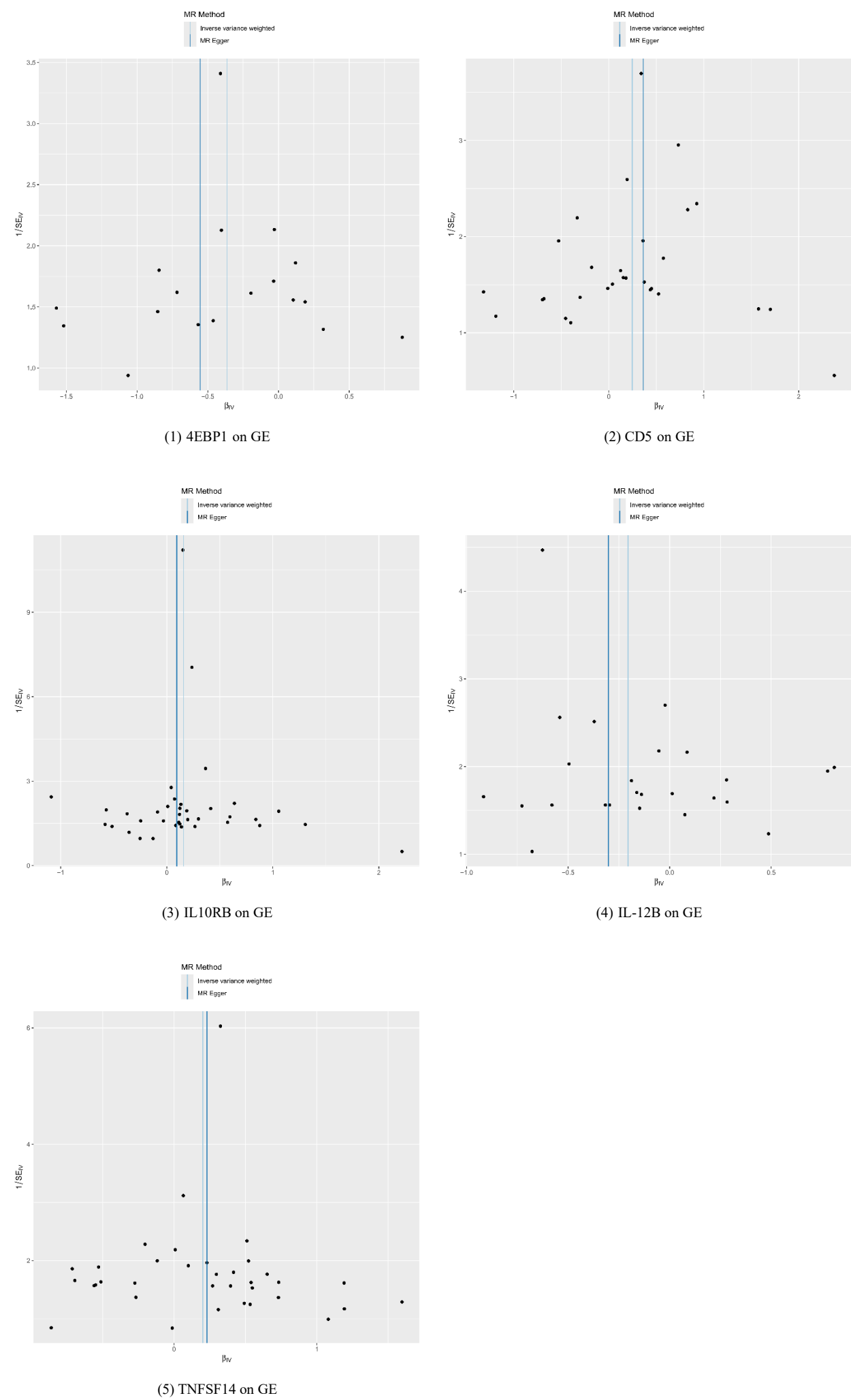
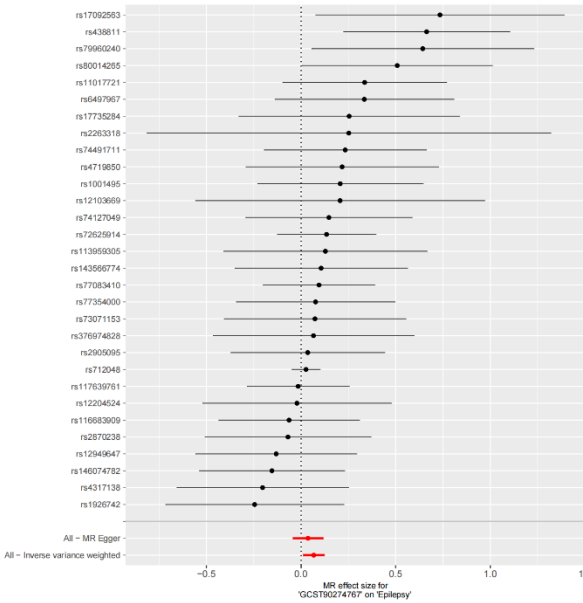
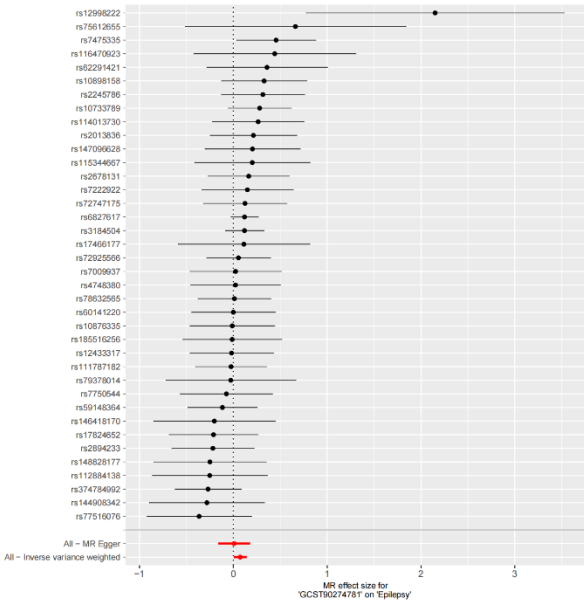


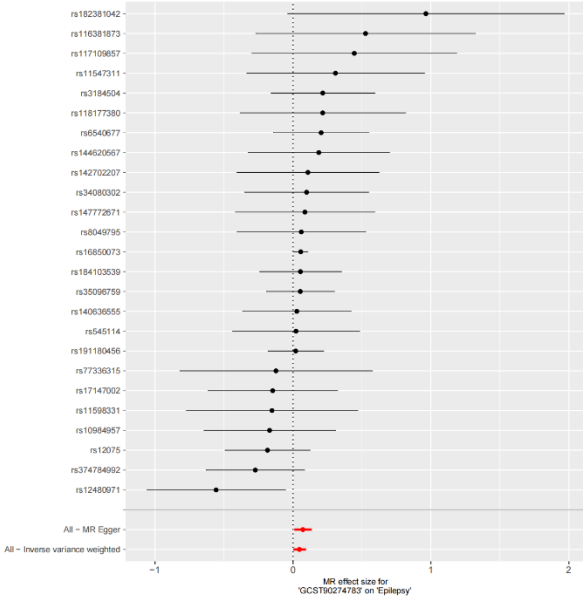
Fig. S21. Forest plots for the effect of inflammatory protein on epilepsy. CCL, C-C chemokine ligand; CXCL, C-X-C motif chemokine ligand; IL, interleukin; LIF-R, leukemia inhibitory factor receptor; MR, Mendelian randomization; OPG, osteoprotegerin; TNF, tumor necrosis factor; VEGF_A, vascular endothelial growth factor A.



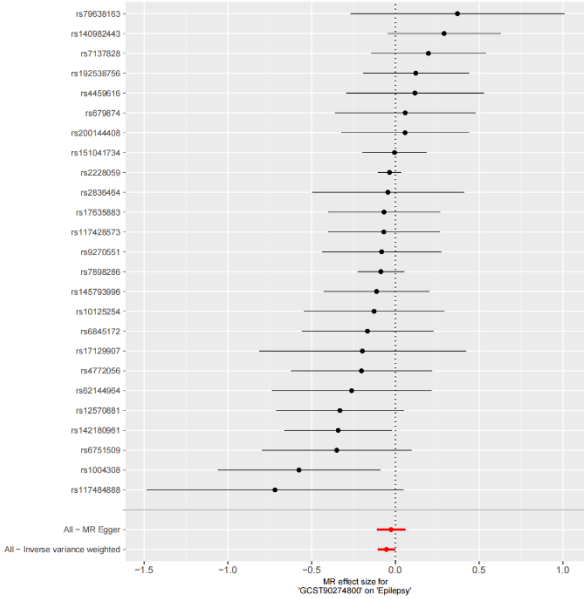
(1) CCL23 on epilepsy



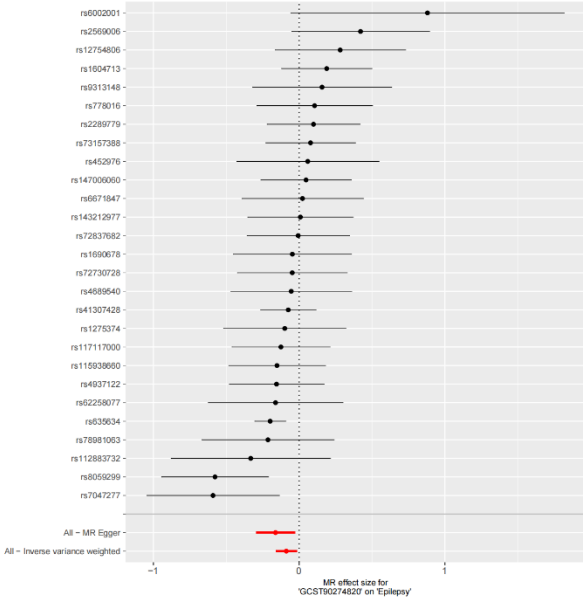
(2) CXCL11 on epilepsy



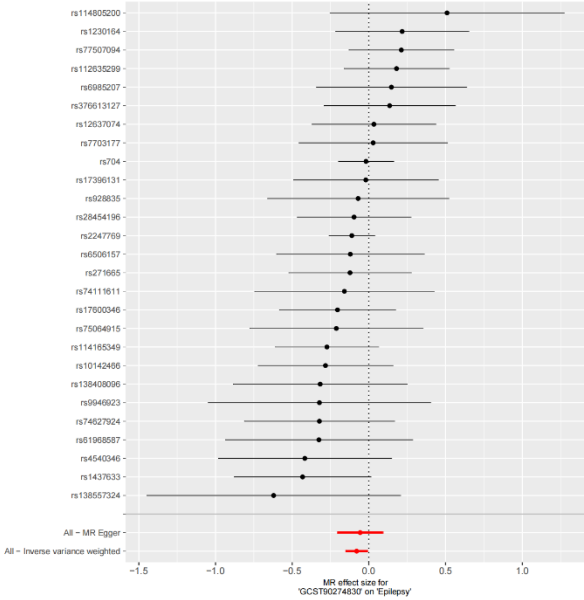
(3) CXCL6 on epilepsy



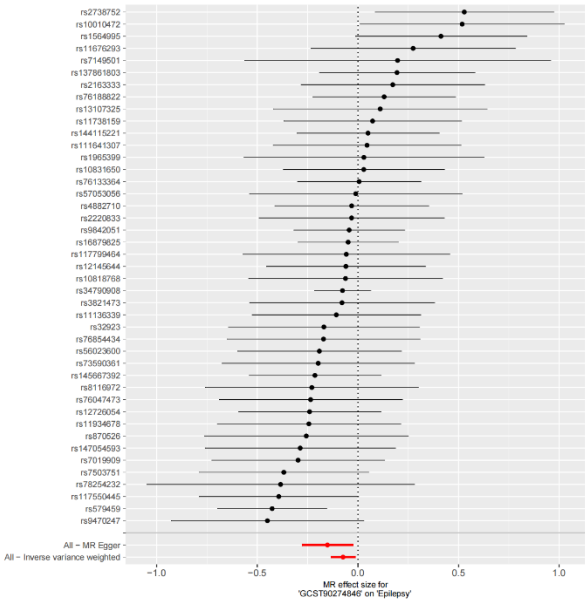
(4) IL-13 on epilepsy



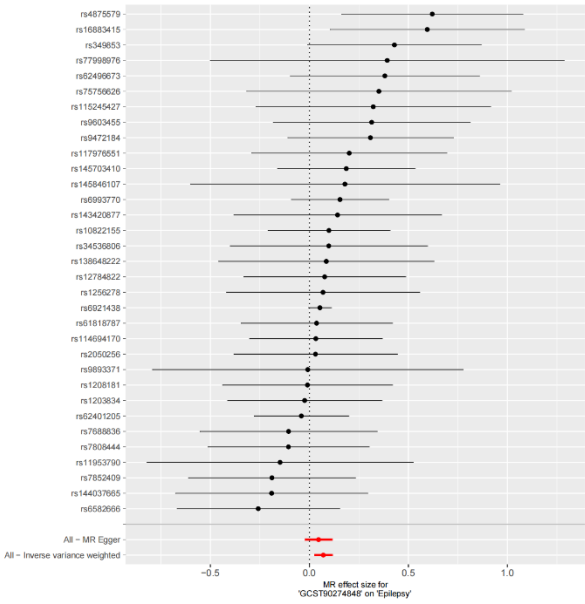
(5) LIF-R on epilepsy



(6) OPG on epilepsy

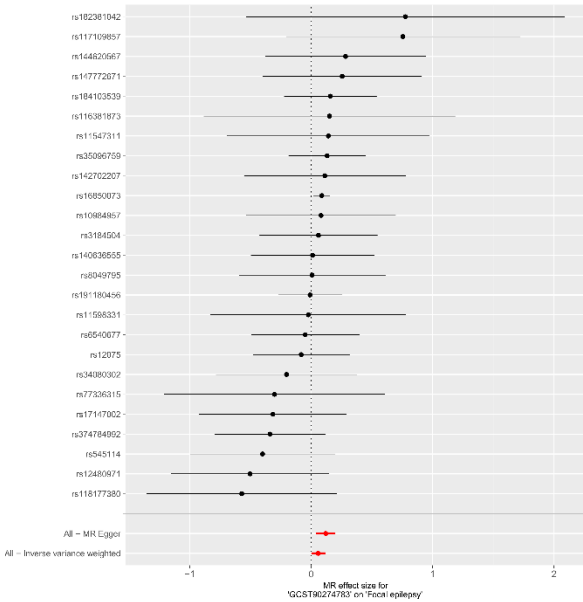


(7) TNF on epilepsy

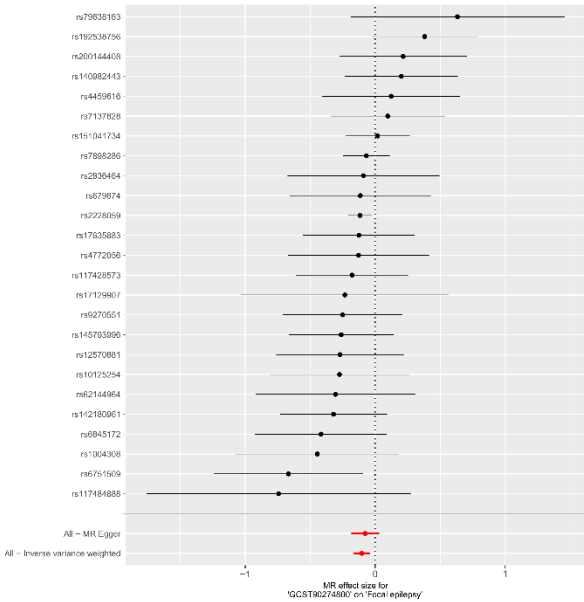


(8) VEGF_A on epilepsy

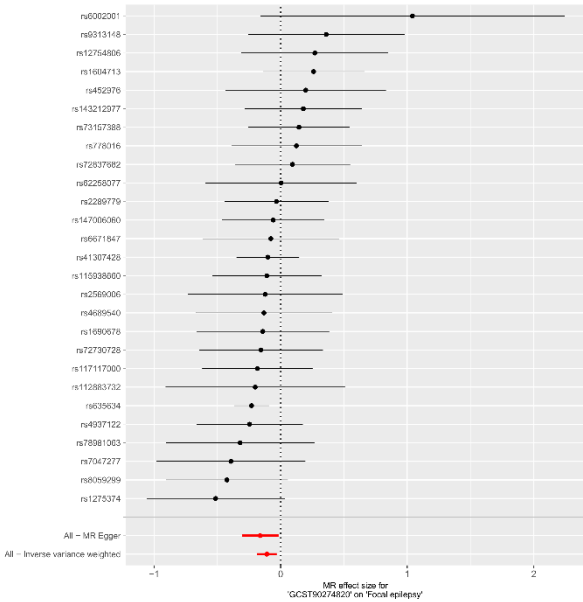
Fig. S22. Forest plots for the effect of inflammatory protein on FE. CXCL, C-X-C motif chemokine ligand; FE, focal epilepsy; IL, interleukin; LIF-R, leukemia inhibitory factor receptor; MR, Mendelian randomization; TNF, tumor necrosis factor.



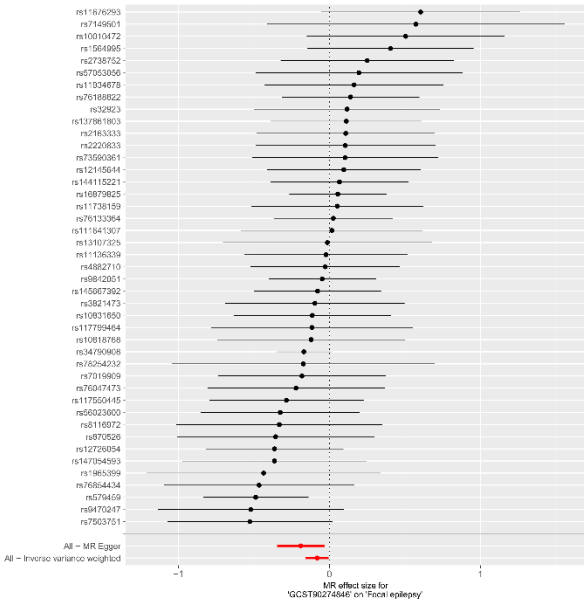
(1) CXCL6 on FE



(2) IL-13 on FE

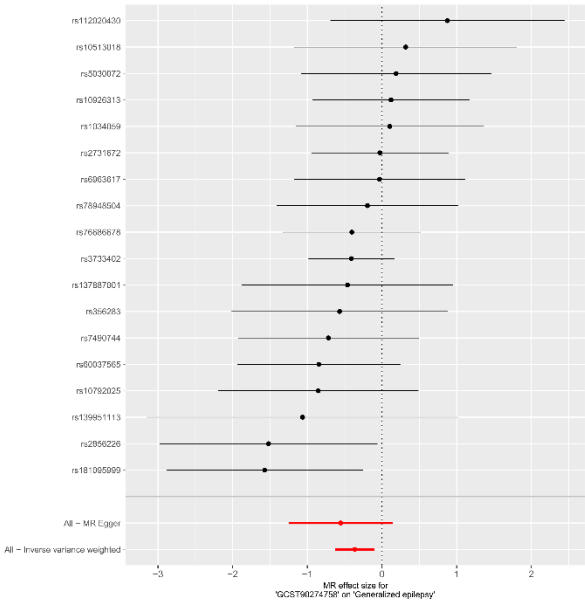


(3) LIF-R on FE

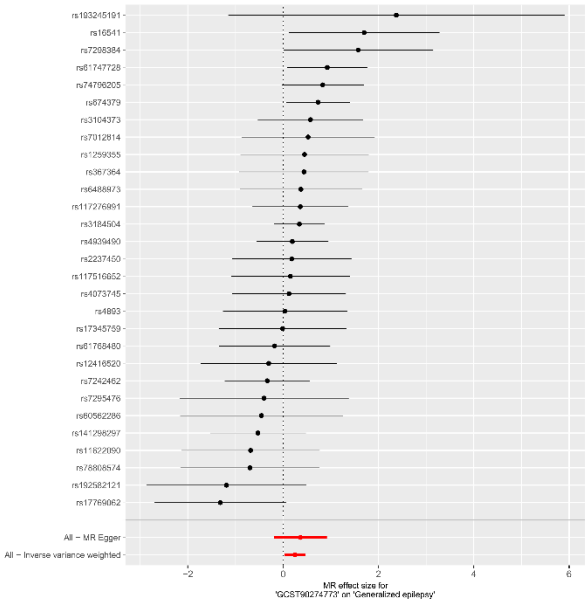


(4) TNF on FE

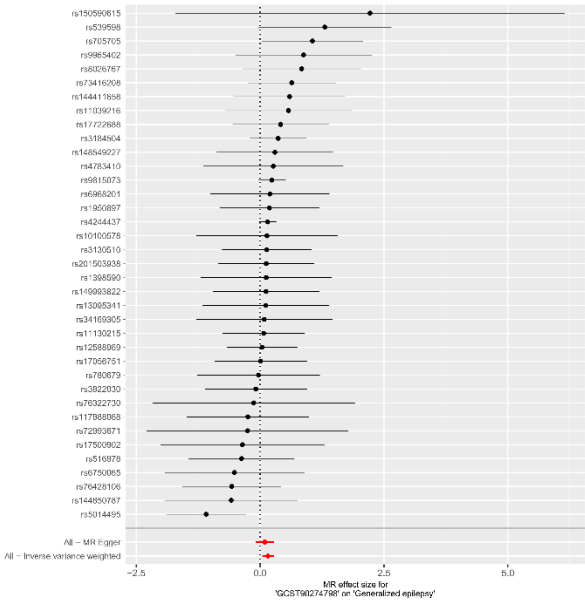
Fig. S23. Forest plots for the effect of inflammatory protein on GE. CD, cluster of differentiation; GE, generalized epilepsy; IL, interleukin; IL10RB, interleukin 10 receptor subunit beta; MR, Mendelian randomization; TNFSF, tumor necrosis factor superfamily protein 4EBP1, eukaryotic initiation factor 4E binding protein 1.



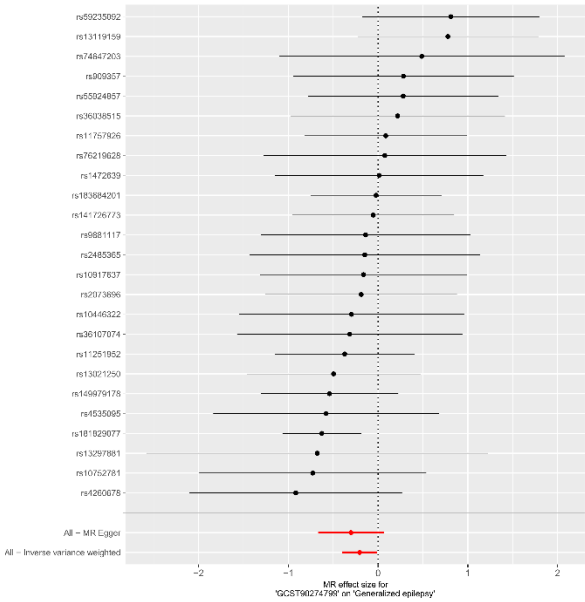
(1) 4EBP1 on GE



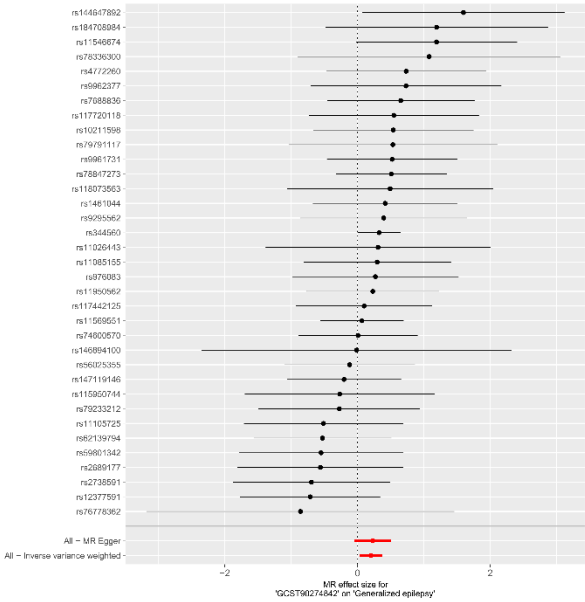
(2) CD5 on GE



(3) IL10RB on GE

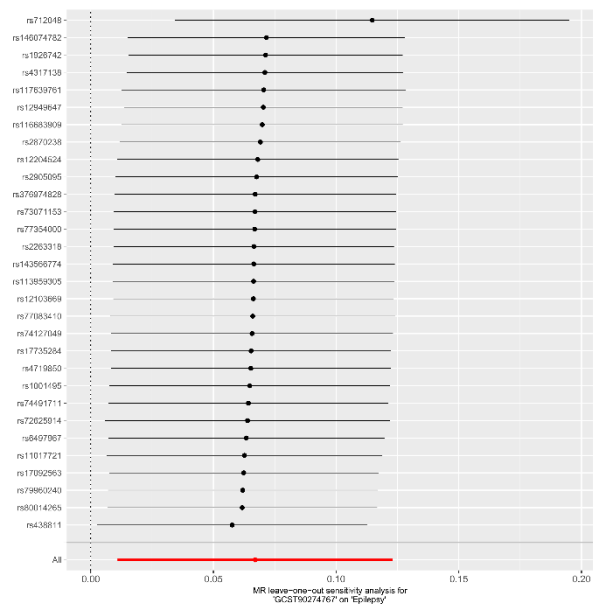


(4) IL-12B on GE

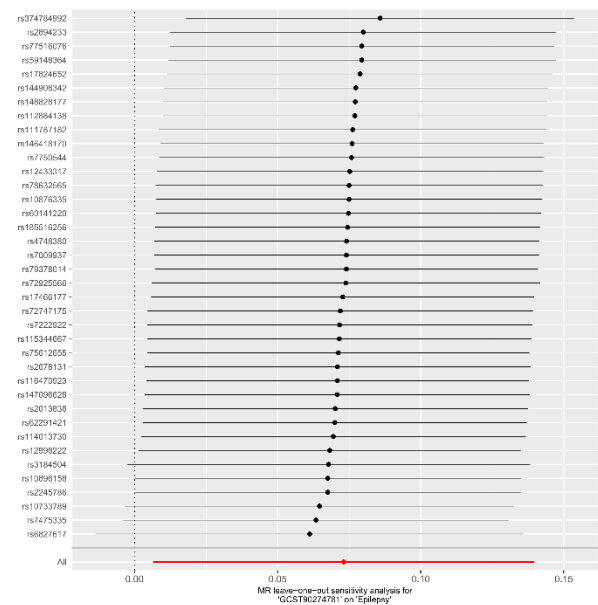


(5) TNFSF14 on GE

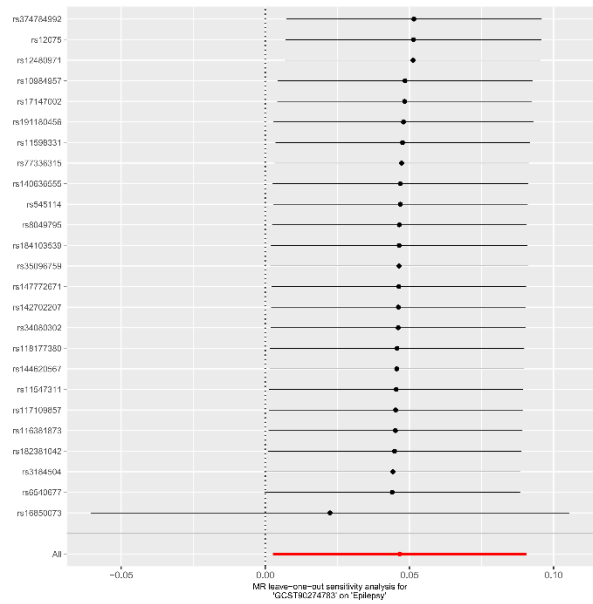
Fig. S24. MR leave-one-out sensitivity analysis inflammatory protein on epilepsy. CCL, C-C chemokine ligand; CXCL, C-X-C motif chemokine ligand; IL, interleukin; LIF-R, leukemia inhibitory factor receptor; MR, Mendelian randomization; OPG, osteoprotegerin; TNF, tumor necrosis factor; VEGF_A, vascular endothelial growth factor A.



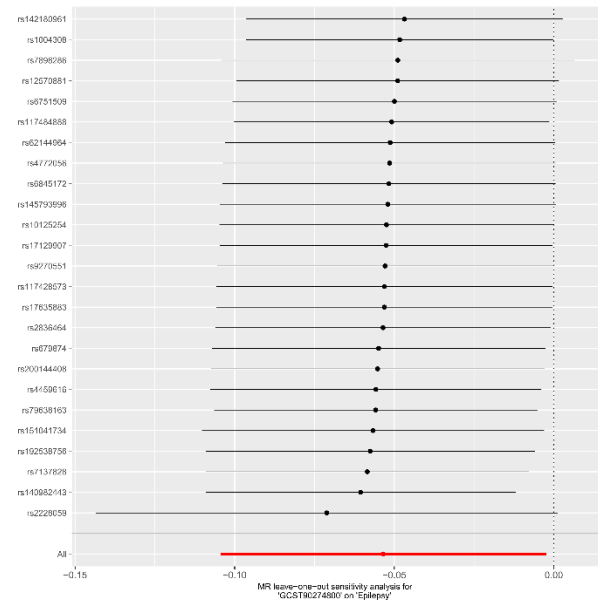
(1) CCL23 on epilepsy



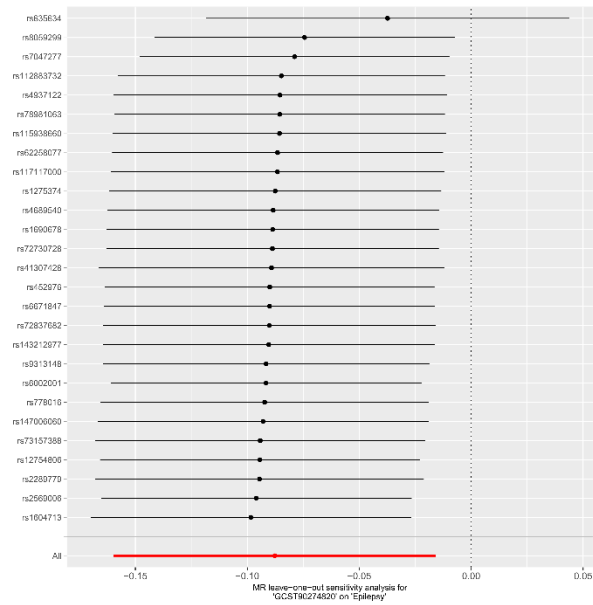
(2) CXCL11 on epilepsy



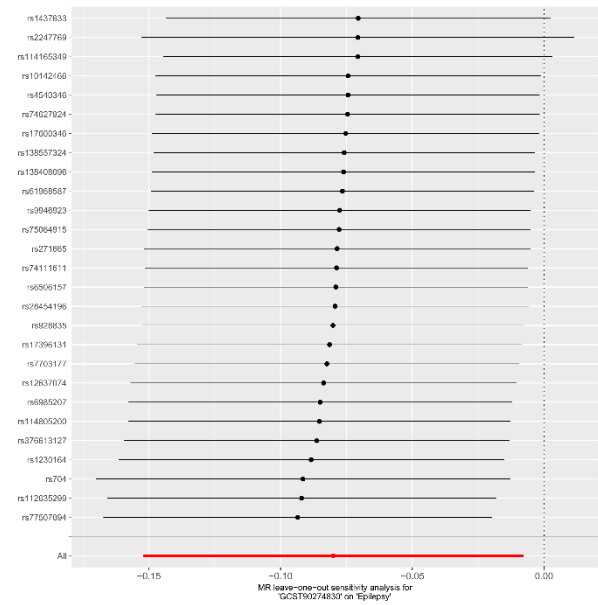
(3) CXCL6 on epilepsy



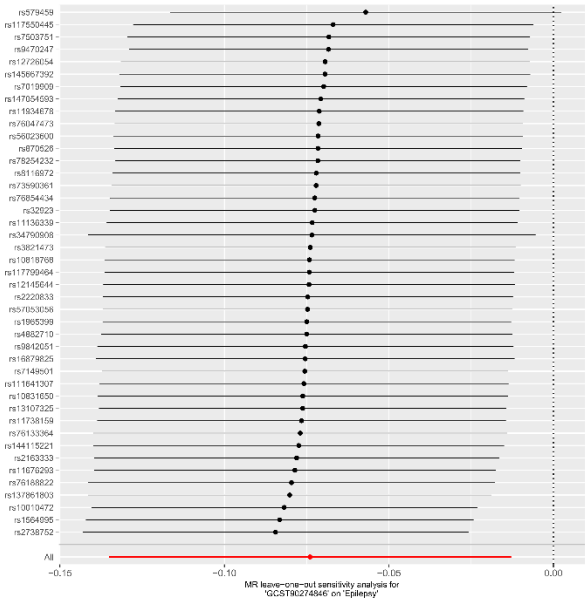
(4) IL-13 on epilepsy



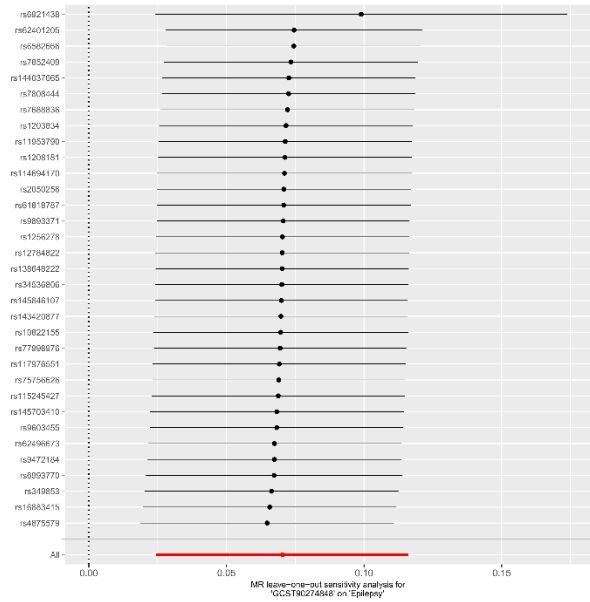
(5) LIF-R on epilepsy



(6) OPG on epilepsy



(7) TNF on epilepsy



(8) VEGF_A on epilepsy

Fig. S25. MR leave-one-out sensitivity analysis inflammatory protein on FE. CXCL, C-X-C motif chemokine ligand; FE, focal epilepsy; IL, interleukin; LIF-R, leukemia inhibitory factor receptor; MR, Mendelian randomization; TNF, tumor necrosis factor.

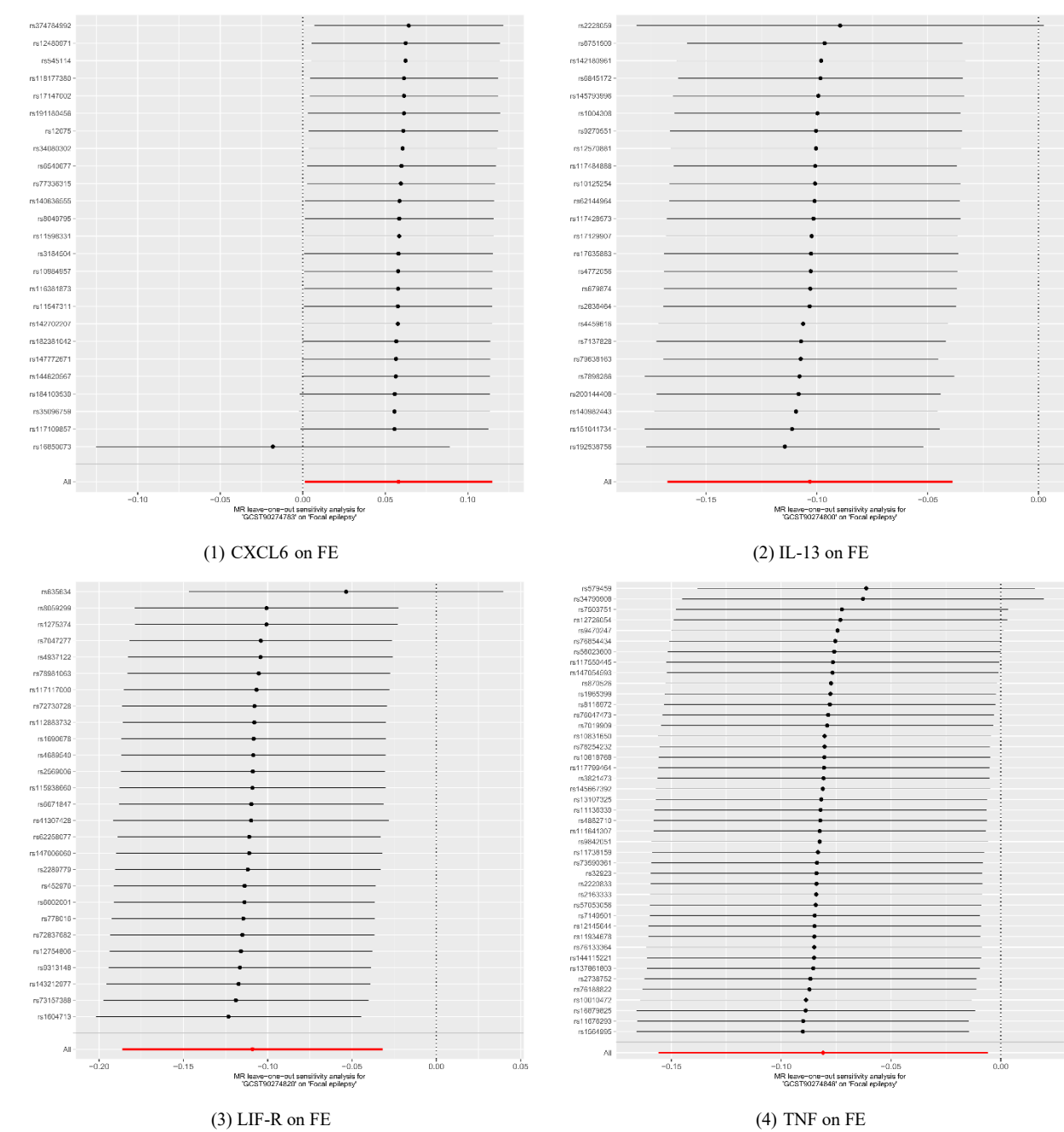


Fig. S26. MR leave-one-out sensitivity analysis inflammatory protein on GE. CD, cluster of differentiation; GE, generalized epilepsy; IL, interleukin; IL10RB, interleukin 10 receptor subunit beta; MR, Mendelian randomization; TNFSF, tumor necrosis factor superfamily protein; 4EBP1, eukaryotic initiation factor 4E binding protein 1.

