|  | SNP | slope | intercept | rvalue | pvalue | stderr |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| STX3 threshold $=$$0.001$ | rs78578195 | 0.151545603 | 0.026644268 | 0.078284099 | $1.60972 \mathrm{E}-06$ | 0.031540386 |
|  | rs149718569 | -0.13992187 | 0.015052994 | -0.068690832 | $2.57914 \mathrm{E}-05$ | 0.03321176 |
|  | rs17154394 | -0.061894688 | 0.026254847 | -0.056287633 | 0.000567597 | 0.017942518 |
|  | rs147809952 | -0.102232743 | 0.014846399 | -0.057489013 | 0.000431014 | 0.02901472 |
| $\begin{gathered} \text { STX3 threshold = } \\ 0.05 \end{gathered}$ | rs78578195 | 0.151545603 | 0.026644268 | 0.078284099 | $1.60972 \mathrm{E}-06$ | 0.031540386 |
|  | rs149718569 | -0.13992187 | 0.015052994 | -0.068690832 | $2.57914 \mathrm{E}-05$ | 0.03321176 |
|  | rs17154394 | -0.061894688 | 0.026254847 | -0.056287633 | 0.000567597 | 0.017942518 |
|  | rs147809952 | -0.102232743 | 0.014846399 | -0.057489013 | 0.000431014 | 0.02901472 |
|  | rs143663006 | -0.075705096 | 0.009639971 | -0.040827239 | 0.012453667 | 0.030279237 |
|  | rs12277676 | 0.036821622 | -0.025930443 | 0.03836352 | 0.018869268 | 0.015674609 |
|  | rs76109966 | -0.06894834 | 0.013049753 | -0.044388437 | 0.006583522 | 0.025360497 |
|  | rs2123679 | 0.034582052 | -0.023550138 | 0.035891996 | 0.02803981 | 0.015736398 |
|  | rs12791616 | -0.059144916 | 0.01310472 | -0.040781375 | 0.012552751 | 0.023682426 |
| SREBF2 threshold =$0.001$ | rs41311445 | 0.094166654 | -0.047038834 | 0.096667938 | $3.05838 \mathrm{E}-09$ | 0.015845577 |
|  | rs742086 | -0.037289623 | 0.021740667 | -0.057365217 | 0.00044352 | 0.010606099 |
|  | rs9607850 | -0.033116235 | 0.029783394 | -0.055897126 | 0.000620038 | 0.009667274 |
| $\begin{gathered} \text { SREBF2 threshold }= \\ 0.05 \end{gathered}$ | rs41311445 | 0.094166654 | -0.047038834 | 0.096667938 | $3.05838 \mathrm{E}-09$ | 0.015845577 |
|  | rs742086 | -0.037289623 | 0.021740667 | -0.057365217 | 0.00044352 | 0.010606099 |
|  | rs9607850 | -0.033116235 | 0.029783394 | -0.055897126 | 0.000620038 | 0.009667274 |
|  | rs34344173 | -0.03716766 | 0.005655517 | -0.033535031 | 0.04013182 | 0.018103154 |

The models generated for STX3 and SREBF2 by the method using the series of single linear regressions. The Index indicates the performed run giving the gene for which the Cis-eQTL SNPs were indentified and the $p$-value threshold used during the run. The columns give in order: SNP, the code of the Cis-eQTL SNP; Slope, the slope of the variable of the model. Intercept, the intercept of the SNP model; rvalue, the Pearson rank correlation between the prediction made by the model of the SNP and the measurements; pvalue, the probability that the slope of the model is not zero and that there is an association between the $x$ (genotype of SNP) an $y$-value (gene expression) of the model. Each SNP given a linear regresion model in which the genotype of that SNP was the single variable, which is why the method is said to use a series of single linear regressions)

|  | Component | Intercept | Coefficients |
| :---: | :---: | :---: | :---: |
| $\begin{gathered} \text { STX3 threshold = } \\ 0.001 \end{gathered}$ | Intercept | 0.088529045 |  |
|  | rs147809952 |  | -0.104819748 |
|  | rs149718569 |  | -0.160029855 |
|  | rs17154394 |  | -0.065419598 |
|  | rs78578195 |  | 0.136937191 |
| $\begin{gathered} \text { STX3 threshold = } \\ 0.05 \end{gathered}$ | Intercept | 0.041955264 |  |
|  | rs112505206 |  | 0.057106107 |
|  | rs12277676 |  | 0.074728256 |
|  | rs12791616 |  | -0.139459696 |
|  | rs143663006 |  | -0.128140354 |
|  | rs147809952 |  | -0.103219982 |
|  | rs149718569 |  | -0.152626459 |
|  | rs17154394 |  | -0.058852962 |
|  | rs2123679 |  | 0.050493793 |


|  | rs61903579 |  | 0.151421807 |
| :---: | :---: | :---: | :---: |
|  | rs72927436 |  | -0.173251409 |
|  | rs76109966 |  | -0.113988964 |
|  | rs78578195 |  | 0.146416274 |
| $\begin{gathered} \text { SREBF2 threshold }= \\ 0.001 \end{gathered}$ | Intercept | -0.026927554 |  |
|  | rs41311445 |  | 0.107012117 |
|  | rs742086 |  | -0.039182549 |
| $\begin{gathered} \text { SREBF2 threshold }= \\ 0.05 \end{gathered}$ | Intercept | 0.001278249 |  |
|  | rs132762 |  | -0.036332815 |
|  | rs41311445 |  | 0.096244168 |
|  | rs742086 |  | -0.044903286 |

The models generated for STX3 and SREBF2 by the method using the Multivariate linear regressions. The Index indicates the performed run giving the gene for which the CiseQTL SNPs were indentified and the p-value threshold used during the run. The columns give in order: Component, the component of the model which is either the intercept or a SNP which is a variable in the model; Intercept, the value of the intercept of the model (only for intercept component); Coefficients, the coefficient value of a variable of the model (only for SNP components of the model).

|  | Component | Intercept | Coefficients | p-values |
| :---: | :---: | :---: | :---: | :---: |
| SREBF2 using eQTLgen pipeline Cis eQTL SNPs | Intercept | 0.016156718 |  | 0.482818201 |
|  | rs133369 |  | -0.149103191 | 0.550295359 |
|  | rs6002546 |  | 0.003845065 | 0.793049334 |
|  | rs133368 |  | 0.099871739 | 0.682020291 |
|  | rs5758566 |  | -0.296581338 | 0.170939631 |
|  | rs2301521 |  | -0.055643674 | 0.818235464 |
|  | rs133350 |  | -0.056466394 | 0.840562837 |
|  | rs2854837 |  | 0.424876835 | 0.073535754 |
| STX3 using eQTLgen pipeline Cis-eQTL SNPs | Intercept | 0.0342839 |  | 0.012007981 |
|  | rs11607283 |  | -0.390075416 | 0.12490411 |
|  | rs11230061 |  | 0.061634533 | 0.001425332 |
|  | rs147809952 |  | -0.130659698 | 0.292174027 |
|  | rs74559732 |  | 0.36116189 | 0.15620291 |
|  | rs61901646 |  | 0.082722411 | 0.399972674 |


|  | rs77558100 |  | -0.00560233 | 0.933328484 |
| :---: | :---: | :---: | :---: | :---: |
|  | Intercept | -0.013339186 |  | 0.429310109 |
| SREBF2 using <br> toRegressOut.log.gz <br> Cis-eQTL SNPs | rs133367 |  | -0.046914384 | $1.58435 \mathrm{E}-06$ |
| Ins2076 | rs20768 |  | 0.041592903 | $1.52652 \mathrm{E}-05$ |
| STX3 using <br> toRegressOut.log.gz <br> Cis-eQTL SNPs | rs77952732 | 0.007547396 | 0.15485743 | $1.07225 \mathrm{E}-06$ |
|  | rs118030976 |  | 0.100602523 | $9.28034 \mathrm{E}-05$ |

The models generated for STX3 and SREBF2 using SNP identified by external methods. The Index indicates the gene of the model as well as the external method used to obtain the Cis-eQTL SNPs of that gene. The columns give in order: Component, the component of the model which is either the intercept or a SNP which is a variable in the model; Intercept, the value of the intercept of the model (only for intercept component); Coefficients, the coefficient value of a variable of the model (only for SNP components of the model); p-values, gives the $p$-value of the component of the model (indicates the probability that any association between that component and the gene expression is due to random chance).

|  | Component | Intercept | Coefficients | p-values |
| :---: | :---: | :---: | :---: | :---: |
| NOD2 using eQTLgen pipeline Cis-eQTL SNPs for STX3, initialization using predicted values of STX3 | Intercept | -0.469642175 |  | $1.6148 \mathrm{E}-301$ |
|  | rs1981760 |  | 0.97762827 | 0 |
|  | ENSG00000166900 |  | -0.061765056 | 0.709068745 |
|  | $\begin{gathered} \text { rs1981760 * } \\ \text { ENSG00000166900 } \end{gathered}$ |  | 0.031532872 | 0.882010185 |
| FADS2 using eQTLgen pipeline CiseQTL SNPs for SREBF2, initialization using predicted values of SREBF2 | Intercept | -1.146713678 |  | 0 |
|  | rs968567 |  | 3.231339464 | 0 |
|  | ENSG00000198911 |  | -0.348737453 | 0.509034818 |
|  | $\begin{gathered} \text { rs968567 } \\ \text { ENSG00000198911 } \end{gathered}$ |  | 2.036018994 | 0.015369611 |
| NOD2 using toRegressOut.log.gz Cis-eQTL SNPs for STX3, initialization using predicted values of STX3 | Intercept | -0.482088554 |  | 0 |
|  | rs1981760 |  | 0.981937345 | 0 |
|  | ENSG00000166900 |  | 0.223776898 | 0.107519563 |
|  | $\begin{gathered} \text { rs1981760 } \\ \text { ENSG00000166900 } \end{gathered}$ |  | -0.072683895 | 0.678446514 |
| FADS2 using toRegressOut.log.gz Cis-eQTL SNPs for | Intercept | -1.139895126 |  | 0 |
|  | rs968567 |  | 3.178320361 | 0 |


| STX3, initialization using predicted values of STX3 | ENSG00000198911 |  | -0.105031956 | 0.734113509 |
| :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} \text { rs968567 * } \\ \text { ENSG00000198911 } \end{gathered}$ |  | 0.122903176 | 0.806800686 |
| NOD2 initialization using measured values of STX3 | Intercept | -0.469506786 |  | 0 |
|  | rs1981760 |  | 0.971215722 | 0 |
|  | ENSG00000166900 |  | -0.046452912 | 0.000705546 |
|  | $\begin{gathered} \text { rs1981760 * } \\ \text { ENSG00000166900 } \end{gathered}$ |  | 0.118318389 | 6.20247E-12 |
| FADS2 initialization using measured values of SREBF2 | Intercept | -1.105159287 |  | 0 |
|  | rs968567 |  | 3.143690481 | 0 |
|  | ENSG00000198911 |  | 0.740127852 | 8.5968E-123 |
|  | $\begin{gathered} \text { rs968567 * } \\ \text { ENSG00000198911 } \end{gathered}$ |  | -0.370642814 | $2.68643 \mathrm{E}-13$ |

The Interactions models generated for NOD2 and FADS2 . The Index indicates the gene of the model, the external method used to obtain the Cis-eQTL SNPs of that gene and whether or not the model was initialized using the predicted or the measured values of the TF gene (STX3 or SREBF2). The columns give in order: Component, the component of the model which is either the intercept or a SNP which is a variable in the model; Intercept, the value of the intercept of the model (only for intercept component); Coefficients, the coefficient value of a variable of the model (only for SNP components of the model); p-values, gives the p-value of the component of the model (indicates the probability that any association between that component and the gene expression is due to random chance).

