



**Figure S3.** Genome-wide association for gel-free volume (VOL,  $n=109$ ). (a) Manhattan plot (blue line representing the suggestive significance threshold ( $p < 10^{-5}$ ) and (red line) the Bonferroni-corrected significance threshold ( $p < 4.56 \times 10^{-7}$ ). The inset on the right hand corner shows the quantile-quantile (Q-Q) plot with the observed  $p$ -value plotted against the expected one. (b,c) boxplots representing the genotype effect of the best associated SNP on ECA1 (b) and ECA20 (c) on the gel-free volume.