



**Supplementary Figure 4.** Correlation between IgG glycosylation and estrogen levels and disease activity. Correlation between (a) IgG-Fc sialylation and (b) IgG-Fc galactosylation (y-axis) and estrogen level (x-axis). Correlation between (c) IgG-Fc sialylation and (d) IgG-Fc galactosylation (y-axis) and Disease Activity Score (DAS) (x-axis). Spearman's correlation coefficients ( $r$ ) and  $p$  values are shown.