How can I identify specific biomarkers for a disease?

Example: What biomarkers are specific for Lyme Disease?

Steps to follow:

1. Put **Lyme Disease** in a new pathway.

2. Identify proteins quantitatively changed by Lyme Disease. Use the Build Pathway Wizard with the following settings: Expand Pathway > Directionality "downstream" > Entity type: "Protein" > Relation type "QuantitativeChange" and "Biomarker."

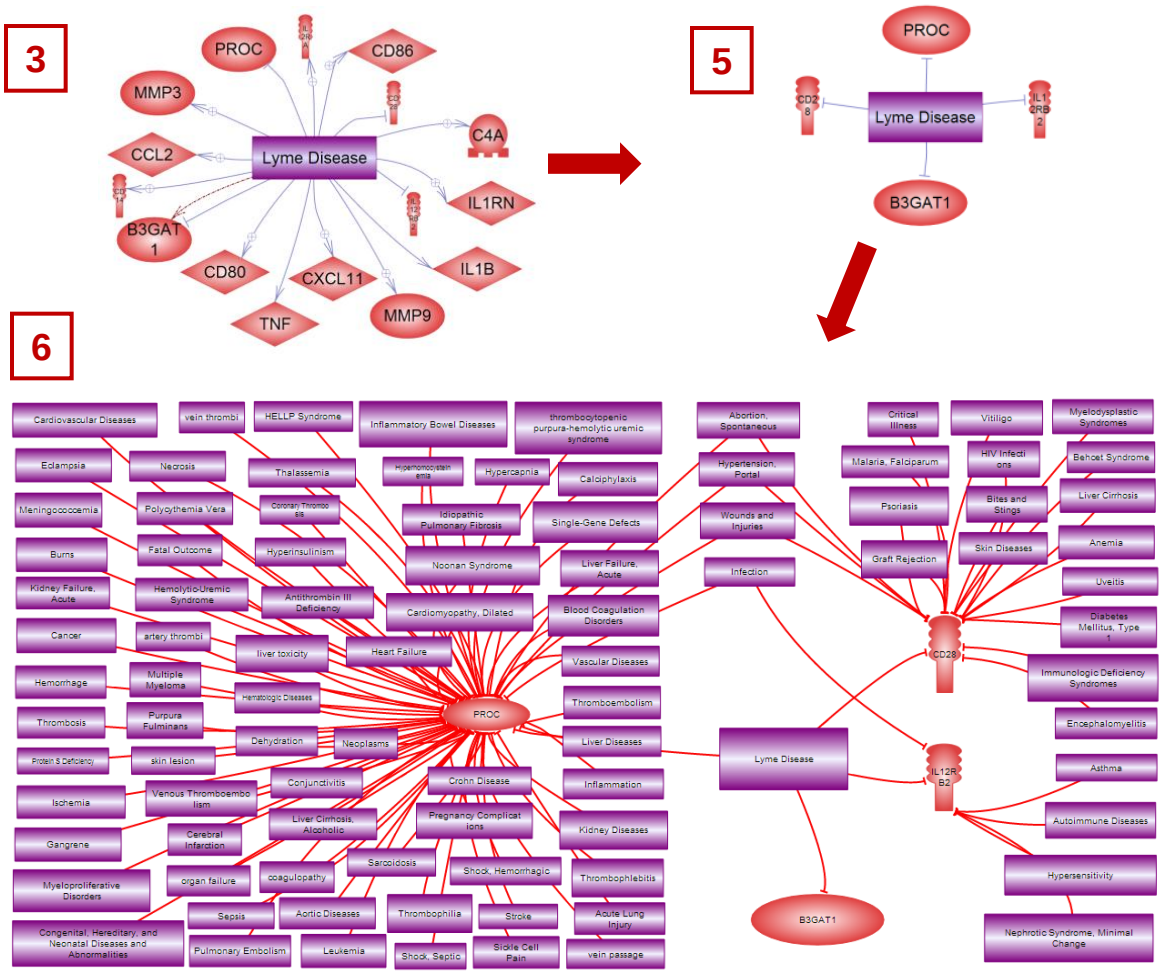
3. Select one protein at a time to identify other upstream diseases that share the biomarker. Use the Build Pathway Wizard with the following settings: Expand Pathway > Directionality "upstream" > Entity type: "Protein" > Relation type "QuantitativeChange" and "Biomarker."

5. Identify biomarkers with low numbers of shared diseases and unique up- or down-regulation of biomarkers. Here we chose B3GAT1 (uniquely down-regulated by Lyme Disease) and filtered for only down-regulated biomarkers using View > Relation Table View.

6. Identify all upstream negative regulators of the targets. Select Proteins, then use the Build Pathway Wizard with the following settings: Expand Pathway > Directionality "upstream" > Entity type: "Protein" > Relation type "QuantitativeChange" and "Biomarker."

6. In the Graph View choose Style > Active Style Sheet > By Effect.

Point to consider: Removing relations with low reference counts increases the confidence in the resulting network.



Diseases that share negative regulation of Lyme disease biomarkers are shown. B3GAT1 is the only biomarker uniquely downregulated.

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