

(A) Primary network.





Figure S6: MOCASSIN-prot networks for *B. subtilis.* Primary (A) and secondary (B) protein similarity networks were generated by MOCASSIN-prot. The edge color (in varying shades of blue) indicates the edge weight, with darker edges (darker blue or black) indicating higher weights and lighter edges indicating lower weights. The optimal objective value for each protein is represented in the network by the length of its incoming edges, with longer edges corresponding to smaller objective values and longer edges indicating high objective values.



(A) Primary network.



(B) Secondary network.

Figure S7: MOCASSIN-prot networks for *E. coli.* Primary (A) and secondary (B) protein similarity networks were generated by MOCASSIN-prot. The edge color (in varying shades of blue) indicates the edge weight, with darker edges (darker blue or black) indicating higher weights and lighter edges indicating lower weights. The optimal objective value for each protein is represented in the network by the length of its incoming edges, with longer edges corresponding to smaller objective values and longer edges indicating high objective values.



(A) Primary network.



(B) *Secondary network.*

Figure S8: MOCASSIN-prot networks for *T. pallidum*. Primary (A) and secondary (B) protein similarity networks were generated by MOCASSIN-prot. The edge color (in varying shades of blue) indicates the edge weight, with darker edges (darker blue or black) indicating higher weights and lighter edges indicating lower weights. The optimal objective value for each protein is represented in the network by the length of its incoming edges, with longer edges corresponding to smaller objective values and longer edges indicating high objective values.



(A) Primary network.



(B) *Secondary network.*

Figure S9: MOCASSIN-prot networks for *Str. pyogenes.* Primary (A) and secondary (B) protein similarity networks were generated by MOCASSIN-prot. The edge color (in varying shades of blue) indicates the edge weight, with darker edges (darker blue or black) indicating higher weights and lighter edges indicating lower weights. The optimal objective value for each protein is represented in the network by the length of its incoming edges, with longer edges corresponding to smaller objective values and longer edges indicating high objective values.



(A) Primary network.



(B) Secondary network.

Figure S10: MOCASSIN-prot networks for *Sta. epidermidis.* Primary (A) and secondary (B) protein similarity networks were generated by MOCASSIN-prot. The edge color (in varying shades of blue) indicates the edge weight, with darker edges (darker blue or black) indicating higher weights and lighter edges indicating lower weights. The optimal objective value for each protein is represented in the network by the length of its incoming edges, with longer edges corresponding to smaller objective values and longer edges indicating high objective values.





Figure S11: MOCASSIN-prot networks for *Sta. aureus.* Primary (A) and secondary (B) protein similarity networks were generated by MOCASSIN-prot. The edge color (in varying shades of blue) indicates the edge weight, with darker edges (darker blue or black) indicating higher weights and lighter edges indicating lower weights. The optimal objective value for each protein is represented in the network by the length of its incoming edges, with longer edges corresponding to smaller objective values and longer edges indicating high objective values.



(A) Primary network.





Figure S12: MOCASSIN-prot networks for *Y. pestis.* Primary (A) and secondary (B) protein similarity networks were generated by MOCASSIN-prot. The edge color (in varying shades of blue) indicates the edge weight, with darker edges (darker blue or black) indicating higher weights and lighter edges indicating lower weights. The optimal objective value for each protein is represented in the network by the length of its incoming edges, with longer edges corresponding to smaller objective values and longer edges indicating high objective values.



(A) Primary network.



(B) *Secondary network.*

Figure S13: MOCASSIN-prot networks for *D. melanogaster*. Primary (A) and secondary (B) protein similarity networks were generated by MOCASSIN-prot. The edge color (in varying shades of blue) indicates the edge weight, with darker edges (darker blue or black) indicating higher weights and lighter edges indicating lower weights. The optimal objective value for each protein is represented in the network by the length of its incoming edges, with longer edges corresponding to smaller objective values and longer edges indicating high objective values.

(A) Primary network.

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(B) *Secondary network.*

Figure S14: MOCASSIN-prot networks for *M. musculus***.** Primary (A) and secondary (B) protein similarity networks were generated by MOCASSIN-prot. The edge color (in varying shades of blue) indicates the edge weight, with darker edges (darker blue or black) indicating higher weights and lighter edges indicating lower weights. The optimal objective value for each protein is represented in the network by the length of its incoming edges, with longer edges corresponding to smaller objective values and longer edges indicating high objective values.







(B) *Secondary network.*

Figure S15: MOCASSIN-prot networks for *Sa. cerevisiae*. Primary (A) and secondary (B) protein similarity networks were generated by MOCASSIN-prot. The edge color (in varying shades of blue) indicates the edge weight, with darker edges (darker blue or black) indicating higher weights and lighter edges indicating lower weights. The optimal objective value for each protein is represented in the network by the length of its incoming edges, with longer edges corresponding to smaller objective values and longer edges indicating high objective values.