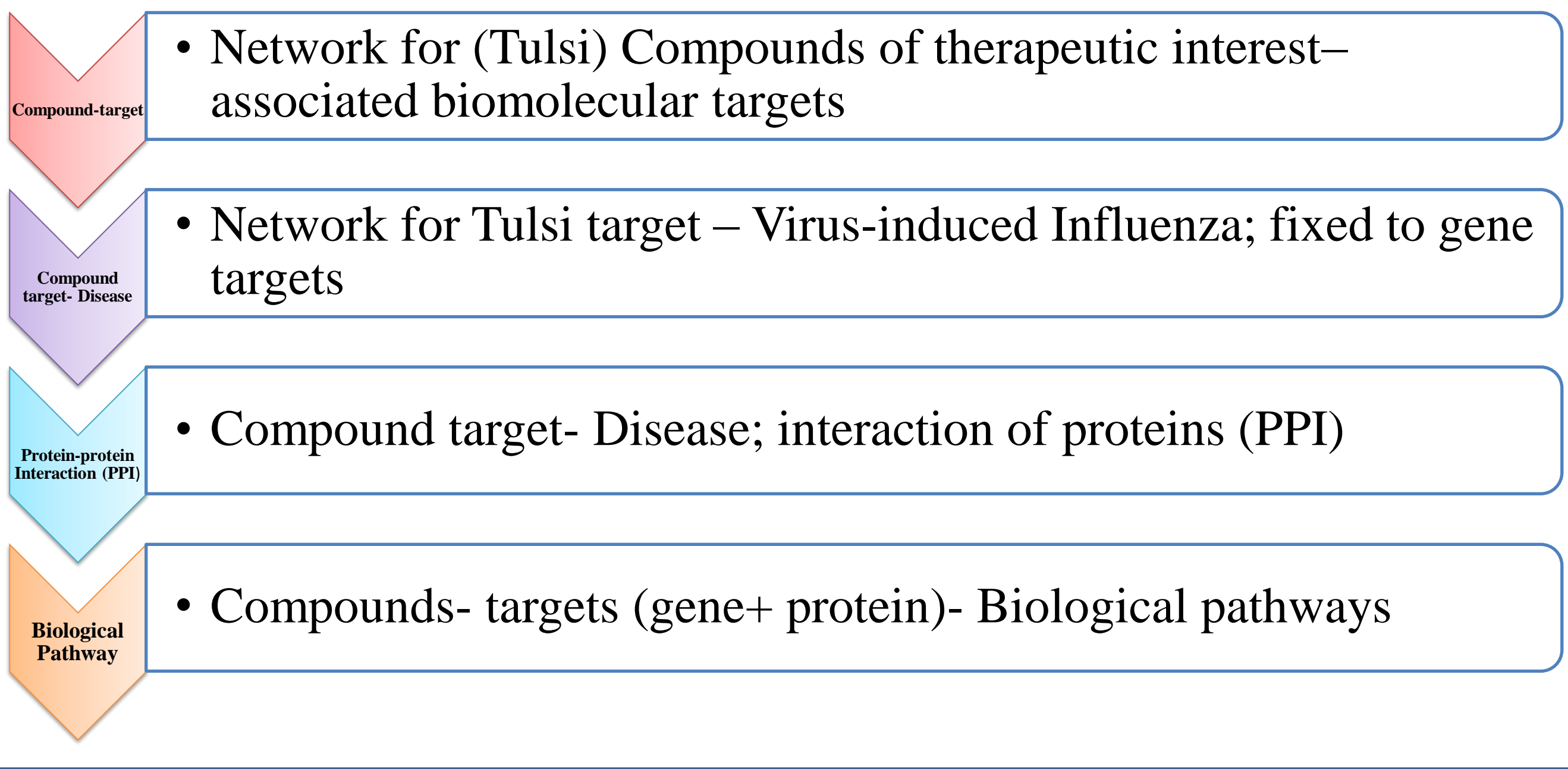


Introduction

- Natural products and traditional Indian medicines are the most abundant resources of active compounds for drug discovery. In India tulsi (*Ocimum sanctum*) is known as “queen of herbs”(Cohen, 2014) and their leaves considered divine and a main component of the Hindu rituals.
- Ocimum sanctum* leaves and stem have varieties of chemical constituents and considered as medical dispensary. It mainly contains phenolic compounds, apigenin, rosamaric acid, Cirsilineol and Eugenol. The volatiles like Linalool and carvacrol have been isolated from Tulsi (Yamani, 2016). Tulsi extract can treat various bacterial and viral infections and has immunomodulatory actions. Tulsi majorly involve to treat cough and cold, fever sore throat or asthma.
- These results suggest that Tulsi components can be utilized as a valuable chemical probe or a chemical moiety for the dissection of complex biological processes, discovery of hidden molecular relationships, and identification of therapeutic target molecules and pathways. Meanwhile, employment of computational methodologies for the identification of drug targets and the underlying mechanisms is becoming mainstream in order to save money, time, and effort. In particular, computational target identification and following the molecular mechanisms can accelerate the drug discovery and drug design processes.

Methodology



Results

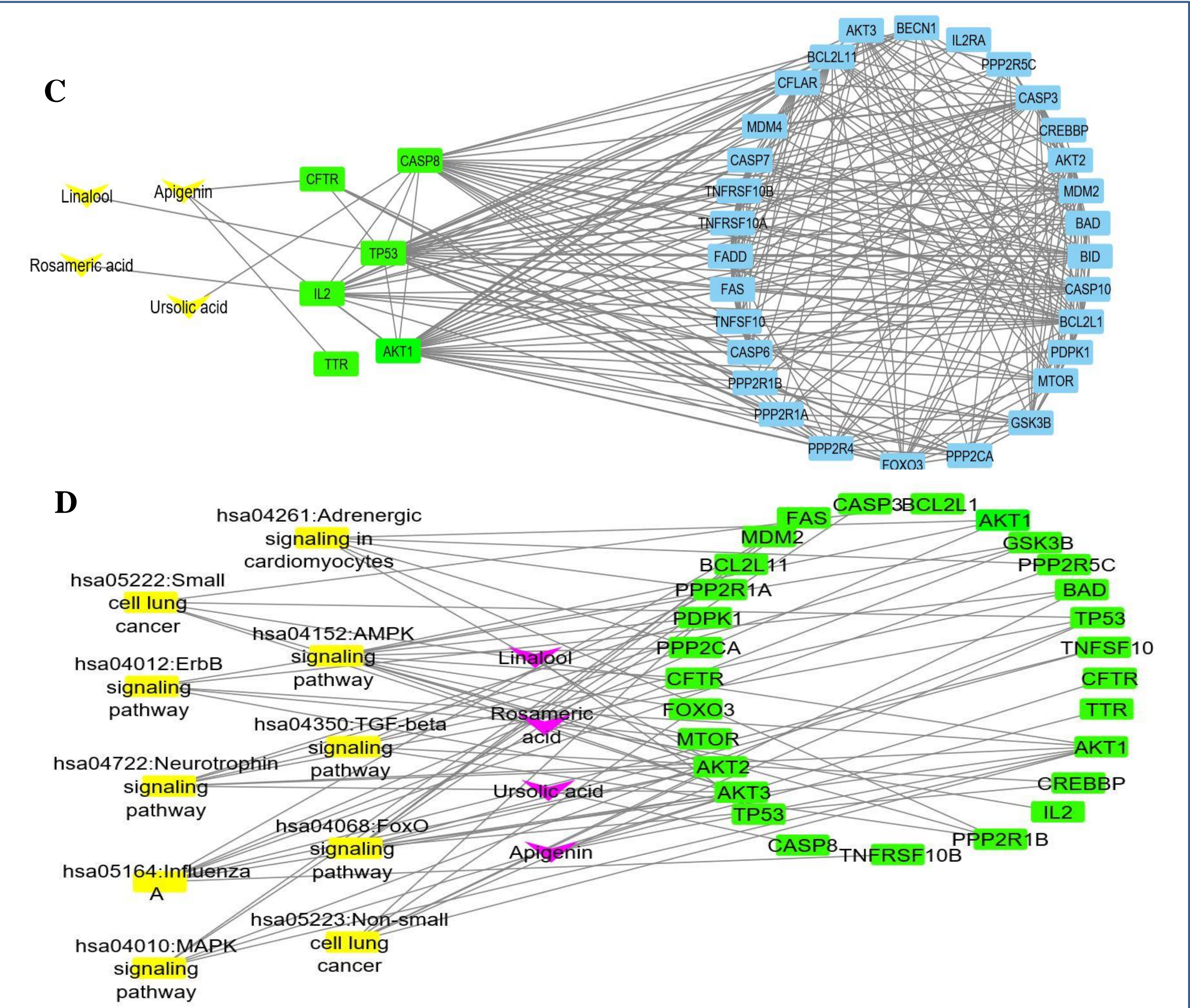
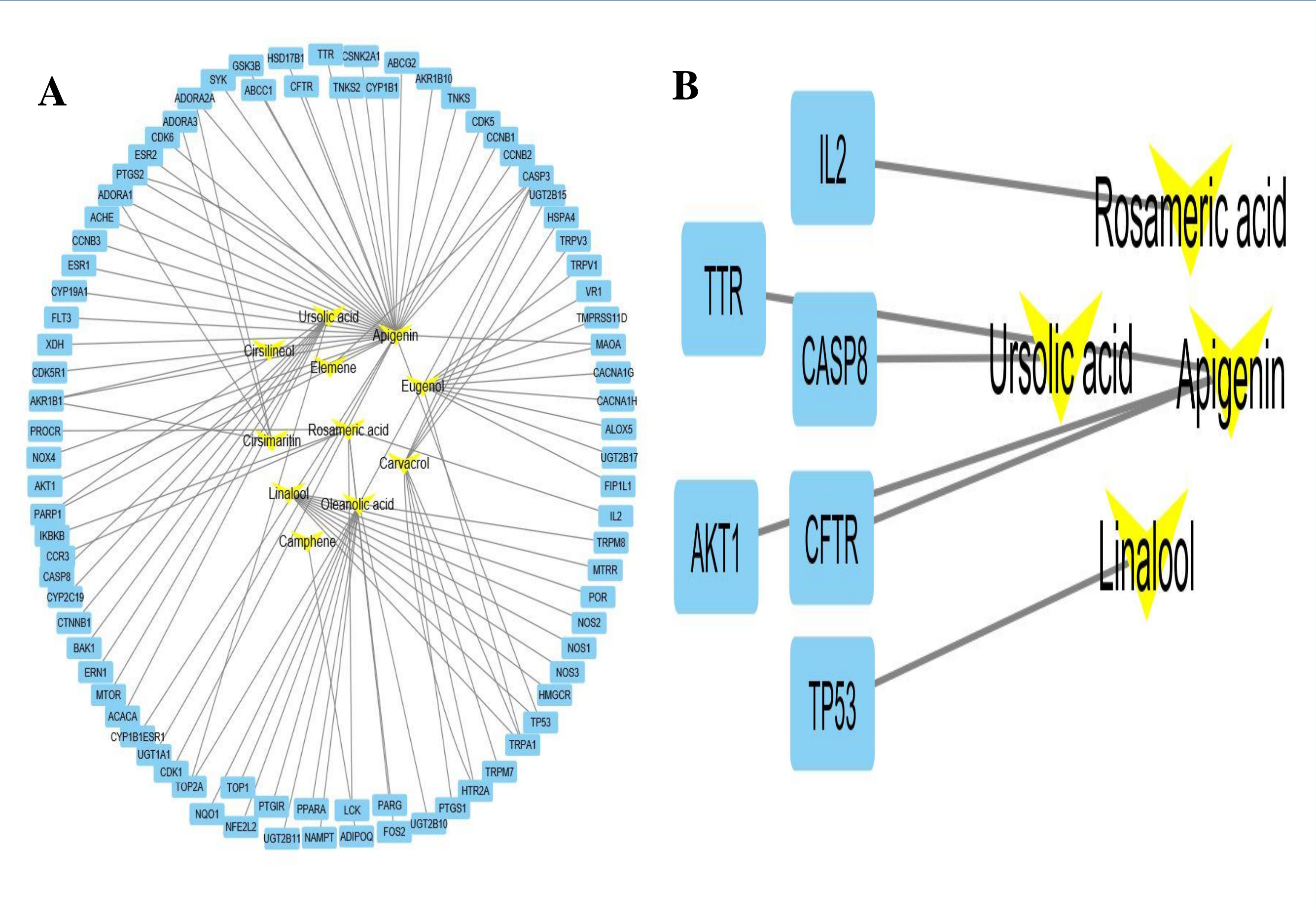


Figure 1: Intuitive networks for visualizing the ligand-target interactions; A) Tulsi component and its corresponding disease targets b) Screened cluster for core gene target c) Common Disease targets, components and its associated proteins retrieved through protein-protein interactions studies d) Functional enrichment analysis for targets of network among active common targets, associated proteins and pathways

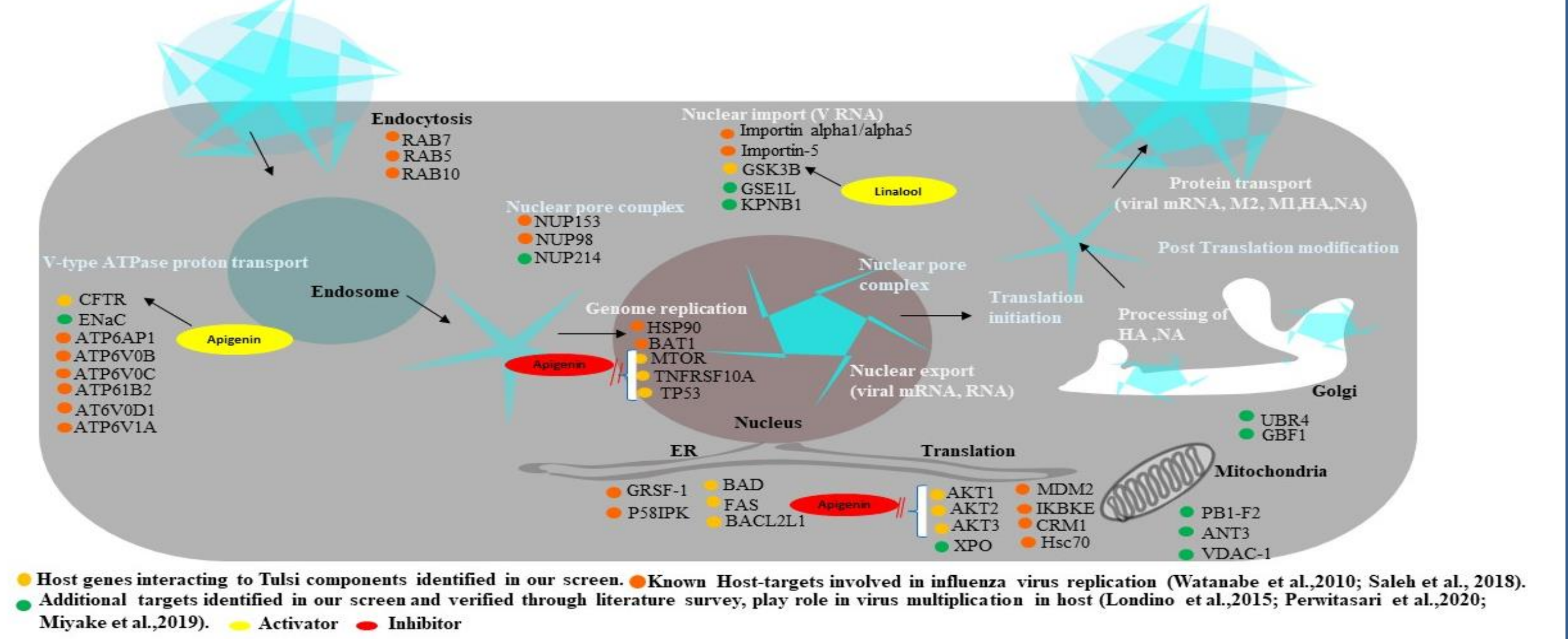


Figure 2: Factors associated in Virus-induced influenza.

Conclusion

The study proposes the repurposing of Apigenin in regulating the action of CFTR and threonine-specific protein kinases (Akt) as a treatment alternative for virus-induced influenza. The observations can be further validated towards the research design of biomedical sciences.

References

1. Cohen, M.M., 2014. Tulsi-Ocimum sanctum: A herb for all reasons. *Journal of Ayurveda and integrative medicine*, 5(4), p.251.

2. Yamani HA, Pang EC, Mantri N, Deighton MA. Antimicrobial activity of Tulsi (*Ocimum tenuiflorum*) essential oil and their major constituents against three species of bacteria. *Frontiers in microbiology*. 2016 May 17;7:681.