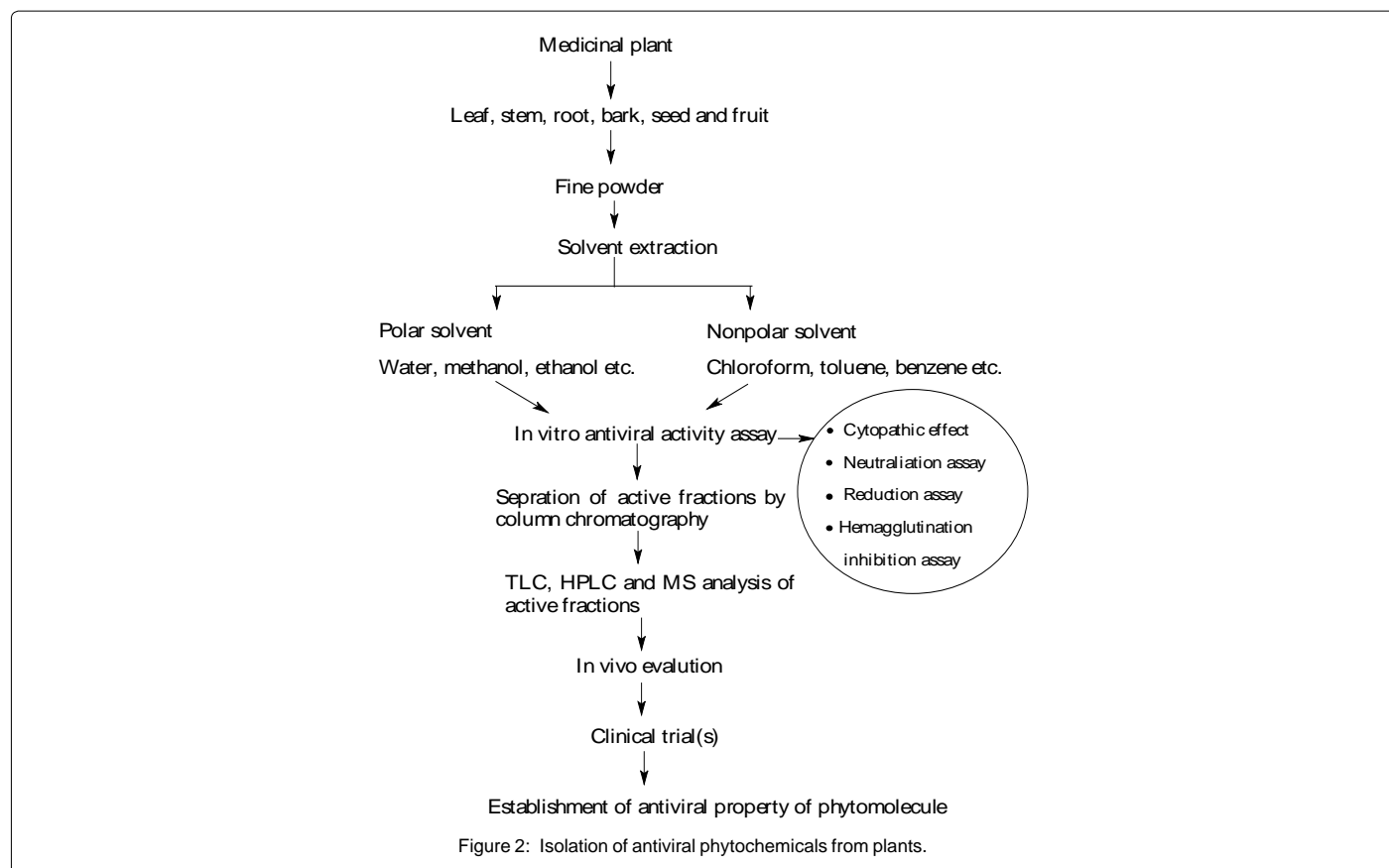


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64. *Tanacetum vulgare* L. (Asteraceae) is a well-known medicinal herb. It has been reported to possess antiviral activity against various viruses, including HIV-1, hepatitis B virus (HBV), and hepatitis C virus (HCV). The active constituents of *Tanacetum vulgare* are believed to be responsible for its antiviral effects.

65. *Limonium sinense* (Lamiaceae) is another medicinal herb that has been studied for its antiviral properties. It is reported to inhibit the replication of HIV-1 and HBV. The mechanism of action is thought to involve the inhibition of viral entry and the disruption of the viral life cycle.

Artocarpus lakoocha (Moraceae) is a medicinal tree that has been found to possess antiviral activity against HIV-1 and HBV. The active constituents of *Artocarpus lakoocha* are believed to be responsible for its antiviral effects.

Pterocarya stenoptera (Pterocarpaceae) is a medicinal tree that has been studied for its antiviral properties. It is reported to inhibit the replication of HIV-1 and HBV. The mechanism of action is thought to involve the inhibition of viral entry and the disruption of the viral life cycle.

67. *Bupleurum koidae* (Apiaceae) is a medicinal herb that has been found to possess antiviral activity against HIV-1 and HBV. The active constituents of *Bupleurum koidae* are believed to be responsible for its antiviral effects.

Citrifolium rotundifolium (Rutaceae) is a medicinal tree that has been found to possess antiviral activity against HIV-1 and HBV. The active constituents of *Citrifolium rotundifolium* are believed to be responsible for its antiviral effects.

Ruta angustifolia (Rutaceae) is a medicinal herb that has been found to possess antiviral activity against HIV-1 and HBV. The active constituents of *Ruta angustifolia* are believed to be responsible for its antiviral effects.

Liriope platyphylla (Lamiaceae) is a medicinal herb that has been found to possess antiviral activity against HIV-1 and HBV. The active constituents of *Liriope platyphylla* are believed to be responsible for its antiviral effects.

Citrus reticulata (Rutaceae) is a medicinal tree that has been found to possess antiviral activity against HIV-1 and HBV. The active constituents of *Citrus reticulata* are believed to be responsible for its antiviral effects.

68,69. *Scheera heptaphylla* (Simarubaceae) is a medicinal tree that has been found to possess antiviral activity against HIV-1 and HBV. The active constituents of *Scheera heptaphylla* are believed to be responsible for its antiviral effects.

Saururus chinensis (Lamiaceae) is a medicinal herb that has been found to possess antiviral activity against HIV-1 and HBV. The active constituents of *Saururus chinensis* are believed to be responsible for its antiviral effects.

71. *Artocarpus lakoocha* (Moraceae) is a medicinal tree that has been found to possess antiviral activity against HIV-1 and HBV. The active constituents of *Artocarpus lakoocha* are believed to be responsible for its antiviral effects.

Challenges and future avenues

The study of antiviral phytochemicals is a complex and multidisciplinary field. It requires a deep understanding of the molecular mechanisms of viral replication and the pharmacological properties of natural products. Future research should focus on identifying novel antiviral phytochemicals and elucidating their mechanisms of action. Additionally, the development of natural product-based antiviral drugs is a promising area of research that warrants further exploration.

Conclusion

The present study has demonstrated the antiviral activity of various phytochemicals against HIV-1. The results show that the phytochemicals tested, including flavonoids, terpenoids, and alkaloids, exhibit significant inhibitory effects on HIV-1 replication. The mechanism of action involves the inhibition of viral entry, reverse transcription, and integration. The study also highlights the potential of these phytochemicals as natural antiviral agents and their role in the development of novel antiviral drugs. Further research is needed to elucidate the precise mechanisms of action and to optimize the use of these compounds in clinical settings.

in the present study, the phytochemicals tested, including flavonoids, terpenoids, and alkaloids, exhibit significant inhibitory effects on HIV-1 replication. The mechanism of action involves the inhibition of viral entry, reverse transcription, and integration. The study also highlights the potential of these phytochemicals as natural antiviral agents and their role in the development of novel antiviral drugs. Further research is needed to elucidate the precise mechanisms of action and to optimize the use of these compounds in clinical settings.

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