



Figure 1. Marketed drugs that currently contain a cyclopropyl ring.

Technology Summary

Cyclopropane is a molecule that plays a key structural role in many natural products, preclinical, clinical, and commercial drugs. However, the current method of producing cyclopropane involves a highly energetic, reactive, and explosive reagent which creates numerous safety issues. Due to the danger of creating cyclopropyl rings many safety precautions must be taken making the process of creating cyclopropyl rings inconvenient. Researchers at Penn State have addressed this issue by creating a novel method of forming cyclopropane using commercially available chemicals. Benefits of said process include:

- Utilizes commercially available chemicals
- Much safer and more efficient
- Resulting compounds have a longer shelf-life
- Can be applied to a wide range of compounds For more on this novel method, read the article in Science, <https://www.science.org/doi/full/10.1126/science.adg3209>.

Application & Market Utility

This technology offers a practical and broadly application strategy for the synthesis of cyclopropanes, opening new possibilities for drug development and natural product synthesis. Cyclopropanes are key features in many drugs approved by the FDA in use to treat COVID-19, asthma, hepatitis C, HIV/AIDS, and more. This method has potential to revolutionize how alkenes are cyclopropanated in the future.

Next Steps

Further research and development involve the effort of researchers to scale up the method so that the technology may be industrially viable.

TECHNOLOGY READINESS LEVEL

3

Seeking

Investment | Licensing | Research

Keywords

- Synthesis
- Biomedicine
- Cyclopropane

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