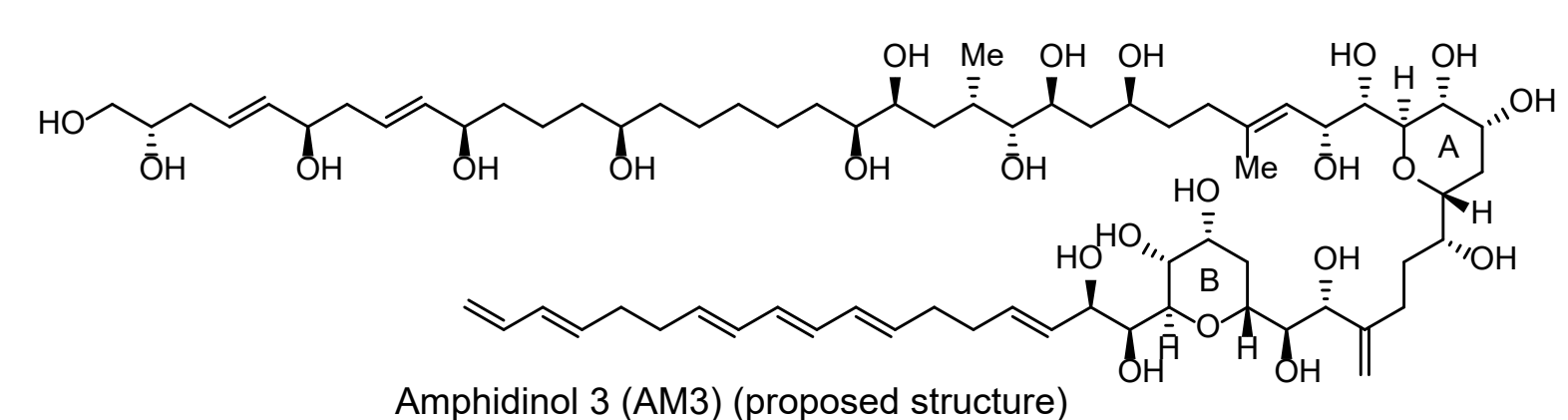
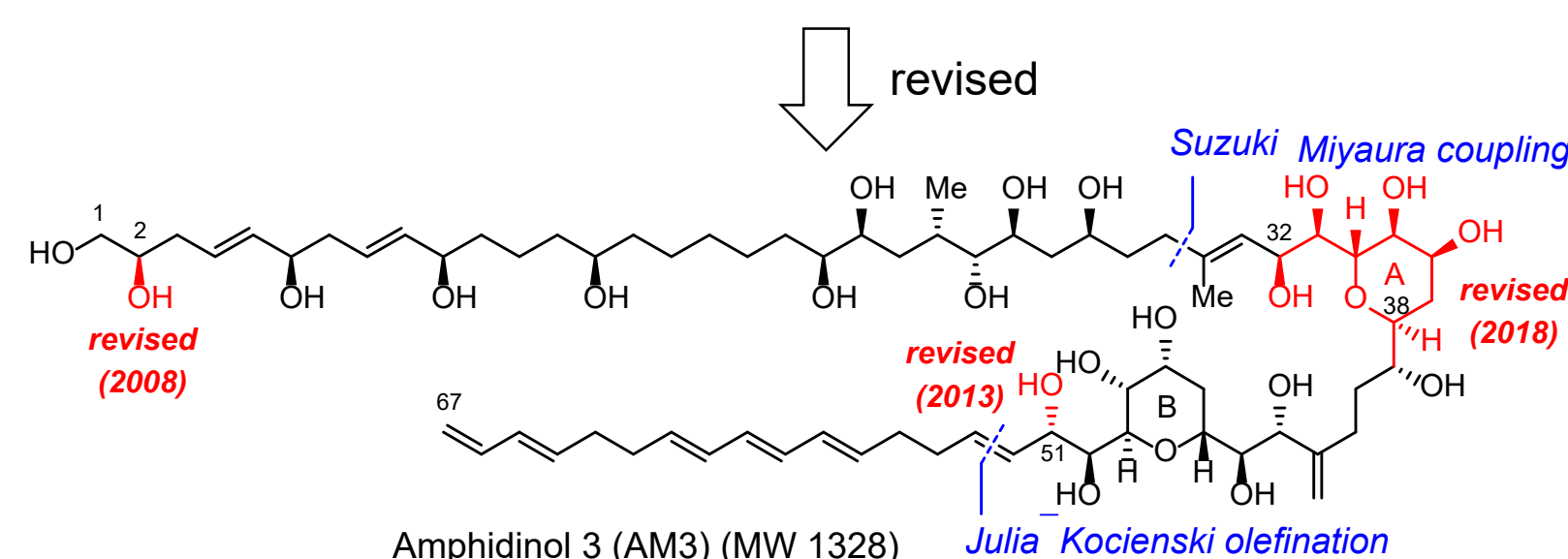


## First Total Synthesis of Amphidinol 3



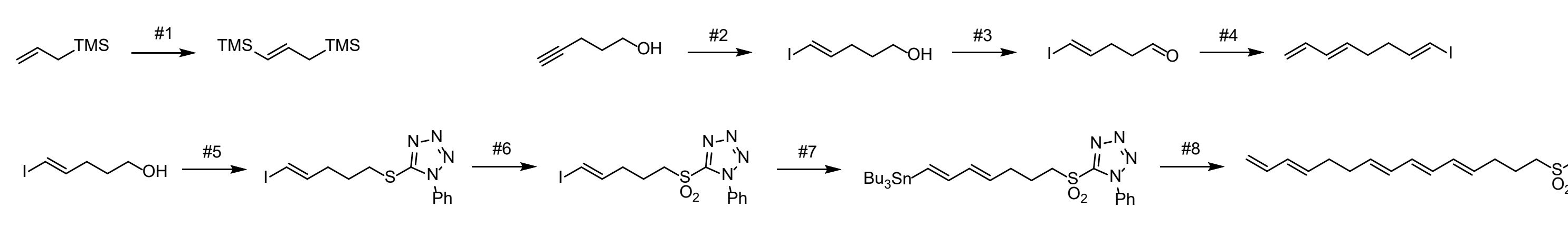
M. Murata, S. Matsuoka, N. Matsumori, G. K. Paul, K. Tachibana, *J. Am. Chem. Soc.* **1999**, *121*, 870.



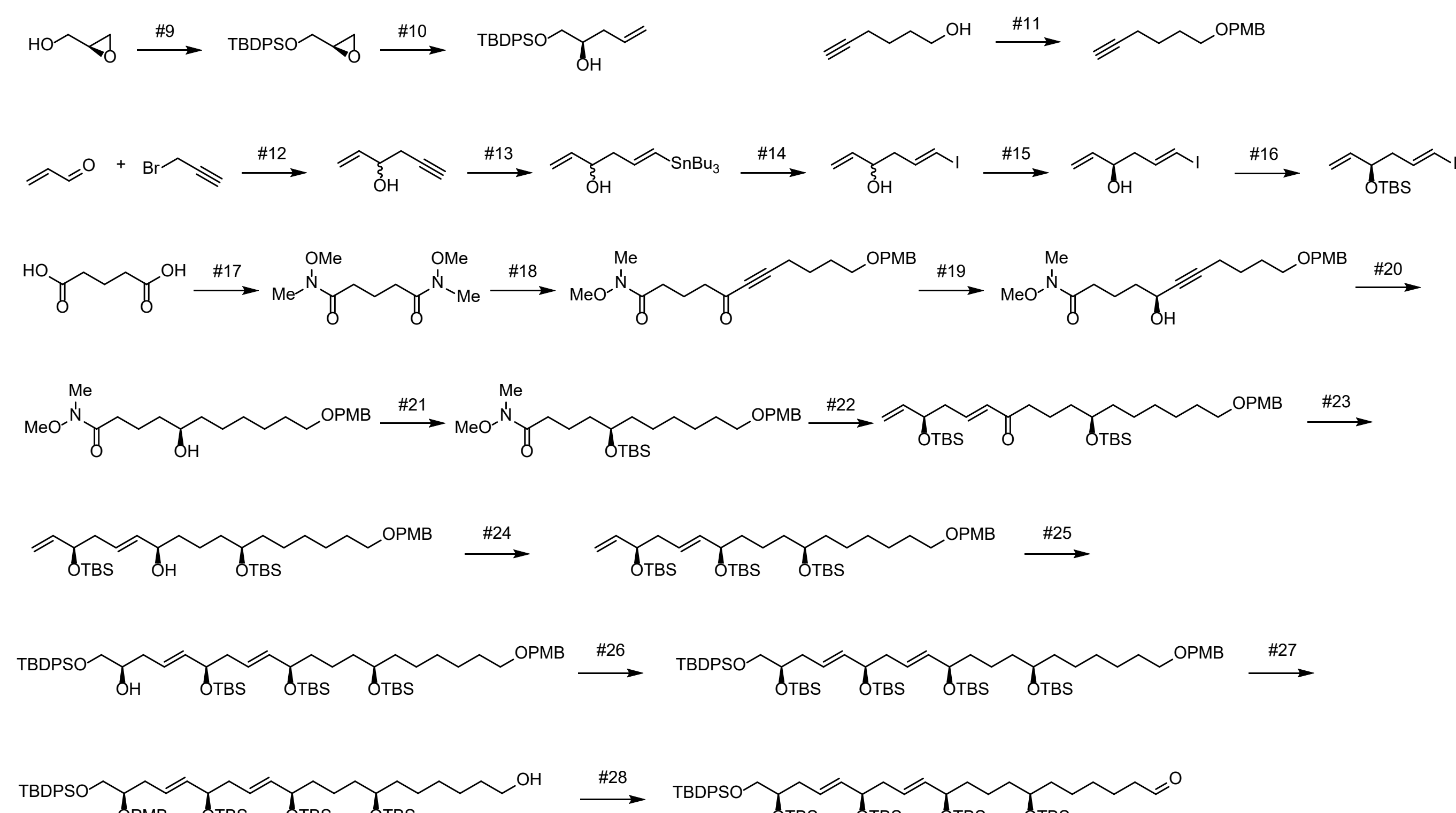
- Proposed structure of amphidinol 3 (AM3) revised based on the chemical synthesis of partial structure in combination with degradation of the natural product.
- The first total synthesis of AM3 was achieved via a highly convergent three-component coupling by Suzuki–Miyaura coupling and Julia–Kocienski olefination (the longest linear sequence: 40 steps, total steps: 112 steps).
- The spectral data and antifungal activity for the synthetic specimen are in accord with those for the natural product, thus, the complete structural confirmation of AM3 has been achieved after more than twenty years since its first discovery.

- 1) T. Oishi, M. Kanemoto, R. Swasono, N. Matsumori, M. Murata, *Org. Lett.* **2008**, *10*, 5203.
- 2) M. Kanemoto, M. Murata, T. Oishi, *J. Org. Chem.* **2009**, *74*, 8810.
- 3) Y. Manabe, M. Ebine, N. Matsumori, M. Murata, T. Oishi, *J. Nat. Prod.* **2012**, *75*, 2003.
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- 9) Y. Wakamiya, M. Ebine, M. Murayama, H. Omizu, N. Matsumori, M. Murata, T. Oishi, *Angew. Chem. Int. Ed.* **2018**, *57*, 6060.
- 10) Y. Wakamiya, M. Ebine, N. Matsumori, T. Oishi, *J. Am. Chem. Soc.* **2020**, *142*, 3472.

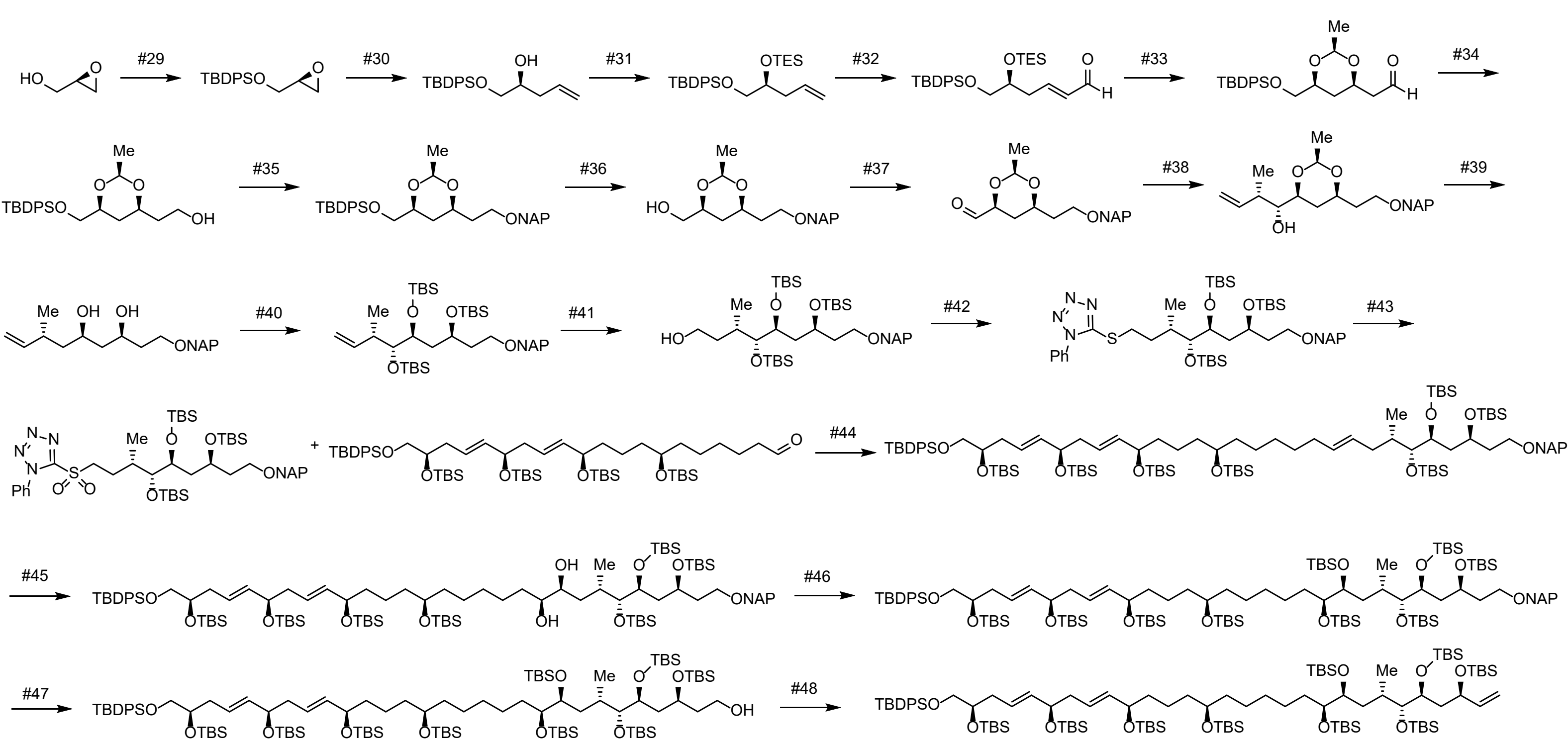
## Synthesis of the C53–C67 Section



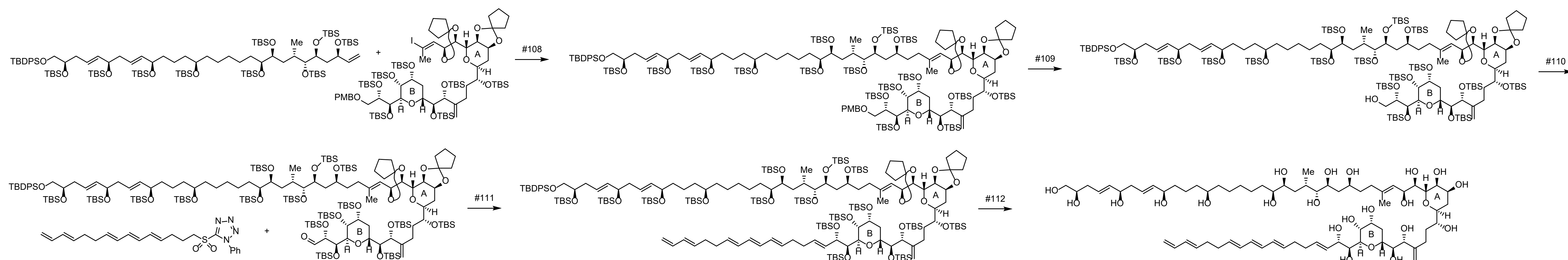
## Synthesis of the C1–C19 Section



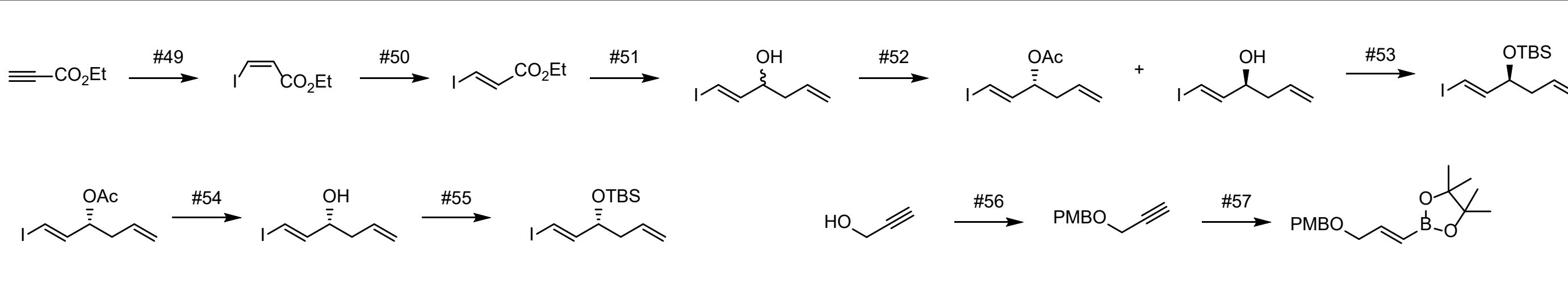
## Synthesis of the C1–C29 Section



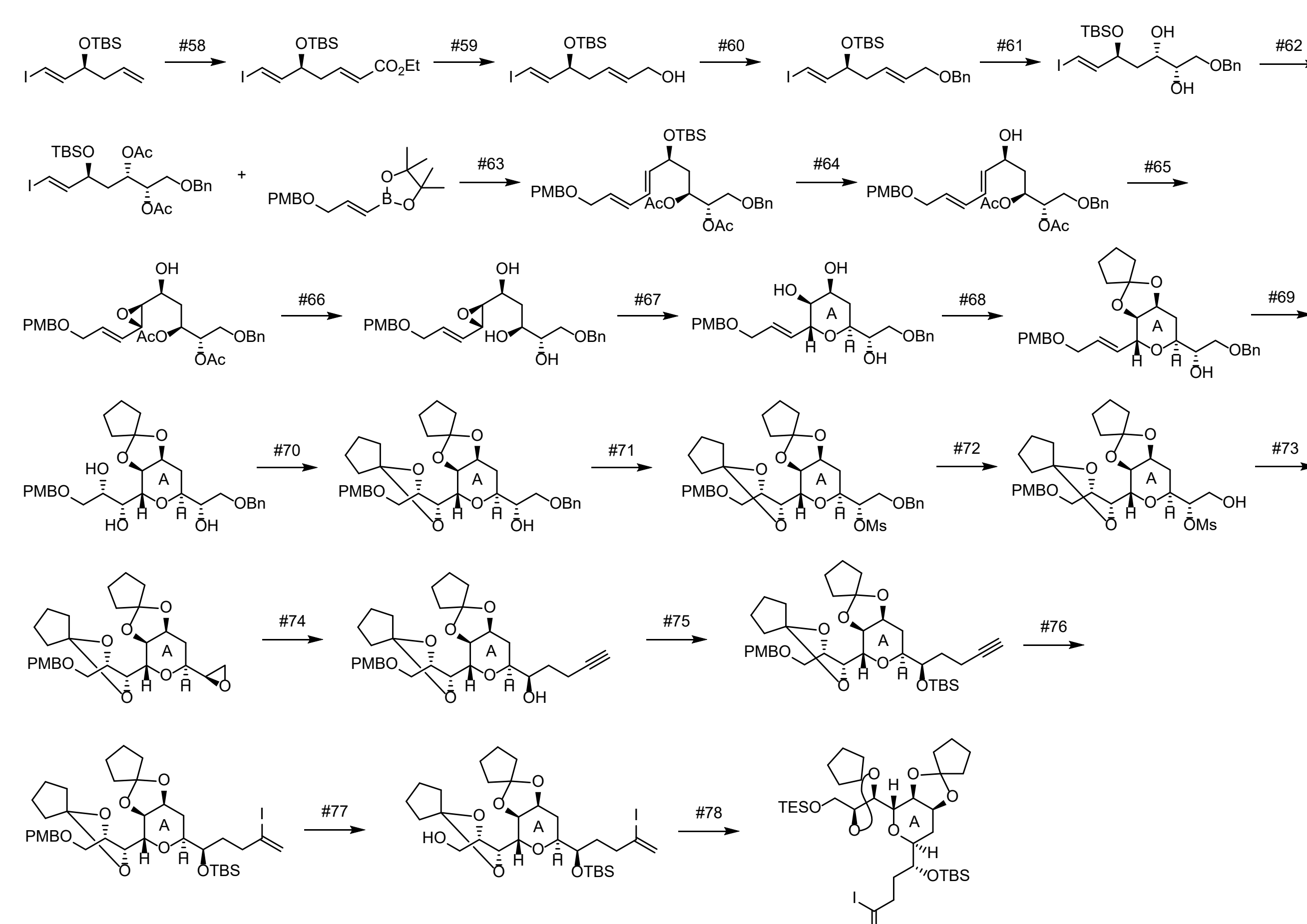
## Total Synthesis of AM3



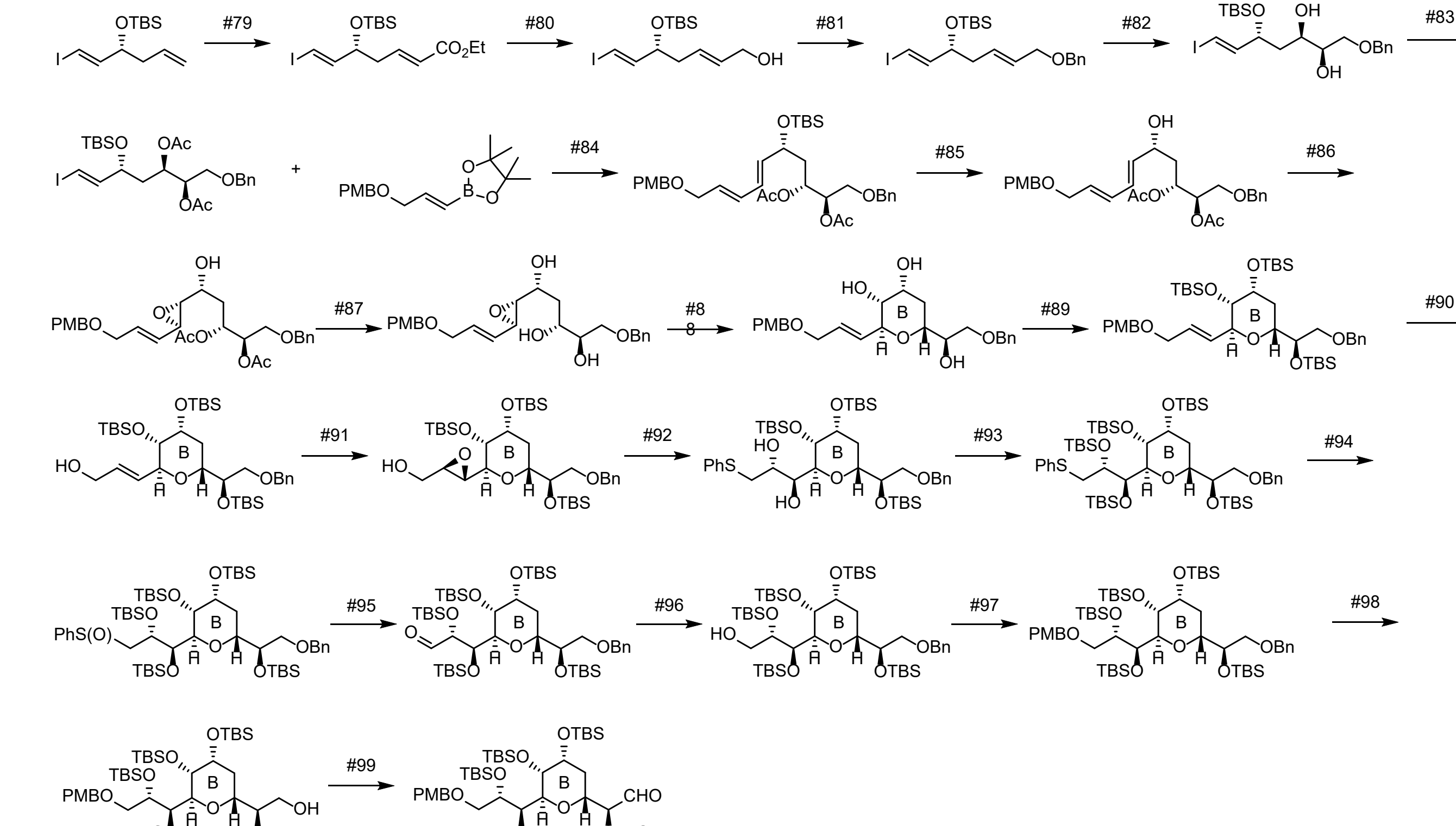
## Synthesis of the Building Blocks



## Synthesis of the C31–C42 Section



## Synthesis of the C43–C52 Section



## Synthesis of the C30–C52 Section

