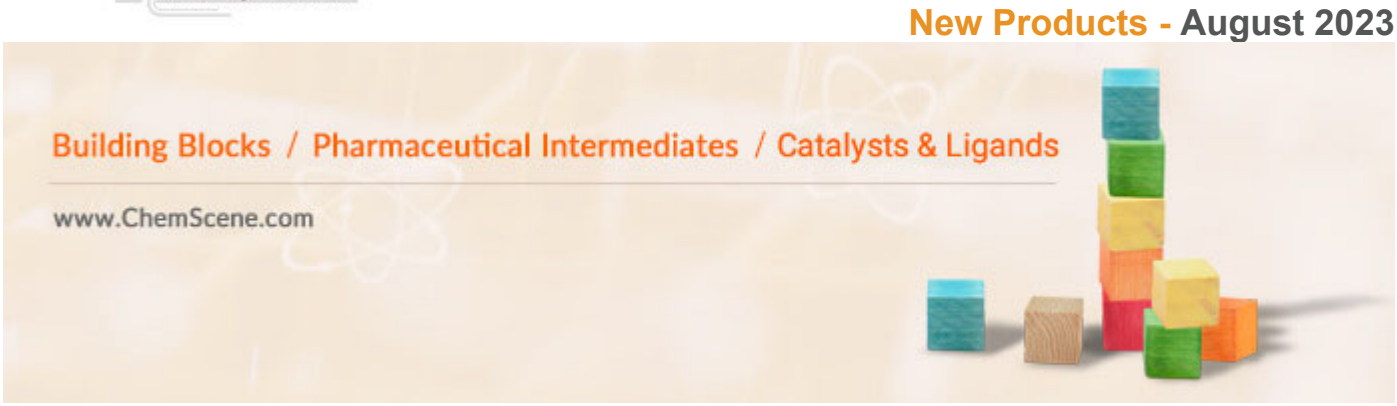
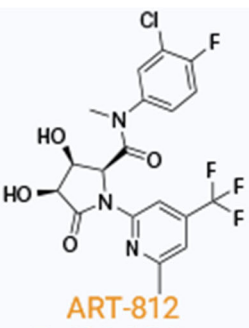
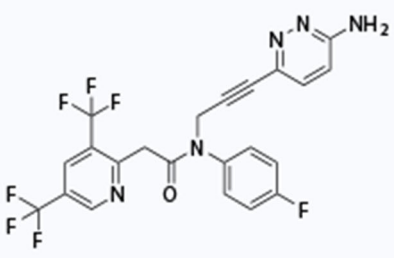
ChemScene
Chemical Reagents For Life Science

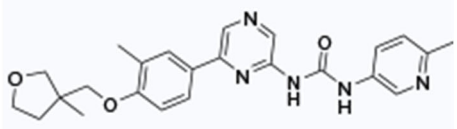
New Products - August 2023

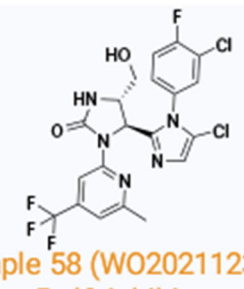


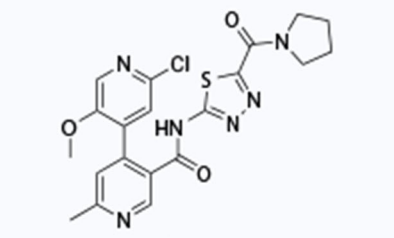
DNA polymerase theta (Polθ) is a unique, large (290 kDa) multifunctional A-family DNA polymerase that is required for DSB repair through the MMEJ pathway[1]. Polθ plays a role in error-prone DNA repair pathways, including double-strand break repair and interstrand crosslink repair. The expression of Polθ is largely absent in normal cells but upregulated in breast, lung, and ovarian cancers. Inhibitors targeting Polθ have been developed to disrupt its enzymatic activity and impair DNA repair. These inhibitors have shown promise in increasing the sensitivity of cancer cells to DNA-damaging agents, improving treatment outcomes. Combining Polθ inhibitors with other DNA repair inhibitors or checkpoint inhibitors has also demonstrated synergistic effects. The study of Polθ as a therapeutic target and the development of its inhibitors represent a promising avenue for enhancing cancer treatment. To date, three Polθ inhibitors have entered into clinical trials[2-10].

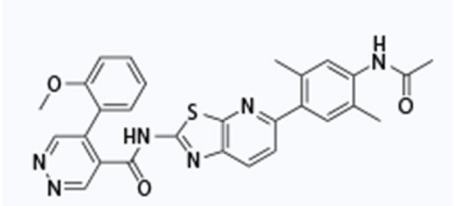

ART-812
Polθ inhibitor


RP-6685
Polθ inhibitor


Example90 (WO2020030925A1)
Polθ inhibitor

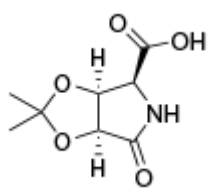

Example 58 (WO2021123785A1)
Polθ inhibitor


Example 124 (WO2023067515A1)
Polθ inhibitor


Example 141 (WO2023134708A1)
Polθ inhibitor

A series of building blocks will be used as molecular fragments
in the design of Polθ inhibitors.

[1] Journal of Medicinal Chemistry (**2022**), 65, 19, 13198-13215.
[2] Journal of Medicinal Chemistry (**2022**), 65, 20, 13879-13891.
[3] Journal of Medicinal Chemistry (**2023**), 66, 10, 6498-6522.
[4] Molecular Cell (**2022**), 82, 4218-4231.
[5] Nature Communications (**2021**), 12, 3636.
[6] WO2020030925A1.
[7] WO2020243459A1.
[8] WO2021123785A1.
[9] WO2023067515A1.
[10] WO2023134708A1.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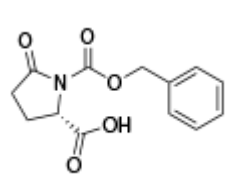
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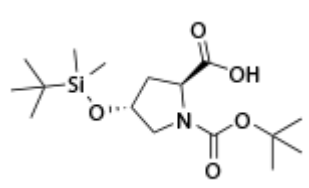
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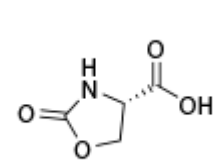
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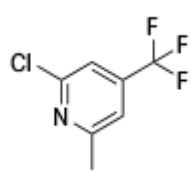
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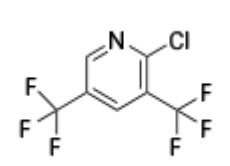
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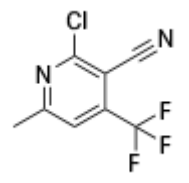
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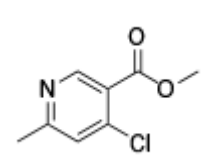
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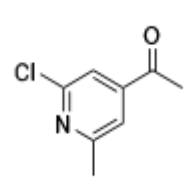
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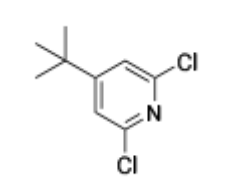
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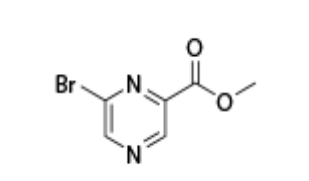
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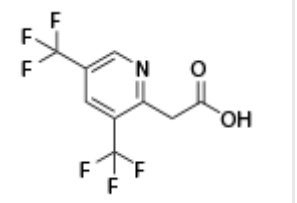
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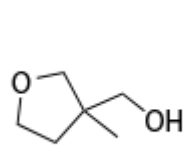
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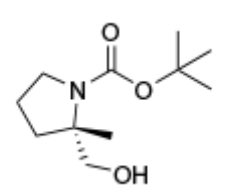
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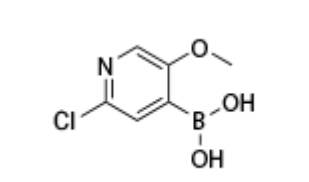
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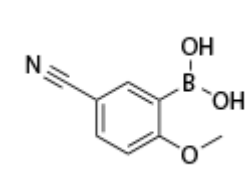
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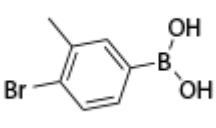
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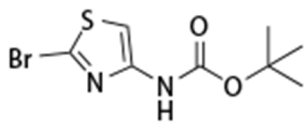
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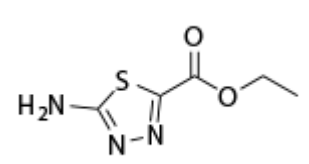
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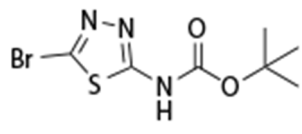
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