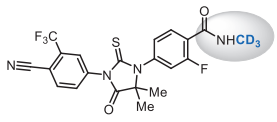
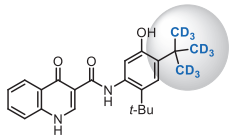
Deuterium Switch

Introduction

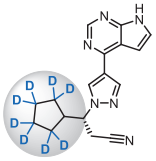
Since the first FDA approval of a deuterated drug in 2017, deuterated compounds have gained remarkable popularity in drug design. Owing to the isotope effect, deuterium slows chemical reactions – the basis of the 'deuterium switch' strategy. Selective deuteration has been used mainly to slow metabolic transformations (e.g., demethylation) in metabolic soft spots and suppress racemization of chiral centers. At least seven deuterated drugs have now received regulatory approval, with dozens more in clinical trials. To meet this growing demand, *Enamine* continues to expand its stock collection of deuterated building blocks, which doubled over the past 3 years.



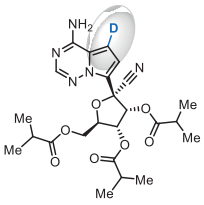
Deutenzalutamide (**HC-1119**)
China approved 2025 for prostate cancer
Hinova



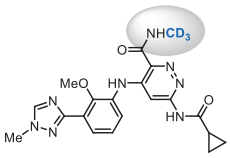
Deutivacaftor (**VX-561**)
FDA approved 2024 for cystic fibrosis
Vertex



Deuruxolitinib (**CTP-543**)
FDA approved 2024 for alopecia areata
Sun Pharma/Concert

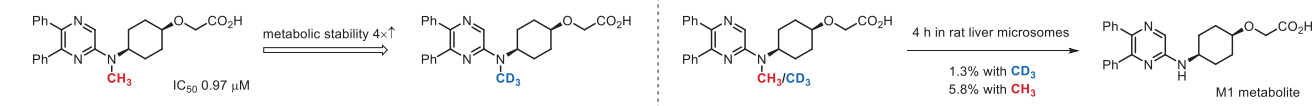


Mindeudesivir (**VV-116**)
China conditionally approved 2023 for COVID-19
Shanghai Junshi



Deucravacitinib (**BMS-986165**)
FDA approved 2022 for psoriasis
Bristol Myers Squibb

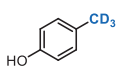
Case study



optimized prostacyclin receptor agonists

ACS Med. Chem. Lett. **2026**, *17*, 1826

We offer: over 100 deuterium-containing building blocks on gram scale.



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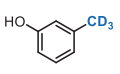

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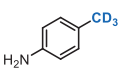

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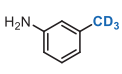

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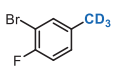

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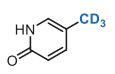

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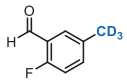

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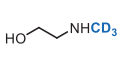

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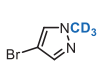

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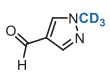

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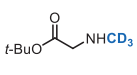

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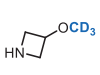

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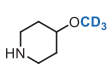

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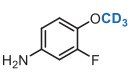

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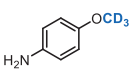

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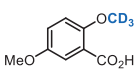

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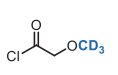

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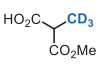

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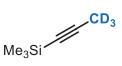

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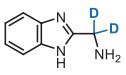

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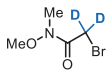

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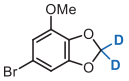

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References

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