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**Title:** Enveloping algebras for Hom-Lie algebras in Hom-Yetter–Drinfeld categories

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In this paper, we first introduce the definition of braided Hom-Lie algebras and present some construction methods. Second, we study the central invariant theory for braided Hom-Lie algebras and prove that the enveloping algebras of braided Hom-Lie algebras are $H$-cocommutative Hom-Hopf algebras. Finally, we study Radford's Hom-biproduct, and therefore obtain the Schur–Weyl duality in the setting of Hom-Hopf algebras.

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