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Practical asymmetric synthesis of a chronic hepatitis C virus nucleoside cyclic prodrug

Chronic hepatitis C virus (HCV) is a liver disease that has infected an estimated 130 to 150 million people worldwide as of 2016 and killed an estimated 500,000 people around the world annually. In spite of several medicine therapies for the treatment of HCV being available, treatment failure and resistance still remain a clinical challenge. For these reasons, the search for effective antiviral agents to combat HCV is an ongoing endeavor within the global medical/pharmaceutical community. As part of an ongoing drug discovery program in our laboratories, the title compound has been identified as one such selective and potent inhibitor of HCV NS5B nucleoside polymerase. This nucleoside cyclic prodrug is a complex, densely functionalized small molecule, which represents numerous challenges for chemical synthesis. Herein, we report a new asymmetric, practical synthetic route, which features several remarkably diastereoselective and high yielding transformations for the synthesis of the target starting from readily available starting materials.

Biography

Yong-Li Zhong has completed his PhD in 1998 from the Chinese University of Hong Kong and postdoctoral studies from The Scripps Research Institute in San Diego. He joined Process Research & Development, Merck & Company Inc., in 2001 and currently holds the position of principal scientist at Merck. He has published more than 85 papers in reputed journals and has 20 patents.

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