

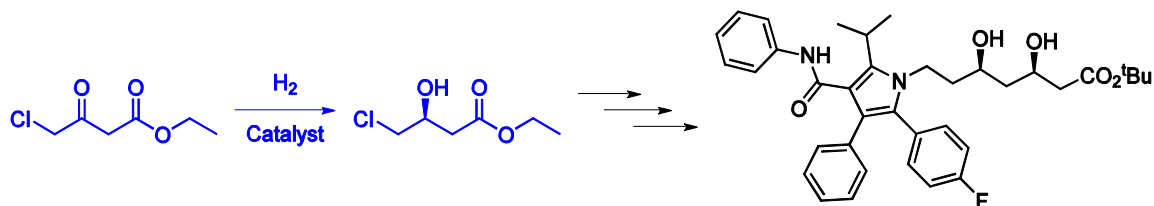


Selective and Efficient Pharma Processes

Processes for the derivation of high value pharma products must be robust and efficient. Robust processes are defined by ease of implementation and scalability. A key aspect of efficiency is enantioselectivity; high selectivity for single enantiomer products improves overall yields and reduces both process time and waste. Kanata Chemical Technologies employs state-of-the-art, catalysis-based technologies to derive exceptionally robust and selective processes for a range of pharma products. The delivered solutions (examples shown below) illustrate truly efficient chemistry in practice.

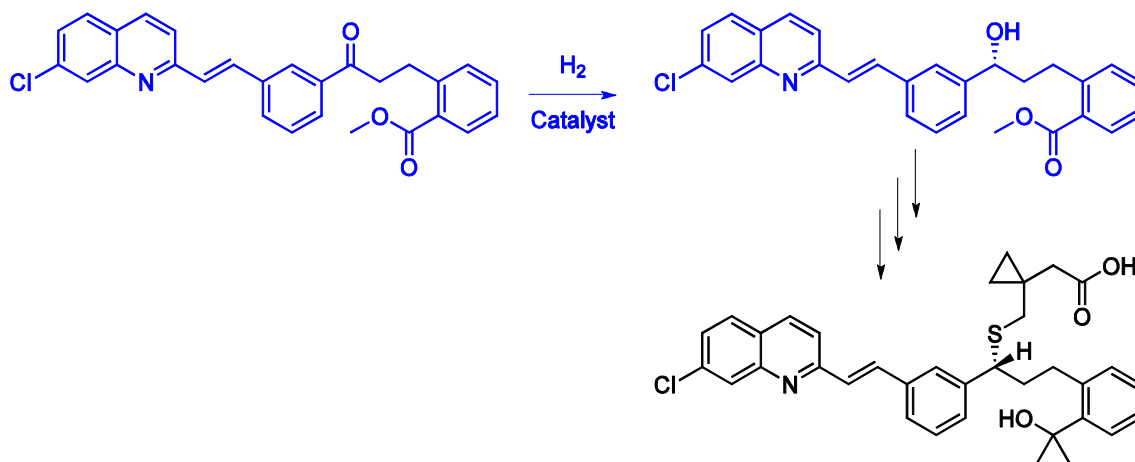
Production of Atorvastatin

Atorvastatin is the top selling pharmaceutical worldwide. A key component of this molecule is the chiral side chain and a critical step in its preparation is the asymmetric reduction of ethyl 4-chloro-3-oxobutanoate to (S)-ethyl 4-chloro-3-hydroxybutanoate (shown below). Using our proprietary hydrogenation technology, Kanata Chemical Technologies can produce the desired isomer in > 99 % yield and with > 98% for the desired isomer.



Production of Montelukast

Similar to Atorvastatin, Montelukast is a block-buster pharmaceutical produced as a single enantiomer product. Once again, the critical process step of deriving the chiral alcohol from the ketone precursor (shown below) determines the utility of the process. Using traditional, stoichiometric methods, an inordinately high reagent-to-substrate ratio is required for the reaction. Using our proprietary hydrogenation technology, Kanata Chemical Technologies can produce the desired alcohol with a stellar catalyst-to-substrate loading surpassing even the established bio-catalytic processes.



For additional information on our Pharma processes, please contact us at chemistry@kctchem.com.