Unique and diverse natural product structures, possessing high target affinity and specificity, have been the richest source of innovation for organic chemists. Natural products are also novel modulators of biomolecular functions and are essential to the progress of biomedical sciences. With the introduction of novel, innovative concepts and strategies for synthetic efficiency, natural products synthesis is well poised to address the challenges and the complexities faced by natural product chemists. In the above context, we have identified some of structurally complex biologically active alkaloids for synthesis from optically active azabicyclo[2.2.1]heptanone, obtained by asymmetric desymmetrization and 3,3-sigmatropic shifts of γ-hydroxy-α,β-unsaturated lactams, respectively. Azabicyclo[2.2.1]heptanone scaffold was developed considering its strain and ease of selective bond dissociation for the construction of the core structure of these alkaloids whereas γ-hydroxy-α,β-unsaturated lactams was developed for generating C-3 all carbon quaternary stereochemistry.

References