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Enantioselective, short and efficient approaches to the synthesis of drugs and biologically active compounds

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Asymmetric synthesis of bioactive molecules is at the forefront of synthetic organic chemistry due to its varied applications in drugs and pharmaceutical industries. Among an array of naturally occurring and biologically important compounds, the functionalized amino acids, 2-alkyl substituted tetrahydroquinolines, 2,5-disubstituted-3-oxygenated THF motifs and α-phenyl-β^2-amino acid core unit are of great importance. They possess interesting pharmacological properties such as antiepileptic, antimalarial, potent olfactory activities and significant cytotoxicity against a variety of tumour cell lines including L1210 murine leukaemia and KB human epidermoid carcinoma cells. As part of our research on the asymmetric syntheses of drugs and bioactive compounds, we have recently synthesized medicinally important antiepileptic drug (*R*)-lacosamide, antimalarial agent (+)-angustureine, (+)-petromyroxol with potent olfactory activities, (+)-serinolamide A having affinity and selectivity for the CB1 receptor, and (*S*)-nakinadine B with signicant cytotoxicity against a variety of tumour cell lines including L1210 murine leukaemia and KB human epidermoid carcinoma cells.[1]

Biography

Satyendra Kumar Pandey obtained his PhD degree in 2008 from the National Chemical Laboratory, Pune, India under the supervision of Dr. Pradeep Kumar. After working as a Post-doc student at the Purdue University, IN, USA, with Prof. Arun K Ghosh, he moved to Aurigene Discovery Tech. Ltd. (Dr. Reddy's Lab) India, and joined as a Jr. Scientist in 2010. In 2012, he was appointed Assistant Professor in School of Chemistry and Biochemistry, Thapar University, India. He was the recipient of Eli Lilly Asia outstanding thesis award in 2009, and DST Young Scientist award in 2012. His broad research interests include development of new methodologies, synthesis of biologically active natural products, and medicinal chemistry.

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