

Preface

This thesis is the upshot of my Ph.D. study at Zydus Research Centre and the department of Chemistry, The Maharaja Sayajirao University of Baroda, Vadodara, India. This study has been also a part of my job as associate research scientist at Zydus Research Centre, Ahmedabad, India to which I have been associated since October 2007.

The thesis consists of four major sections which cover the development of GPR-119 agonists for the treatment of type 2 diabetes mellitus. A part of the thesis has been published in an international journal.

The '**Introduction**' section deals with the general information about diabetes and obesity, wherein detailed pathophysiology of the disease and the current treatment options were discussed. This was followed by an introduction to GPR 119 as target for the treatment of diabetes (Diabetes and Obesity).

In the section titled '**Designing GPR 119 agonists**', the strategies and rationale for designing novel GPR 119 agonists are discussed.

The '**Results & Discussion**' section describes the synthesis, biological activities and molecular modelling studies of the novel compounds.

The '**Experimental**' is the section where the detailed procedures for the synthesis of the compounds as well as the characterization data are presented. The details of biological experiments were also described in this section.

Copy of **spectra** of most of the compounds and copy of publication are incorporated at the end of the thesis.

It was a very learning and joyful experience while working for this thesis. Reviewing literature provided a platform to understand the biological role of GPR-119 in this complex disease was very interesting and stimulative. Molecular modelling experiments provided good learning and were instrumental in understanding the ligand receptor interactions. Presenting the work in form of publication and thesis was also a good learning experience. Although this work is a part of my job as a medicinal chemist, it gives me a great level of satisfaction, as findings from this research work may be useful to obtain a solution for unmet need for the treatment of

diabetes and obesity. Being a medicinal chemist, my goal is to find out novel therapies in view of alleviating human suffering.

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