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Recent Progress in the Structural Modification and Pharmacological Activities of Ligustrazine Derivatives

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Abstract: Ligustrazine is a main active fraction of the traditional medicine known as *Ligusticum chuanxiong hort*, which has been used as clinical medication for cerebral thrombosis, coronary heart disease and stenocardia recently. The rapid metabolism and short half-life of ligustrazine seriously limits its application in clinical practice. Therefore, derivatives of ligustrazine are designed and synthesized in our and other labs, including piperazine, cinnamic acid, styrene, acylguanidine, amides, curcumin and triterpenes derivatives of ligustrazine. Most of these compounds present better pharmacodynamics activities and more favorable pharmacokinetic properties compared to the parent compound. Besides, some new biological activities of these compounds are discovered. Hence, this review continues the previous review of our group as well as aims to highlight recent prominent advances in this field in the past ten years.

Keywords: Ligustrazine derivatives; Pharmacological activities; Drug design; Antioxidation; Anticardiovascular disease; Anticancer; Neuroprotective; Antibacterial; Anti-inflammatory

1. Introduction

Natural products (NPs) are chemical compounds or substances produced by living organisms which are found in nature. Natural products and their intricate molecular frameworks enlighten medicinal chemists a range of uncharted chemo-types for the

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