

## Naturally Occurring Iridoids During the Period 1990-1993

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**Summary:** New iridoids, secoiridoids, bis-iridoids and other miscellaneous iridoids isolated during the period 1990-1993, together with their botanical sources are listed. Furthermore, the re-isolated iridoids during the period covered by the present review are also given.

### Introduction

Iridoids are perhaps one of the most abundant organic classes of secondary metabolites. These compounds are found in a large number of plant families usually as glucosides [1-3]. Iridoids glucosides display an interesting spectrum of biological activity [4]. Although most iridoids have a bicyclic cyclopentano(c)-dihydropyran skeleton they are also known to occur with an additional five membered lactone ring. Typically, iridoids have nine or ten carbon atoms in a bicyclic system with a pyran ring which may carry a carboxylic moiety. The bicyclic skeleton is the most common from in iridoids despite the occurrence of what is called secoiridoids, where the five membered ring is broken. Iridoid glucosides are commonly encountered in Scrophulariaceae and related families and their presence being considered as a valuable systematic character [5].

The common acids which esterify the iridoid and seco-iridoid alcohols are benzoic and cinnamic acid derivatives (Fig. 1). Abbreviations in parenthesis for these structures will be employed in the list of formulas of isolated iridoids encountered in the present review. Cinnamoyl group and its derivatives are in trans configuration(E) unless otherwise stated.

A comprehensive review by El-Najar and Beal [1] has been accomplished on the chemical aspects of natural iridoids until the end of 1980. This review contains 258 iridoids. A completion since 1980 through December, 1989 by Bross and Stermitz appeared in the literature in two parts [2,3] with more than 530 iridoids. Due to the increasing number of newly isolated iridoids during the last four years we have adopted the present

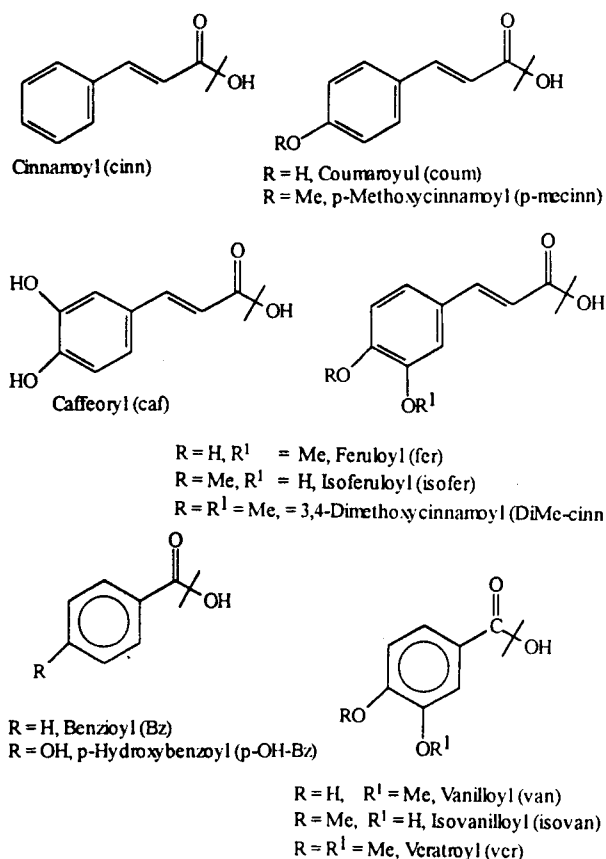


Fig. 1 Common acid moieties encountered in natural iridoids.

review on this important class of compounds from plants belonging to various families.

### New iridoid glycosides

During the period covered by this review a number of natural iridoids possessing novel carbon frameworks have been isolated from various