

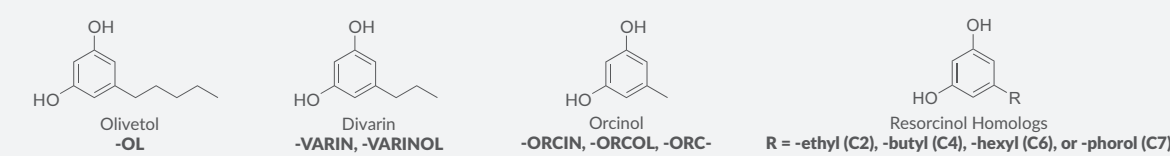
# PHYTOCANNABINOID GUIDE

## BIOSYNTHESIS, NAMING, AND NUMBERING

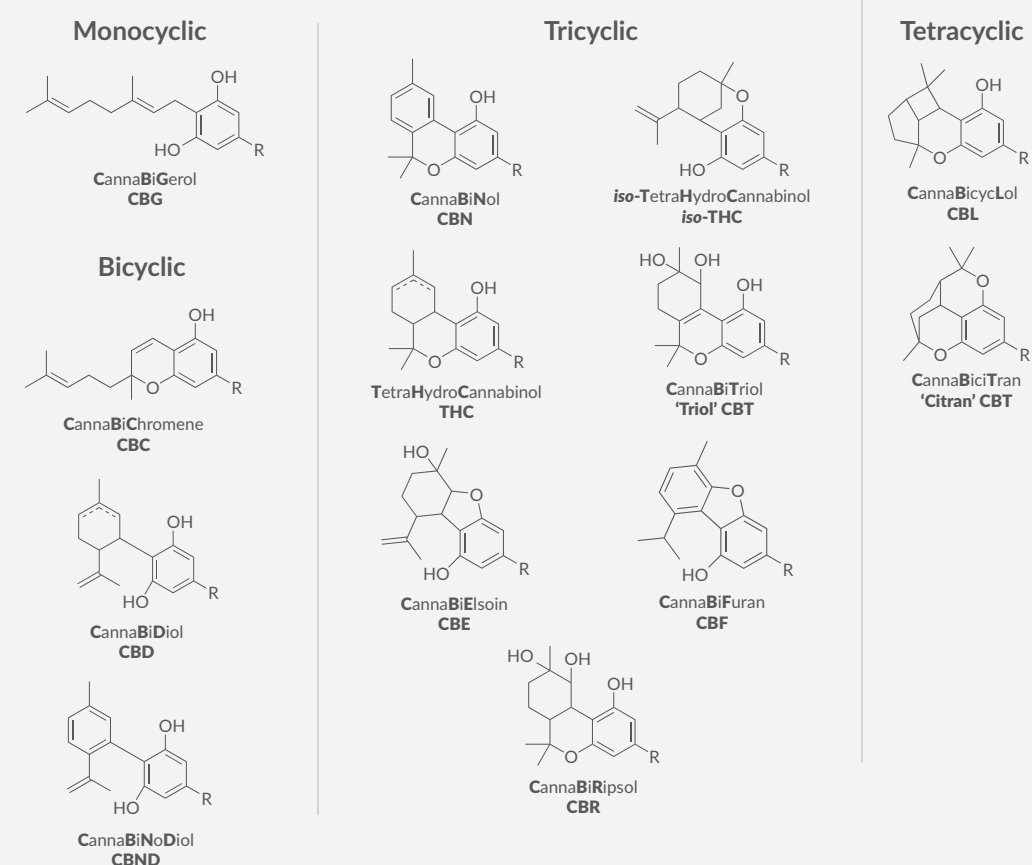
### NAMING CONVENTIONS

When naming phytocannabinoids, the prefix "cannabi" always appears in the main scaffold which drives the name and acronym of each compound.<sup>1</sup> The resorcinol root will designate the original C5 series and its C3 and C1 homologs. Listed here are the main scaffolds observed in phytocannabinoids. Because of the prevalence of the olivetolic root, the standard names will all contain the suffix -OL or -NOL, with a few exceptions. When describing the C3 and C1 homologs, the scaffold name is amended by dropping the -OL and replacing the suffix with -VARIN/VARINOL (C3) or -ORCIN/ORCOL (C1). The -ethyl (C2), -butyl (C4), -hexyl (C6), and -phorol (C7) homologs have also been positively identified in *Cannabis*. Another convention exists where the suffix is placed within the scaffold name (-ORC- as in cannabichromene → cannabiorchomene).

#### Resorcinol Root Name



#### Main Scaffold Motifs and Names

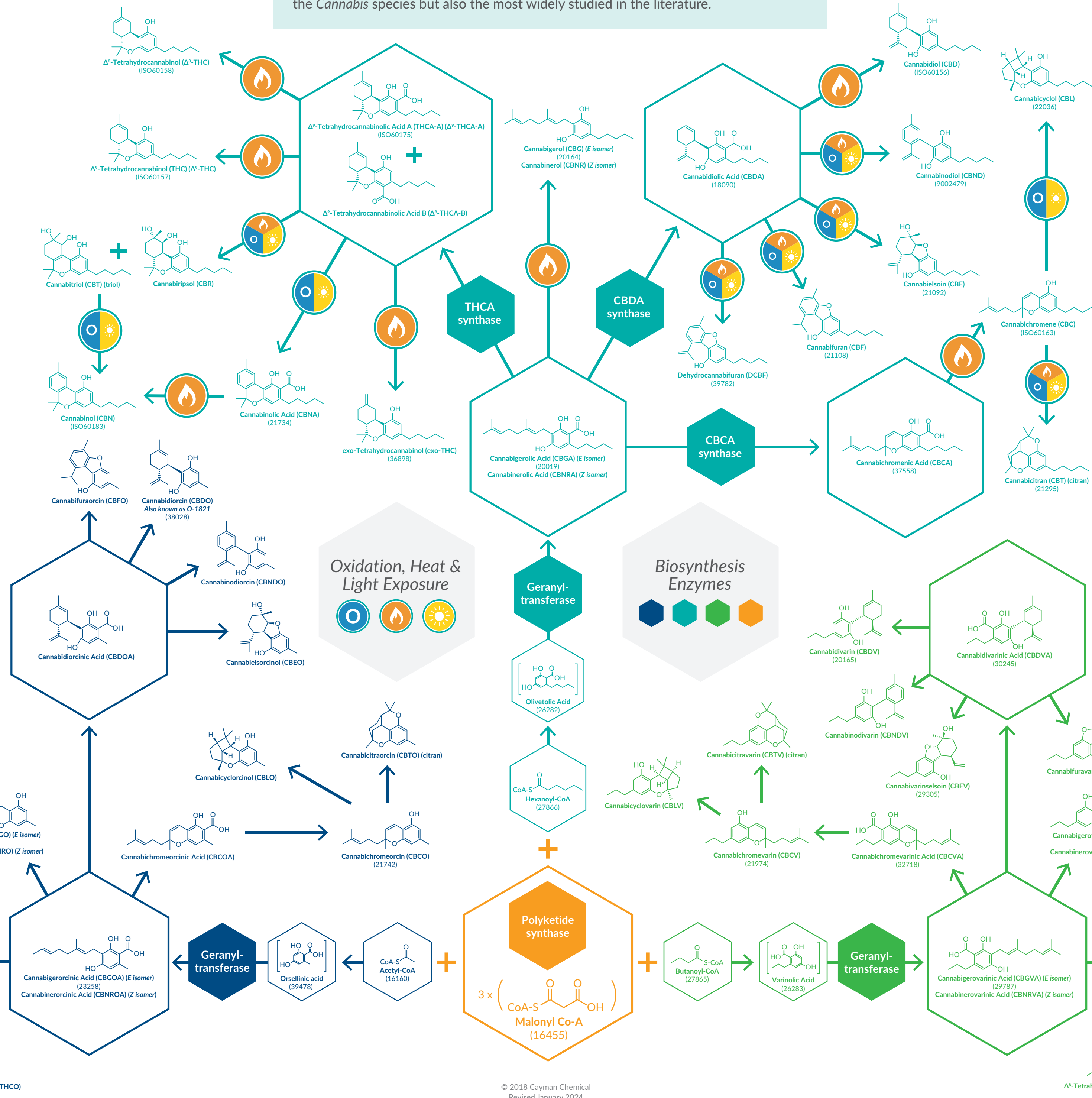


When added to the end of the acronym, "M" = methyl ester (e.g., CBDM = cannabidiol methyl ester) and "A" = carboxylated olivetolic acid (e.g., THCA = tetrahydrocannabinolic acid)

1. Brenneisen, R. Chemistry and analysis of phytocannabinoids and other Cannabis constituents. *Marijuana and the Cannabinoids*. ElSohly, M.A., editor, Humana Press (2007).

### CLASSIC OLIVETOL SERIES

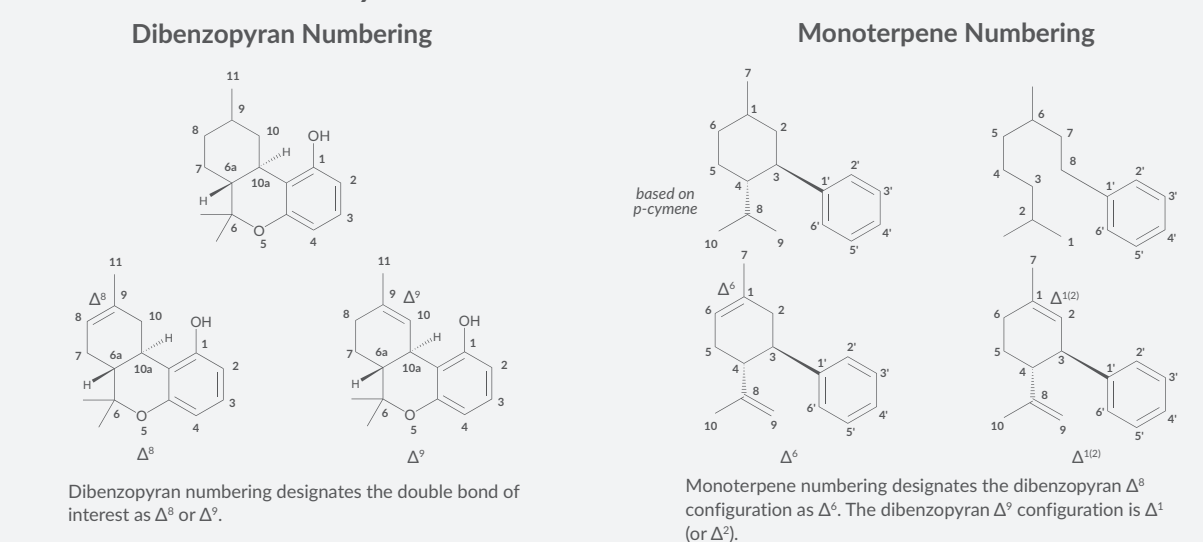
Olivetolic phytocannabinoids are considered classic, as these are the compounds that are ubiquitous to all varieties of *Cannabis*. This series is not only the most dominant in the *Cannabis* species but also the most widely studied in the literature.



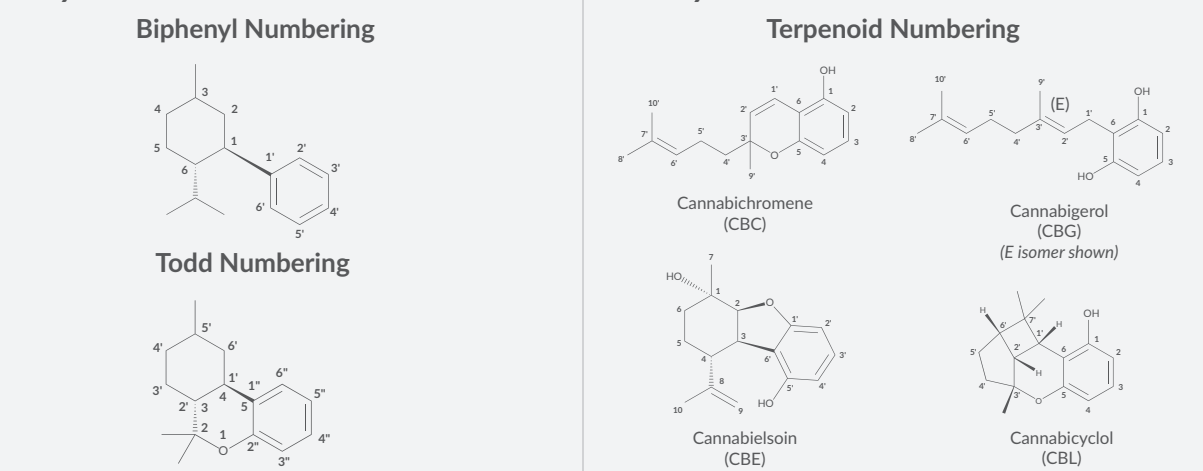
### NUMBERING CONVENTIONS

The two most common conventions for numbering THC are the dibenzopyran and monoterpene systems.<sup>2,3</sup> The monoterpene convention is more commonly used for CBD structures. The biphenyl and Lord Alexander Todd numbering systems are older and less common.<sup>2,3</sup> A simple terpenoid numbering system is used for CBC, CBG, CBE, and CBL structures.<sup>3,4</sup>

#### Most Common Systems



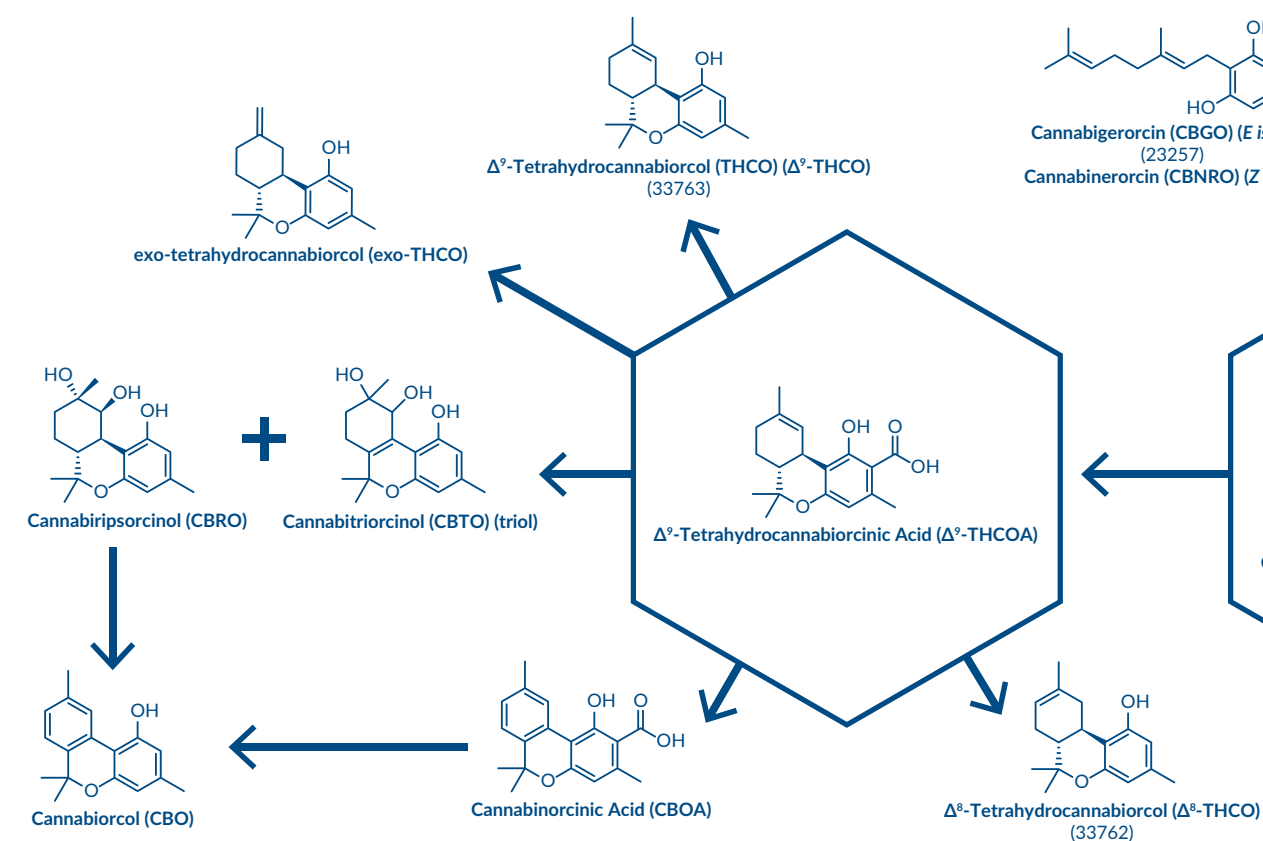
#### Older/Less Common Systems



2. Mechoulam, R. and Gaoni, Y. *Fortschr. Chem. Org. Naturst.* 25, 175-213 (1967).  
3. ElSohly, M.A. and Slade, D. *Life Sci.* 78(5), 539-548 (2005).  
4. Hanuš, L.O., Meyer, S.M., Muñoz, E., et al. *Not. Prot. Rep.* 33(12), 1357-1392 (2016).

### ORCINOL SERIES

Orcinolic phytocannabinoids have been identified in Nepalese and Brazilian samples but are also found as major compounds in non-*Cannabis* species such as *Rhododendron*.



### VARINOL SERIES

Varinolic phytocannabinoids were once rare but are now targets of selective breeding. They have also been exhibited in higher abundance in *C. indica* over *C. sativa*.

