

Book review

Biochemical Targets of Plant Bioactive Compounds. A Pharmacological Reference Guide to Sites of Action and Biological Effects

Gideon Polya, 847 pages, Taylor and Francis Publishers, ISBN 0-415-30829-1 (£199)

This reference text assigns biological activity to plant natural products into 14 broad biochemical target areas. This is an exceptional scholarly piece of work and the author has defined classes of compounds and then grouped them according to the type of biological activity observed. This highly useful text starts with an introduction into plant defensive compounds and their targets. Information on plant bioactive compounds and their producing organism has been collated from web searching which includes pubmed, biological abstracts and major reference compendia such as the *Phytochemical Dictionary* (Harborne) and the *Merck Index*. The author has also used Dr. James Duke's *Phytochemical and Ethnobotanical databases*. In this introductory section, a description of tables and the concept of structural diversity are discussed. Metabolites are classed as alkaloids, phenolics, terpenes and other plant compounds and these enormous groups are further subdivided which is a difficult task to ensure good coverage, although the author has done well in this respect.

A section on 'Biochemistry—the Chemistry of Life' precedes the 'database' of tabular material and in some cases, synthetic compounds are included, particularly where used to study a target e.g. temazepam, a benzodiazepine receptor agonist in the neurotransmitter and hormone gated ion channels table.

There are fourteen tables which list compound of interest (arranged according to class, plant family and plant part and finally the final field is target or effect inhibited. To give an example from the signal-regulated

kinase section, abietic acid, a diterpene is listed in the terpene section of this table and the source is given as widespread in the Pinaceae, with examples of *Pinus* species as source organism. The enzyme inhibited is then given, which in this case is cAMP-dependent protein kinase as one of the two targets of interaction.

The Appendix even has chemical line drawings of key parent compounds. There is an excellent bibliography and comprehensive indexing with compounds index, plant genus index, plant common name index and finally subject index which will ensure that this is an easy text to search which certainly adds to its utility. I hope that the author and publisher are engaged in production of an electronic version of this text which is really a database of plant compound bioactivities.

I also like the way in which the scientists are cited who were associated with a discovery of a compound, an enzyme or a relevant biological target, for example carboxypeptidase isolated and crystallised by John Northrop who received the Nobel Prize for Chemistry in 1946. This gives an attractive historical context to the therapeutic area.

This reference text will appeal to undergraduate and graduate students who are starting a literature search and I believe this will be a valuable first port of call. I thoroughly recommend that this be purchased for library use and believe that this excellent text will be of value to any research group involved in bioassay-guided studies on plant natural products.

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