Editorial

After having been involved for more than 40 years in natural products research, for me *Cannabis sativa* still is the most fascinating plant in any respect, which is as multifaceted as the bee's eye. No other plant is so unique and diverse, reflected for example by its millennial history as ethnobotanical plant, its complex phytochemistry with more than 500 identified constituents, its amazing polypharmacology, and its controversial reputation in the public, media, and politics, either as stigmatized dope head marijuana or as mystified panacea.

Nowadays, the term “medical cannabis” is largely rehabilitated and, besides “medical cannabinoids”, officially well accepted in the scientific community as a label of many international conferences or title of the present new journal, and more and more also by regulatory authorities in Europe and elsewhere. This paradigm change can be explained by increasing preclinical and clinical data showing the potential of cannabis as phytopharmaceutical; however, not negating the fact that this plant still is the most abused illicit drug worldwide. The hits in PubMed are a mirror of exploding cannabis and cannabinoid research in the last 25 years compared to the 25 years before 1992: “cannabis” 12,894 (4,645), “cannabis + medicine” 3,378 (281), “tetrahydrocannabinol” 5,353 (2,990), “cannabidiol” 1,564 (373), and “cannabidiol + medicine” 502 (20). Even more striking are the number of references for “endocannabinoids”, 4,429 (8), and “endocannabinoid system”, 1,785 (0), discovered in the late 1980s and early 1990s, respectively. In this context, it has to be noted that Big Pharma nowadays prefers to invest money in the search for endocannabinoid modulators and less in the development of cannabis-based medicines.

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For decades, cannabidiol (CBD) was the main cannabinoid of fiber-type cannabis shaded by tetrahydrocannabinol and not often in the focus of pharmacologists. The increasing scientific interest in CBD during the last 25 years as the most promising candidate for clinical utilization can be explained by its lack of any cognitive and psychoactive actions and its plethora of effects. Today, for many patients, CBD means hope, despite very few convincing clinical studies, whereas recreational consumers classify CBD only as lifestyle drug or food supplement. These two controversial points of views are additionally triggered by media headlines emphasizing CBD to be a unique antiepileptic drug and aggressive marketing of CBD producers and suppliers.

Whether the therapeutic use of cannabinoids in the form of pure substances or as complex cannabis-based medicines should be preferred is not always rationally debated, especially among patients (“God’s pharmacy”),

but also among physicians. Although non-cannabinoids, such as terpenoids, are predominantly still a pharmacological black box, I am convinced that both options are justified, depending on the patient and indication. However, numerous breeding experiments and clinical studies are still needed until we will have disease-specific chemovarieties available in the pharmacy. Even before, pharmaceutical sciences should evaluate and validate safe and efficient application forms regarding the complex multi-compartment pharmacokinetics of cannabinoids, which is another real challenge. We are faced with the controversial situation that high-potent cannabis strains are available but not cannabis-based medicines targeting highest bioavailability and best patient compliance, especially in case of chronic diseases and long-term use. Without any doubt, smoking joints, the most popular recreational application form and also preferred by many patients for self-treatment, is not GCP-compliant and an absolute no-go for clinical trials. Therefore, innovative cannabis-based galenics, for example based on nanotechnology, are required enabling highest systemic availability of as many as active constituents as possible.

It is evident that the gap between empirical, anecdotal, and evidence-based data is still too wide. In other words, we should be aware of the discrepancy between what self-treating patients claim and what controlled clinical trials prove, namely that cannabis and cannabinoids can be effective remedies. Probably too often, positive patient reports are discriminated as “indication lyrics”. Franjo Grotenhermen, editorial board member of this journal, defines this unsatisfactory situation that is frustrating for

both sides as “cannabis dilemma”, meaning that physicians are confronted with positive effects reported by their patients suffering from chronic or multiple diseases, experiences which evidence-based medicine cannot explain in most cases. Medical personnel, regulatory authorities, and politicians of different countries handle this dilemma differently. On the one hand, patients should not be denied an effective therapy, meaning opening or facilitating the legal access to medical cannabis and cannabinoids. On the other hand, medical cannabis must pass the strict drug testing and approval process as every other natural or synthetic drug without claiming the bonus of a thousand-of-years-old-proven component of traditional medicine. Although an enormous challenge in any respect, this should motivate scientists to intensify their research.

The new journal *Medical Cannabis and Cannabinoids* is taking into account the need for a platform open to the rapidly developing cannabis science community and covering all aspects of this particular and extremely challenging research. This should include basic, preclinical, and clinical research but also legal and regulatory topics as well as news from the industry and patient reports. I hope that this journal is able to bridge empirical and scientific knowledge, to link the endocannabinoid and phytocannabinoid research community, find a way out of the “cannabis dilemma”, and make a significant contribution to the urgently needed remedicalization of cannabis and cannabinoids. Science is challenged, as many patients are waiting for a cannabis-based medicine and are running out of time.

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