Testimony 3/9/23
Senate Bill #516

Good afternoon committee members. My name is Barry Pritchard.
I would like to thank the committee for taking my testimony on SB516.
As a matter of background, I am an analytical chemist by education, with 40 years of experience as a natural products scientist. I am the owner of SunX Analytical based in Cambridge, MD.

SunX has the distinction of being the first legal cannabis business in MD as we were the first applicant for consideration as an MMCC ITL in June 2016. Our initial application was used a guide for a significant portion of the original, and current, protocols for the analysis of Maryland's Medical Cannabis products. We turned our focus to industrial hemp in 2018.

SunX is a fully vertical hemp CBD consumer products manufacturer. We have provided testing or extraction and formulation services to many of the region's hemp farming operations. We have been instrumental in providing guidance for the MD Department of Agriculture on industrial hemp regulatory issues and have been the trusted testing partner for the University of Maryland hemp pilot program's Principal Investigators. SunX has been awarded grants two from the Rural MD Council to support the hemp industry. Our vision has been to guide the industry through its early years of CBD production with the goal of raising awareness to the overall value of hemp to the farming community while showing the way for the adoption of it as a potentially rotational crop to be harvested for seed oil and fiber.

As you know, there are several bills in the State legislature addressing the future of the cannabis and hemp industries in MD. Senate Bill 516 and co-filed House Bill 556 will establish a regulatory system for adult-use and medical cannabis.

I am contacting you to alert you to the fact that language in this bill will significantly restrict the types of hemp-derived products that one can produce and sell in Maryland. Our sense is that the legislation intends to either restrict or include manufacturing of all products that it perceives as intoxicating in the adult-use regulated program. To wit:

SENATE BILL 516 Page 70 Section 36-1103

(B) A PERSON MAY NOT SELL OR DISTRIBUTE A CANNABINOID PRODUCT THAT IS NOT DERIVED FROM NATURALLY OCCURRING BIOLOGICALLY ACTIVE CHEMICAL CONSTITUENTS.

As stated in my opposing testimony last year to HB1078, without the creation of comprehensive standards for non-naturally occurring cannabinoids, we support the decision to include restrictions to their sale and distribution.

However, we are in staunch opposition to the adoption of the THC limits to hemp-derived products detailed in Section 36-1103 (A) described below. These limits would require an adult-use license to manufacture most products made from simple hemp extracts. These limits are in clear contradiction to the Federal standard and demonstrates the author's ignorance of the public's actual experience with products like Charlotte's Web and peer-reviewed studies establishing that CBD is a known antagonist to cannabinoid CB1 receptors. In other words, credible pharmacological studies have shown that CBD reduces both the potency and efficacy of THC. Therefore, the amount of THC in a hemp-derived (CBD rich) product has no relation to the THC in a marijuana-derived (CBD deprived) product and, as such, are not a valid value for the determination of intoxication effect.

SENATE BILL 516 Section 36–1103 Page 69

(A) (1) A PERSON MAY NOT SELL OR DISTRIBUTE A PRODUCT INTENDED FOR HUMAN CONSUMPTION OR INHALATION THAT CONTAINS MORE THAN 0.5 MILLIGRAMS OF TETRAHYDROCANNABINOL PER SERVING OR 2.5 MILLIGRAMS OF TETRAHYDROCANNABINOL PER PACKAGE UNLESS THE PERSON IS LICENSED UNDER § 36–401 OF THIS TITLE AND THE PRODUCT COMPLIES WITH THE:
(I) MANUFACTURING STANDARDS ESTABLISHED UNDER § 36–203 OF THIS TITLE;

Consider that in order to continue to make a simple botanical hemp extract our hemp farms, that currently operate under Federal law, would have to register and submit to the regulations of an industry that operates outside of Federal law. Further, the bill's language is in conflict as 36-101 (C) (1) defines hemp with a 0.3% THC threshold, while Section 36-1103 (A) sets its limits at 0.01%; a thirty (30) times reduction. By example, where a typical hemp-derived product has a CBD

concentration of about 1200mg, the new limits would allow for only 40mg per one ounce container (package).

The passage of this Bill as it now reads will place our local hemp farms, producers and retailers at a significant disadvantage in the market and in our opinion is a direct attack of the MD Right to Farm statute.

I would also like to provide a potential solution to the proposed restrictions by suggesting a change in the language to raise the limits to reflect the Federal THC limits as defined in the 2018 Farm Bill to 3mg THC per hemp-derived CBD per serving and 90mg per package. As a compromise, restrictions on the use of the marketing term "Hemp-derived THC" could be adopted.

We ask that Section 36-1103 (A) be adjusted as suggested or removed from the Bill's final draft and allow MD's hemp industry to follow its current path of self-regulation. Our Federally compliant products, of which we have sold more than 30,000 units with no complaints of them having an intoxicating nature, are made following cGMP and FDA Food Safety Act guidelines.

We recommend a favorable report with amendments.

Thank you.

Barry F. Pritchard, MBA
The Chemist
SunX Analytical, LLC
104 Tech Park Drive
Cambridge, MD 21613
410-830-9814

Br J Pharmacol. 2015 Oct; 172(20): 4790–4805.
Published online 2015 Oct 13. doi: 10.1111/bph.13250
PMCID: PMC4621983
PMID: 26218440

Cannabidiol is a negative allosteric modulator of the cannabinoid CB_1 receptor

R B Laprairie, [1] A M Bagher, [1] M E M Kelly, [1,2] and E M Denovan-Wright [1]
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Abstract

Background and Purpose

Cannabidiol has been reported to act as an antagonist at cannabinoid CB_1 receptors. We hypothesized that cannabidiol would inhibit cannabinoid agonist activity through negative allosteric modulation of CB_1 receptors.

Conclusions

In conclusion, this *in vitro* study was the first characterization of the NAM activity of the well-known phytocannabinoid CBD. The data presented here support the hypothesis that CBD binds to a distinct, allosteric site on CB_1 receptors that is functionally distinct from the orthosteric site for 2-AG and THC. Using an operational model of allosteric modulation to fit the data (Keov *et al*., 2011), we observed that CBD reduced the potency and efficacy of THC and 2-AG at concentrations lower than the predicted affinity of CBD for the orthosteric site of CB_1 receptors. Future *in vivo* studies should test whether the NAM activity of CBD explains the 'antagonist of agonists' effects reported elsewhere (Thomas *et al*., 2007). Indeed, the NAM activity of CBD may explain its utility as an antipsychotic, anti-epileptic and antidepressant. In conclusion, the identification of CBD as a CB_1 receptor NAM provides new insights into the compound's medicinal value and may be useful in the development of novel, CB_1 receptor-selective synthetic allosteric modulators or drug combinations.