

Cannabinoids: General Uses and Interactions

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Background

- There has been a lot of recent interest in the use of cannabinoids by patients with cancer.
- There are currently two cannabinoid products FDA approved for cancer patients, one with orphan drug status, and one currently in Phase III clinical trials in the US.

Objectives

- The purpose of the study was to identify current uses of cannabinoid medications and possible interactions with chemotherapies.

Study Design

- Data has been collected from a primary literature and drug database search.
- Primary Outcome Measure**
-To identify uses of cannabinoid medications and the potential interactions between cannabinoid drugs and major drug transporters and metabolizing enzymes of chemotherapeutic agents.

Methods

Data Collection:

- Uses and classes of cannabinoid products were obtained through a PubMed literature search and Micromedex.
- Interactions with drug transporters and metabolic pathways were obtained by a PubMed literature search.

Data Analysis

- Cannabinoid medications were tabulated based on indication.
- Interactions with common chemotherapeutic were tabulated based on inhibition of important Cytochrome P450 enzymes and drug transporter proteins.

Figure 1

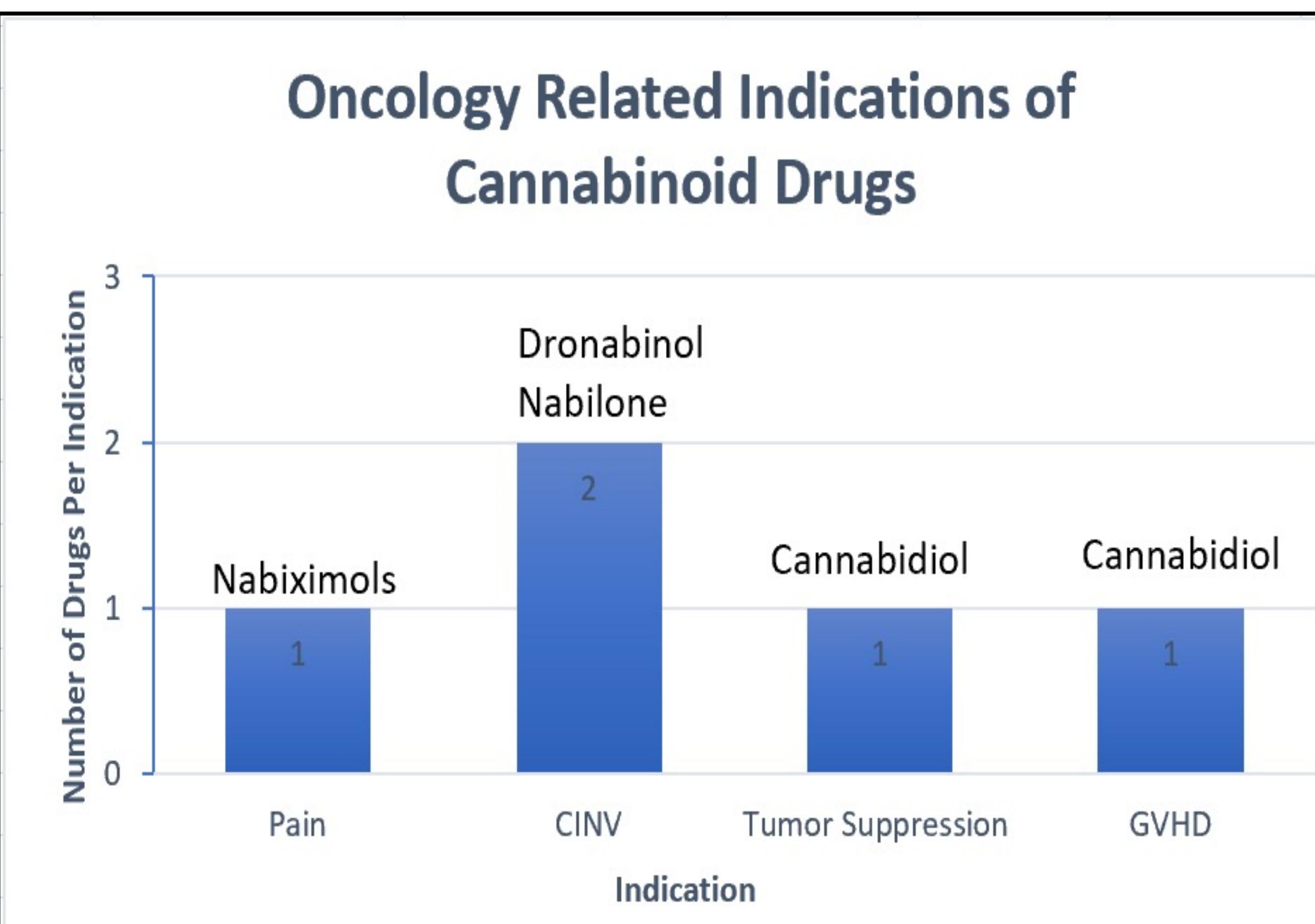


Figure 3

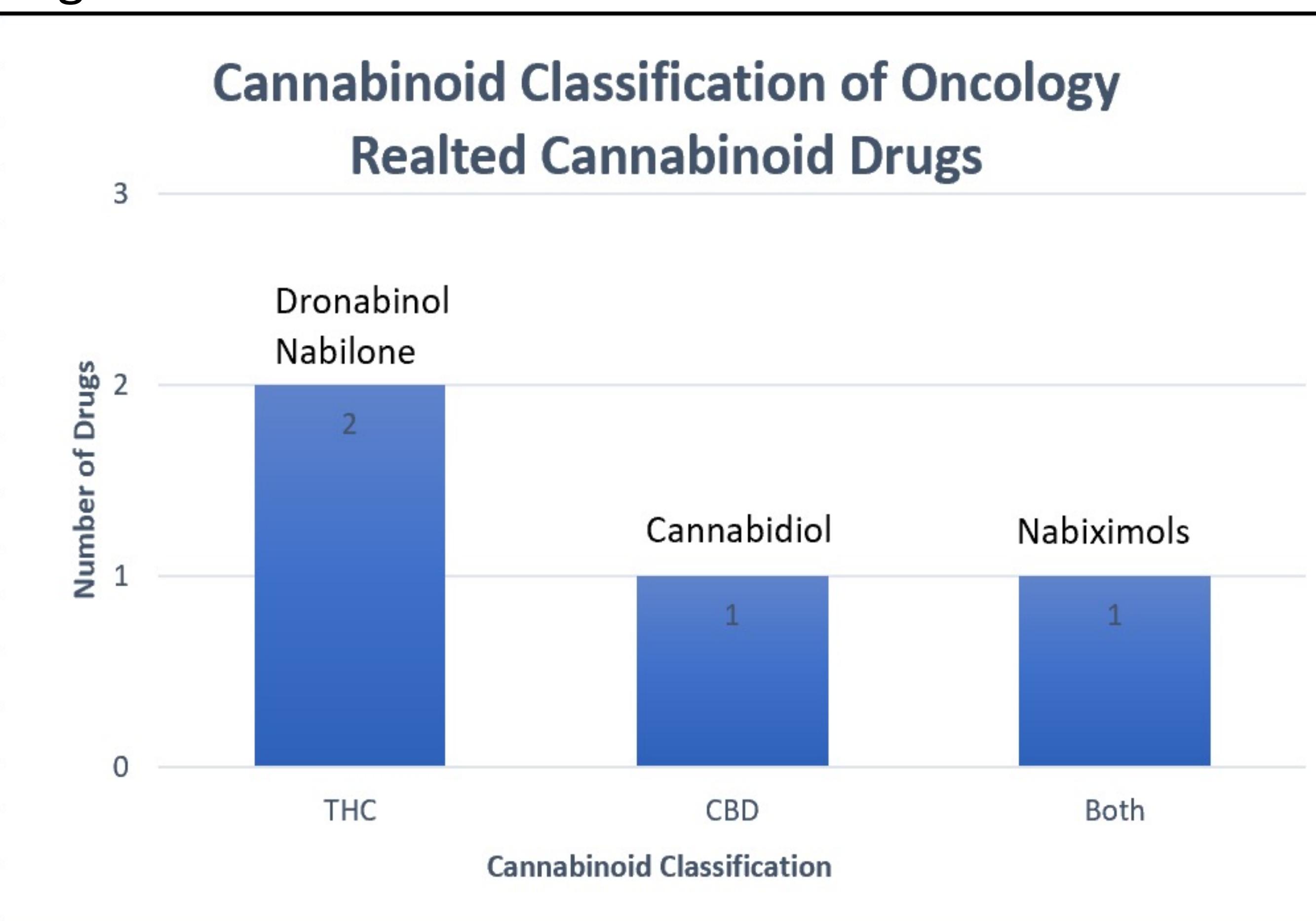


Figure 2

	P-gp	BCRP	CYP2C9	CYP3A4	CYP2D6
THC	Inhibitor	Not Significant	Not Significant	Not Significant	Not Significant
CBD	Inhibitor	Not Significant	Not Significant	Inhibitor	Potential Inhibitor
CBN	Potential Inhibitor	Not Significant	Not Significant	Not Significant	Not Significant

*Dark Blue: inhibitor; Light Blue: potential inhibitor; White: not significant

Discussion

- Figure 1 shows the number of FDA regulated cannabinoid drugs per oncology related indication.
- Figure 2 shows the inhibition of major transporters and CYP enzymes involved in the ADME of chemotherapy drugs.
- Figure 3 shows the cannabinoid classifications of FDA regulated oncology associated cannabinoid drugs.

Conclusion

- Limitations of this study include interactions between cannabinoid drugs and chemotherapeutic agents have not been proven in clinical trials. These interactions can only be speculated.
- There is the possibility of interactions between cannabinoids and chemotherapy. These interactions could cause chemotherapy toxicity or cause a poor response to a chemotherapy depending on if the chemotherapy is a prodrug. Providers should use professional judgement to determine if the cannabinoid product is necessary.

References

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