

BACKGROUND

- Multiple Myeloma (MM) is a blood cancer that disrupts the normal production of blood cells in the bone marrow.¹
- The prevalence of cannabis use among MM patients is increasing alongside expanding access to medical cannabis
- Studies suggest cannabis may alleviate cancer-related symptoms², but specific use patterns and patient-provider communication remain understudied.³

OBJECTIVE

- To evaluate and synthesize research from 2015 to 2025 on the impact of cannabis and cannabinoids on Multiple Myeloma

METHODS

- Databases searched: PubMed, Scopus, and Embase
- Keywords: “Multiple Myeloma,” “Cannabis,” “Marijuana,” “Cannabinoids”.
- Abstract screening and article selection performed using Covidence by two independent reviewers
- Inclusion criteria:** Studies evaluating therapeutic effects, risks, or outcomes related to cannabinoids in MM
- Final inclusion: 8 studies after full-text review of 22 eligible manuscripts from an initial pool of 135 abstracts

RESULTS

- Cannabinoids demonstrated pro-apoptotic effects via caspase activation, Bax/Bak upregulation, and ceramide synthesis.
- Downregulation of NF-κB and XBP1 affected telomere regulation and TP53 expression.
- Cannabinoids influenced immune modulation and cellular lifespan.
- 2 studies reported improved efficacy when cannabinoids were combined with standard MM treatments (e.g., bortezomib, dexamethasone).

KEY FINDINGS

- Cannabinoids target MM cells through multiple mechanisms:
 - Induction of apoptosis
 - Modulation of transcription factors + telomeres
 - Synergistic effects with existing chemotherapy
- Most studies were preclinical, emphasizing biological plausibility but necessary future trials

CONCLUSION

- Cannabinoids show promise as adjunct therapies in MM treatment
- Further research is necessary to evaluate the safety, effectiveness, and long-term effects of cannabis in MM treatment
- Consistent clinical trials are needed to determine safe and effective dosing strategies along with cannabis’ integration into existing treatments

References

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Mechanisms by Which Cannabinoids Affect Multiple Myeloma Cells

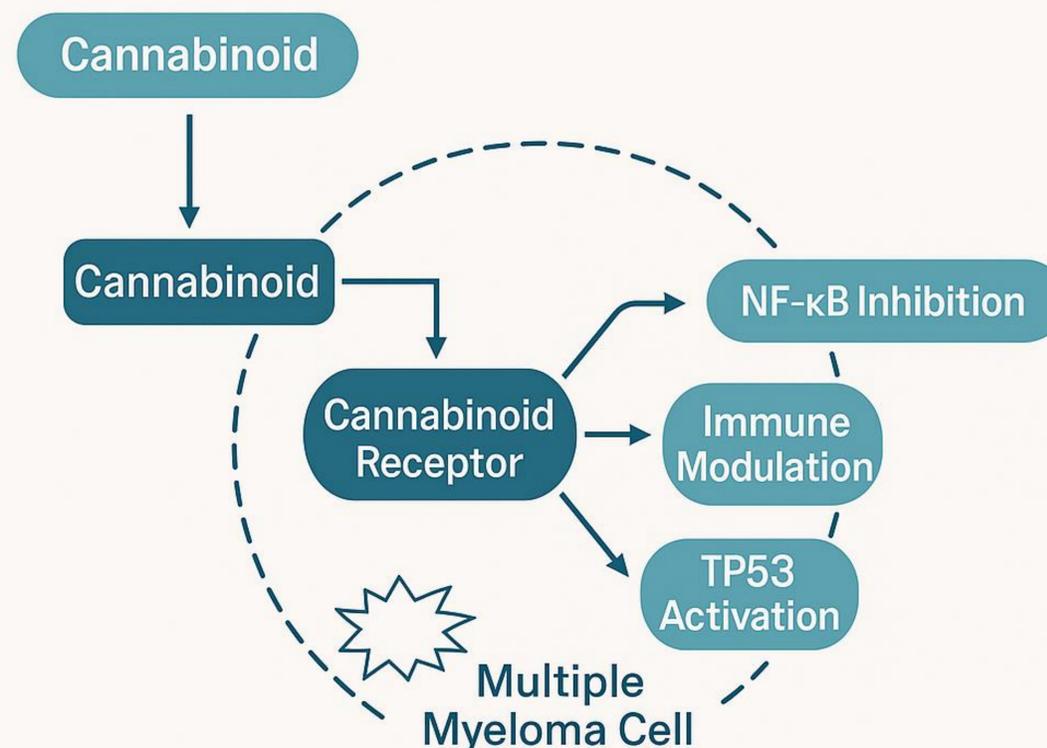


Figure 1: Mechanisms By Which Cannabinoids Affect Multiple Myeloma Cells