# Medicinal Genomics Awarded Canadian and Australian Patents for Grim Reefer® Free DNA Removal Kit

*AOAC-approved technology enhances the accuracy of qPCR microbial testing by eliminating false positives from dead DNA*

BEVERLY, MA, UNITED STATES, April 3, 2025 /EINPresswire.com/ -- Medicinal Genomics Corp. (MGC), a leader in leveraging genomics to improve agricultural safety, transparency, and productivity, today announced the issuance of Australian Patent No. 2020244838 and Canadian Patent No. 3,134,062 for its Grim Reefer® Free DNA Removal Kit. These patents provide national and international protections and recognize the contributions of Kevin J. McKernan (Founder and Chief Science Officer), Heather Ebling (Senior Applications and Support Manager), and Yvonne Helbert (Senior R&D Manager) as inventors. Applications have also been filed in the U.S., Germany, and the E.U.

> qPCR testing is incredibly precise, but without a way to remove DNA from dead cells, you can't trust your results. Grim Reefer solves this, making qPCR testing more accurate."
>
> *Kevin McKernan*

"We're proud to have Grim Reefer officially recognized for its scientific significance and impact," said McKernan. "qPCR is incredibly precise at detecting microbes through their DNA, but without a way to remove DNA from dead cells, results can overestimate contamination. Grim Reefer solves this, making microbial testing more accurate, especially in regulated environments like cannabis compliance."

A Critical Innovation in Microbial Testing.

Grim Reefer is the industry's only AOAC-approved, chemical-based DNA removal solution, specifically designed to enhance qPCR accuracy by removing extracellular DNA from non-viable cells—without damaging live organisms. This capability addresses a key limitation of traditional microbial testing methods: Culture-based plating methods fail to detect many endophytic microbes (those living inside plant tissue) and capture a fraction of epiphytes (surface microbes), leading to significant underestimation of microbial load.

Free DNA removal methods often require nucleases which can destroy downstream PCR

products. If these nucleases are not properly deactivated before PCR, they will also destroy the DNA of living cells once the living cells are lysed open for PCR. Heat-based DNAse inactivation, used by large life science vendors, often lyse cells before the DNase is fully deactivated and thus leads to false negatives in many tests.

Why Grim Reefer® is Different.

Grim Reefer uses a targeted chemical degradation process that irreversibly inactivates nucleases while leaving viable microorganisms intact. This allows for precise differentiation between live and dead microbial populations and offers key advantages:
1) Total nuclease inactivation: Eliminates the risk of residual nuclease activity during PCR.
2) Preservation of sample integrity: Viable cells and genetic material remain undisturbed during nuclease deactivation for accurate detection of live versus dead DNA.
3) Safe and user-friendly: Avoids the toxic dyes (e.g., PMA/EMA) historically used for viability PCR, offering a scalable, cost-effective workflow.

Built for Cannabis Testing—and Beyond.

This technology is particularly valuable in cannabis testing, where irradiation is often used to reduce microbial contamination. Irradiation creates complex microbial profiles that include live, dead, and viable-but-non-culturable organisms. Accurately quantifying each group is critical for quality control and compliance.

Before Grim Reefer, labs had to rely on toxic dye-based methods to make this distinction. Now, they have a safe, accurate, and AOAC-validated solution that simplifies workflows and improves test reliability.

Medicinal Genomics continues to expand its intellectual property portfolio across plant genetics, microbial diagnostics, and pathogen detection technologies, with a mission to bring greater precision and trust to agriculture, food safety, and pharmaceutical testing.

About Medicinal Genomics Corporation
Medicinal Genomics Corporation (MGC) is a leader in applying advanced genomic technologies to improve the safety, quality, and transparency of agricultural, food, and natural products. From cannabis to food crops, nutraceuticals, and nootropics, MGC's DNA-based tools help cultivators, processors, and testing laboratories ensure product integrity, regulatory compliance, and consumer confidence.

MGC is also the founder of CannMed, the premier scientific summit dedicated to advancing innovation in plant-based medicine and safety testing.
Learn more at www.medicinalgenomics.com.

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