Nonconfidential Summary Disclosure

UM 8990: Natural Insect Repellent

THE TECHNOLOGY

Researchers in the National Center for Natural Products Research at the University of Mississippi have screened thousands of crude natural products, fractions, and purified compounds for insect repellent activity. A crude preparation obtained from a biennial plant cultivated throughout the world showed biting deterrent activity comparable to the control (97% DEET).

Compound 1, through bioassay-guided fractionation, that constituted more than 75% weight/weight of the crude preparation, was found to be the most active compound. In the in vitro Klun and Debboun bioassay and an in vitro large cage bioassay, Compound 1 showed activity similar to DEET against Aedes aegypti and Anophles quadrimaculatus species of mosquitoes.

In in vivo bioassays, the minimum effective dose of the crude preparation and Compound 1 was 25 µg/cm2 as compared to 12.5 µg/cm2 for DEET. Residual activity for both the crude preparation and Compound 1 was similar to DEET at concentrations of 25 and 50 µg/cm2 up to 120 minutes post treatment.

Market opportunities include development of a new, all natural mosquito repellent, consisting of purified Compound 1 or a preparation standardized for activity by Compound 1.

COMPETITIVE ADVANTAGE

Although DEET is an effective mosquito repellent that has been used commercially for over 50 years, it is a synthetic compound with an unpleasant odor that readily penetrates through the skin raising potential safety concerns. The potential exists to develop a natural, environmentally friendly, mosquito repellent that has the potential to be as effective as DEET with inherent safety advantages.

DEVELOPMENT POTENTIAL

Proof of concept testing has been performed in the laboratory in well-known in vitro and in vivo assays. We are seeking a development and commercialization partner to address commercialization issues including regulatory approvals. Additional information is available under a NDA.

PATENT STATUS

Notice of Allowance

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KEYWORDS

Insect Repellent, Mosquitoes, Natural Products, DEET

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