New Tick Repellent Ingredient Registered by EPA

On July 20, 2020, the Environmental Protection Agency (EPA) registered a new active ingredient called nootkatone, which repels and kills ticks, mosquitoes, and other pests including bed bugs, and fleas. The Center for Disease Control (CDC) discovered and developed the new ingredient, a non-toxic chemical found in Alaska yellow cedar trees and grapefruit skin in minute amounts. Nootkatone smells and tastes like grapefruit, and is used in the fragrance industry for perfumes and food industry for flavoring. It can be used on humans and pets.

Nootkatone apparently kills bugs differently than previous classes of insecticides, including pyrethroids, organophosphates, carbamates, and cyclodiienes. Since it is a new chemical – the first insecticide approved in 11 years – it can kill bugs that are resistant to currently available pesticides. It lasts on skin and clothing for several hours.

CDC’s exclusively licensed partner, Evolva, and HHS Biomedical Advanced Research Development Authority were crucial to nootkatone development. Evolva can produce large amounts of nootkatone for low-cost, as it takes several tons of grapefruit to produce 2.2 lbs of nootkatone.

Dr. Brian Fallon, director of the Lyme and Tick-Borne Diseases
Research Center at Columbia University in New York City, said of nootkatone, “I think it’s a major contribution to our arsenal of repellents.”(nbcnews.com)

Tick-borne diseases represent almost 80 percent of reported vector-borne disease cases in the U.S. Reported cases of vector-borne diseases doubled from 2004 to 2018. Companies interested to develop brand name products will be required to submit a registration package to EPA for review, and products could be available in stores as early as 2022.

Current ingredients registered by the EPA as skin-applied insect repellents include Catnip oil, Oil of citronella, DEET, IR 3535, p-Methane-3,8-diol (pmd), Oil of lemon eucalyptus, Picardin, 2-undecanone, and now nootkatone.

LDA’s Tick-Insect Repellents: Check the Facts
LDA’s TBD & Prevention Page

CDC Press release
CDC Digital Press Kit
NY Times: Citrus Flavoring Is Weaponized Against Insect-Borne Diseases
Nbcnews.com: First new insect repellent approved in 11 years smells like grapefruit

House Approves Chris Smith Amendment Increasing Lyme
The House of Representatives passed an amendment authored by Rep. Chris Smith (R-NJ) which increases Lyme disease research funding by $4 million, for a total of $20 million, at the Centers for Disease Control and Prevention (CDC) for fiscal year 2021. The amendment, which passed July 30th, has been co-sponsored by lead Democrat, Rep. Collin Peterson (MN), and Reps. Elise Stefanik (R-NY), Antonio Delgado (D-NY), Max Rose (D-NY), and Raul Grijalva (D-AZ).

Rep. Smith said, “Just three years ago CDC’s Lyme budget was only $11.7 million. The increase in funding achieved through my amendment will help CDC develop better diagnostic tests for Lyme, expand tick surveillance activities across the US and strengthen the federal government’s overall strategy to combat Lyme.”

In the news release, Pat Smith, LDA President was quoted: “Rep. Smith’s funding amendment is an important step in the fight to reign in Lyme disease. The rising case numbers and increasing spread of tick-borne diseases are alarming and require a sustained focus from Congress to try to control this epidemic. We are grateful to Congressman Smith for his continued dedication to this effort and his success along with
his colleagues to acquire an additional $4M in funding for Lyme disease and other tick-borne diseases. In these difficult times for our country, that is an outstanding accomplishment.”

Earlier in July, the House agreed to another Smith Lyme Disease amendment to mandate a GAO investigation into possible use of ticks in a Department of Defense bioweapons program. [Read more on LDA website]

Rep. Smith introduced the House version of the recently enacted law, the **TICK Act**  (*Ticks: Identify, Control, Knockout Act—HR 3073*), which implements a national strategy to fight Lyme disease and authorizes an additional $150 million to increase funding for Lyme research, prevention and treatment programs. Senator Susan Collins (ME) had introduced the Senate version.  [Read more on LDA website]

[Read Rep. Chris Smith’s full news release here](#)

[Read history of the amendment on LDA website](#)

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**Lyme Vaccine Candidate: Valneva Announces Phase 2 Study Results**
Valneva announced that the vaccine candidate against Lyme disease, VLA15-201, showed positive initial results meeting its endpoints in the Phase 2 study. They stated in the July 22, 2020 press release that “compared to Phase 1, the higher doses used in this trial elicited higher antibody responses across all serotypes.” Of particular note was the immunological response found in older adults (50-65 years), one of the main target groups for a Lyme vaccine. The vaccine candidate is described as “generally safe across all dose and age groups tested”, finding no Serious Adverse Events (SAEs) associated with VLA15. This is an important finding given the history of vaccines and serious concerns that have been generated regarding patient safety and vaccines in the Lyme community.

VLA15 is the only active Lyme disease vaccine candidate in clinical development today, covering six serotypes of Lyme disease prevalent in North America and Europe. It was granted Fast Track designation by the U.S. Food and Drug Administration (FDA) in July 2017. In a few months, Valneva expects to report top-line results for the second Phase 2 study, VLA15-202. Valneva and Pfizer are collaborating for development and commercialization of VLA15.

Read full July 22, 2020 press release here

Read Valneva vaccine history and Lyme Disease Association’s concerns here:
https://lymediseaseassociation.org/news/lyme-disease-vaccine-collaboration-announced/

https://lymediseaseassociation.org/about-lyme/controversy/vaccine/new-vaccine-in-the-news/
Current Lyme Disease Testing Problems

Elizabeth Maloney, MD, explains current Lyme disease testing issues, including the ELISA and Western Blot, sensitivity and specificity of the testing, and the problems associated with the two-tier testing recommended by the CDC. It begins with the general characteristics of diagnostic testing.

The Summary states: “Serologic testing for Lyme is inaccurate. While the inadequate sensitivity of ELISA and Western blot tests is the primary problem, imprecision and the lack of clinical validity contribute to the poor performance of two-tier testing in clinical settings. Although the high specificity of the CDC two-tier strategy works well for epidemiologic purposes, the testing sequence reduces the overall sensitivity, thereby limiting its clinical effectiveness. While positive results on two-tier testing in an untreated patient who has symptoms of Lyme disease would confirm the clinical diagnosis (and it would be a mistake to label such results as “false positives”), negative results do not rule out Lyme disease.”

See full article by Elizabeth Maloney, MD here: Applying Basic Concepts in Laboratory Testing to Serologic Testing for Lyme Disease

See International Lyme & Associated Diseases (ILADS) Controversy & Challenges Page – Issues with Diagnosis & Diagnostics

On April 9th, Rep. Chris Smith sent a letter to Health and Human Services (HHS) Secretary Alex Azar and the National Institute for Allergies and Infectious Disease (NIAID) Director, Dr. Anthony Fauci, thanking them for their tireless efforts to address the Coronavirus outbreak as well as expressing his concerns about Lyme disease sufferers and their potential to be especially vulnerable to COVID-19.

Smith wrote, “As you know, my home state of New Jersey has been ravaged by COVID-19—as of April 9 there have been 51,027 confirmed positive cases and 1,700 have tragically lost their lives. Thousands more have lost their lives across the entire Tri-State area which also includes New York and Connecticut. I
find this outbreak especially concerning when I consider the countless individuals who live in this region who also suffer from Lyme Disease, which also considers the Tri-State Area as a ‘hotspot.’”

The letter highlighted a 2018 HHS Tick-Borne Disease Working Group (TBDWG) report to Congress indicating that there are approximately 300,000 new cases of tick-borne disease annually in the US. Smith warned this number is likely higher and a press release from his office states that an estimated 40,000 of these cases originate in New Jersey.

“I remain deeply concerned about what impact COVID-19 and the Coronavirus outbreak will have on the countless Americans suffering from Lyme Disease and other related coinfections,” Smith continued. “Does the National Institutes of Health believe Lyme Disease, and other tickborne diseases, are considered underlying conditions which put individuals at higher risk for COVID-19?”

Since 1993 Smith has consistently worked to address the needs of the Lyme disease community including authoring comprehensive amendments and legislation such as the Lyme Disease Initiative Act of 1998 and more recently, The Tick Act, which creates a “new whole-of-government” national strategy to combat Lyme and other tick-borne diseases.

Read Congressman Smith’s letter to NIH and HHS.

Read a Press Release about Congressman Smith’s letter.
The Connecticut Agricultural Experiment Station (CAES) and US Biologic, Inc. released the publication of a field trial study showing the effectiveness of an orally-delivered anti-Lyme vaccine that targets the white-footed mouse, the major wildlife source of Lyme disease.

The study took place in the residential area of Redding, CT, over a three-year time period and showed substantial decreases in the number of infected mice. One year into the study, test sites that had been treated with the vaccine showed a 13X greater decrease in blacklegged ticks (*Ixodes scapularis*, the primary vector associated with the spread of disease) infected with *Borrelia burgdorferi* (the bacterium that causes Lyme disease) compared to control sites (i.e., 26% drop versus 2% drop).

“Fewer infected ticks mean less infection in the field overall,” says Dr. Kirby C. Stafford, Chief Scientist and
State Entomologist, “So the decrease would be greater year-over-year that the vaccine is applied.”

A second effect, which has been observed in previous laboratory-based studies showed that the vaccine causes the mice to generate antibodies and therefore previously infected ticks act as a ‘xenodiagnostic marker’ of vaccine impact, meaning once they ingest the antibodies, while feeding on vaccinated mice, the ticks then become ‘cleared’ of infection.

Dr. Scott C. Williams, Agricultural Scientist and co-author of the study verified that when non-infected mice feed on vaccine-coated pellets, they are then protected from the Borrelia burgdorferi infection. “Non-infected ticks, therefore, cannot pass the disease to other animals, including humans” he says.

The study’s findings were published in the peer-reviewed publication, Experimental and Applied Acarology. Click here to view the press release from The Connecticut Agricultural Experiment Station.

First biennial report to Congress gives blueprint for federal response

2018 Tick-Borne Disease Working Group Report Confirms Lyme is Spreading, Time for Action is Now

Washington, Nov 14, 2018 | Matt Hadro ((202) 225-3765)

The 2018 Tick-Borne Disease Working Group Report to Congress—the very first report by the new HHS Working Group—confirms what Rep. Chris Smith (R-NJ) and other advocates have long warned of, that incidents of Lyme disease and other tick-borne diseases are increasing and that more federal attention to the problem is needed, Smith said on Wednesday.

Click here for full Press Release from the office of Congressman Chris Smith

Centers for Disease Control & Prevention Announces Higher than Ever Lyme Cases

In a press release by the Centers for Disease Control & Prevention (CDC) on the state of tick-borne diseases in the US, CDC introduced its new platform for reporting Lyme disease statistics. The release indicates that there has been an increase in all tick-borne diseases, not just Lyme disease,
and that it is the highest total annual number of Lyme cases ever reported at 42,743 cases, and a total of all reported tick-borne diseases of 59,349, which includes Lyme, anaplasmosis/ehrlichiosis, spotted fever rickettsiosis, babesiosis, tularemia, and Powassan virus.

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The Lyme Disease Association, Inc. reminds the public that Lyme is underreported by a factor of 10, therefore, 427,430 cases of Lyme disease probably occurred in 2017 in the U.S. alone.

Click here for CDC Release

Announcement by CDC in Vital Signs Monthly Report

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Senate Approves $1 Million Investment To Combat Lyme
Across New York State

FOR RELEASE: Immediate, Tuesday, June 19, 2018
http://www.nysenate.gov

SENATE APPROVES $1 MILLION INVESTMENT TO COMBAT LYME ACROSS NEW YORK STATE
Historic Levels of Funding Build Upon the Senate’s Commitment to Increasing Public Awareness, Treatment, and Prevention of Lyme and Other Tick-Borne Illnesses. The New York State Senate today approved a resolution to provide a record $1 million to help fight the scourge of Lyme and other tick-borne diseases (TBDs) throughout the state.

The New York State Senate today approved a resolution to provide a record $1 million to help fight the scourge of Lyme and other tick-borne diseases (TBDs) throughout the state. The new funding will help support a wide variety of local investments identified by the Senate’s Task Force on Lyme and Tick-Borne Diseases to increase education, research, prevention, and treatment options, and combat the ongoing increase in TBDs throughout New York.

The Senate Majority – and specifically the Task Force – led
the charge in securing this historic level of funding in the 
2018-19 state budget. Based on the Task Force’s 
recommendations, the final budget restores $400,000 in 
Executive Budget cuts and includes $600,000 in new funding for 
a total of $1 million.

Senator Sue Serino, Chair of the Task Force on Lyme and Tick-
Borne Diseases, said, “With the State Senate successfully 
securing an unprecedented $1 million in this year’s budget to 
bolster awareness, prevention and research initiatives, we are 
sending a strong message to New Yorkers who have spent years 
grappling with the devastating impacts of Lyme and tick-borne 
diseases. This critical funding will play a direct role in 
helping us to combat the spread of Lyme and TBDs in the state, 
and with the Hudson Valley sitting at the epicenter of this 
epidemic, I am especially proud to have secured funding that 
will go directly to our local community. I thank Senator Kemp 
Hannon, Chair of the Senate’s Health Committee, who has 
partnered with me to continue building momentum on this 
important issue. Working together with partners at all levels, 
we can ensure that New York has an effective statewide action 
plan in place to empower patients and better protect residents 
against the scourge of Lyme and TBDs.”

Senator Kenneth P. LaValle (R-C-I, Port Jefferson) said, “I am 
pleased that the Senate was able to secure $1 million for Lyme 
and Tick Borne Disease (TBD) funding. My colleagues and I 
fought hard to secure this funding, recognizing the importance 
of fighting the spread of Lyme and TBD’s throughout the state. 
My district is particularly hard hit, especially on the East 
End of Long Island. This money will allow for the continuation 
of the highly successful Tick Borne Disease Center at 
Southampton Hospital, a four poster program on Shelter Island 
directly targeting the spread of ticks from the deer 
population, and the creation of a new state-of-the-art 
infectious disease lab at Stony Brook University.”

Senator Betty Little (R-C-I, Queensbury) said, “I represent a
beautiful region of New York State and we want people outdoors, enjoying nature. But the fear of contracting Lyme Disease is increasingly a deterrent and that’s a shame. My experience is that the statistics of reported cases fall short of what is actually happening. A mere mention of Lyme disease among a group of people and you immediately hear horror stories of misdiagnosis and costly long-term treatments. The good news is we are making progress and the Senate task force is playing a major role. We’ve secured funding and spearheaded legislation. We have taken our direction from the public we serve, from those leading the effort to improve diagnosis and treatment and from the incredible insight of patients themselves. This additional funding will make an impact in the North Country and I am very grateful to have helped secure it as part of this year’s budget.”

Highlights of the resolution passed today include:

- **Cary Institute of Ecosystem Studies, Inc.** – $192,000 to research community-based prevention methods by continuing and expanding “The Tick Project,” a five-year research project. The funding will help determine whether neighborhood-based prevention can reduce human cases of Lyme and other TBDs.

- **Stony Brook University** – $175,000 to open a state-of-the art infectious disease laboratory, which will have an insectary dedicated solely for work on ticks. The laboratory will be open to Stony Brook scientists and others as a regional facility with unique research capabilities. The funds will be used to support activities in the laboratory and new research on TBDs.

- **Cornell University** – $130,000 to study the distribution of ticks and the diseases they carry in various parts of the state through the Tick Outreach and Surveillance Project for New York. Run through the New York State Integrated Pest Management (IPM) Program at Cornell University, the research will primarily focus on the spread of
ticks by species within certain counties. Other areas of study include ways to reduce human exposure to TBDs, tick management workshops, and best practices in schools, camps, parks, and places where people gather outdoors.

- **New York State Association of County Health Officials (NYSACHO)** – $112,000 to increase public awareness throughout New York through eight to 10 regional educational lectures. The informational seminars will focus on community awareness, best practices for TBD investigation, tick surveillance, and disease prevention to local parts of the state heavily impacted by the effects of Lyme and TBDs.

- **SUNY Adirondack** – $100,000 for laboratory research on lesser-known TBDs, including infectious diseases known to be comorbid with Lyme disease, such as Babesia, Bartonella, Ehrlichia, Anaplasma, and Powassen virus. The work would help provide much needed information about the rates of these coinfections in people with Lyme disease in New York.

- **Southampton Hospital** – $75,000 to fund the Tick-Borne Disease Resource Center, which helps doctors in multiple disciplines collaborate with researchers and community outreach experts to inform and treat individuals from across the region.

- **New York State Department of Health** – $60,000 to increase the number of tick collection sites in New York, and the number of ticks tested for pathogens statewide. The funding will also be used to hire temporary staff to assist with sampling and testing, as well as targeting of educational messages in a more efficient manner.

- **SUNY College of Environmental Science and Forestry** – $50,000 to monitor seasonal variations of ticks in Western and Central New York to help provide a better understanding of how disease transmission risks are changing. The study will also provide public information to better explain the risks of tick exposure.

- **Paul Smith’s College** – $30,000 to study the emergence of TBDs in the North Country by continuing and expanding academic studies that monitor ticks and TBDs.
Cornell Cooperative Extension – $26,000 for a series of regional Lyme and TBD forums to be hosted throughout the state. The forums will help provide the public with information on tick identification, tick bite prevention, Lyme disease and co-infection awareness, impact on pets and livestock, and health resources that are available for individuals who have been bitten by a tick.

New York State Department of Health – $25,000 to continue database mining, which would include various projects associated with Lyme carditis, as well as deaths associated with Lyme and other TBDs.

Town of Shelter Island – $25,000 to help combat the spread of ticks on Shelter Island, which is one of the worst hit areas of the public health crisis. The town has developed a four-poster program to stem the spread of ticks associated with the deer population. The town has built and installed four-poster stations, to remove ticks from deer across the Island, and this funding would maintain and expand the efforts of this critical initiative.

In addition to the $1 million announced today, the Senate was instrumental earlier this year in passing a package of bills aimed at combating Lyme and TBDs, based on the recommendations of the Senate’s Task Force on Lyme and Tick-Borne Diseases.

Contagion® Interviews Pat Smith to Mark Lyme Awareness
LDA thanks Contagion® for taking time to raise awareness regarding Lyme and tick-borne diseases. They have provided several avenues for LDA to promote educational materials through articles, video segments and now a press release for mass distribution.

CRANBURY, N.J.—(BUSINESS WIRE)—In recognition of Lyme disease awareness month, Contagion®, the nation’s leading digital and print publication that provides practitioners and specialists...
working in the infectious disease field with disease-specific information, interviewed Pat Smith, president of Lyme Disease Association, Inc, to better understand current issues surrounding the diagnosis and treatment of Lyme disease....

Click here for Full Press Release