Apimondia
2025

Köpenhamn


wachsdampfschmelzer geeig
Bienenkugel

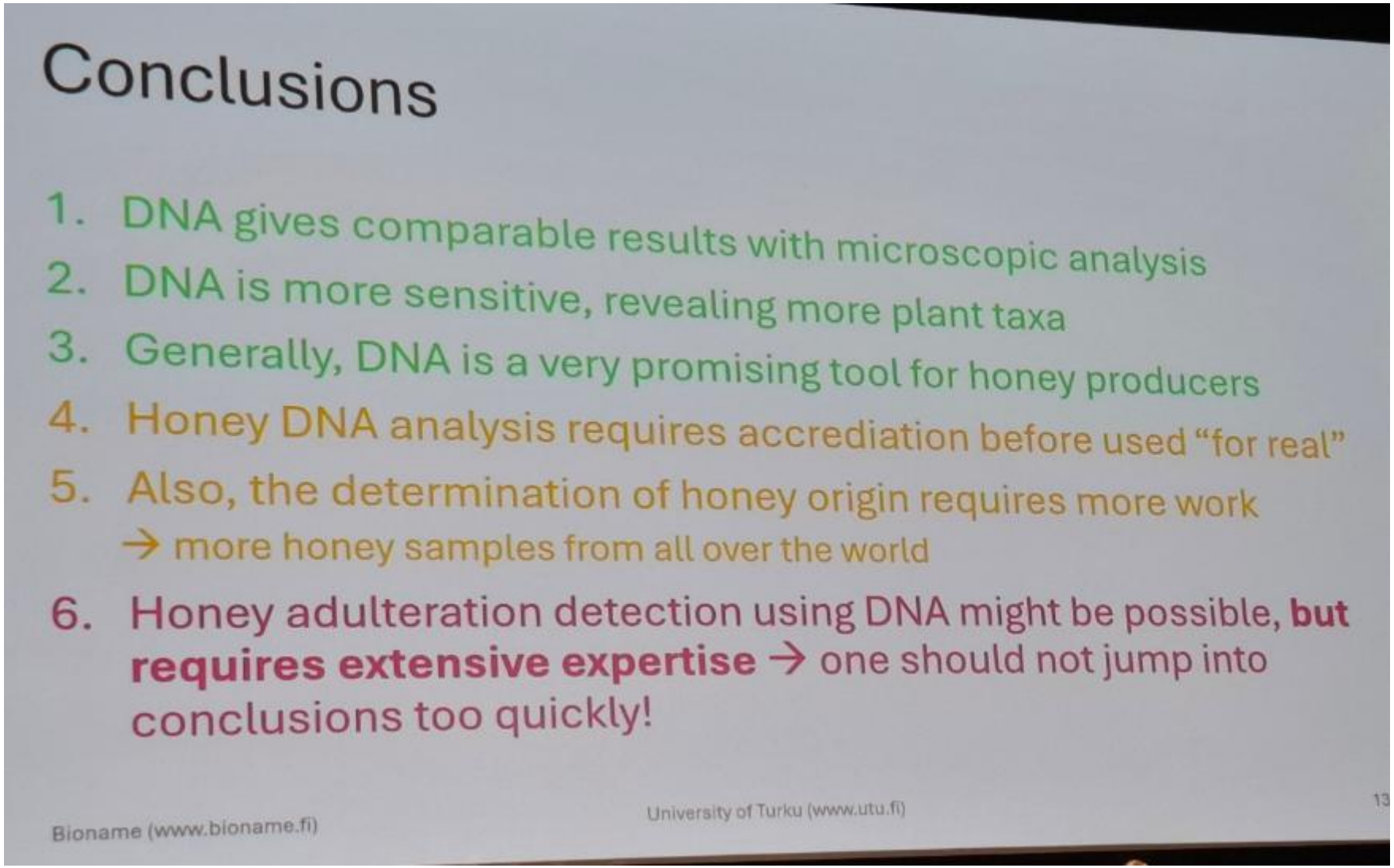
Mjöd bedömning


PLEASE
DO NOT TOUCH
kerin
PLEASE


PLEASE
DO NOT TOUCH
DO NOT
TOUCH


PLEASE

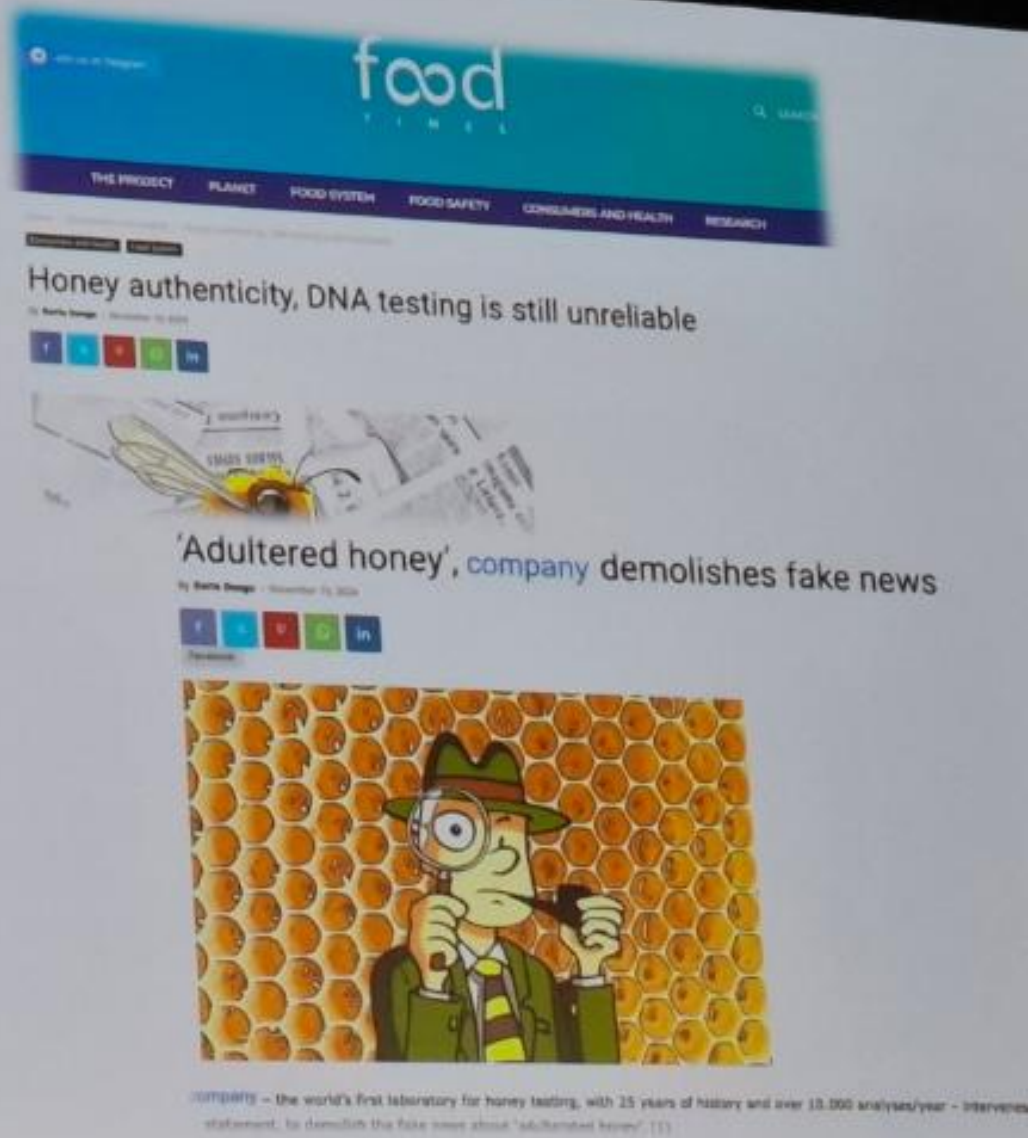
Eeero J Westerinen Åbo Finland



Honey authenticity

DNA approach for honey needs to be:

- independently tested for its robustness and accuracy
- compared with several laboratories in comparative analyses
- based on a wide and confirmed database



This is how to achieve the requirements

A. Detailed investigation at the honey sample level
B. Experimental testing for honey adulteration
C. Examples of real, authentic honey
D. Geographic coverage from all over the world

Shortly: detection of honey adulteration using DNA requires more work.

To progress with honey DNA analyses, **many more honey samples need to be processed**!

How to sample more honey?

1) Register your honey sample here:

https://forms.cloud.microsoft/r/eVKa5d1fFx

2) You may send your honey sample to our laboratory or give it to me during Apimondia

3) Anyone can participate

HONEY
DNA ANALYSIS

IDENTIFYING HONEY CONTENTS

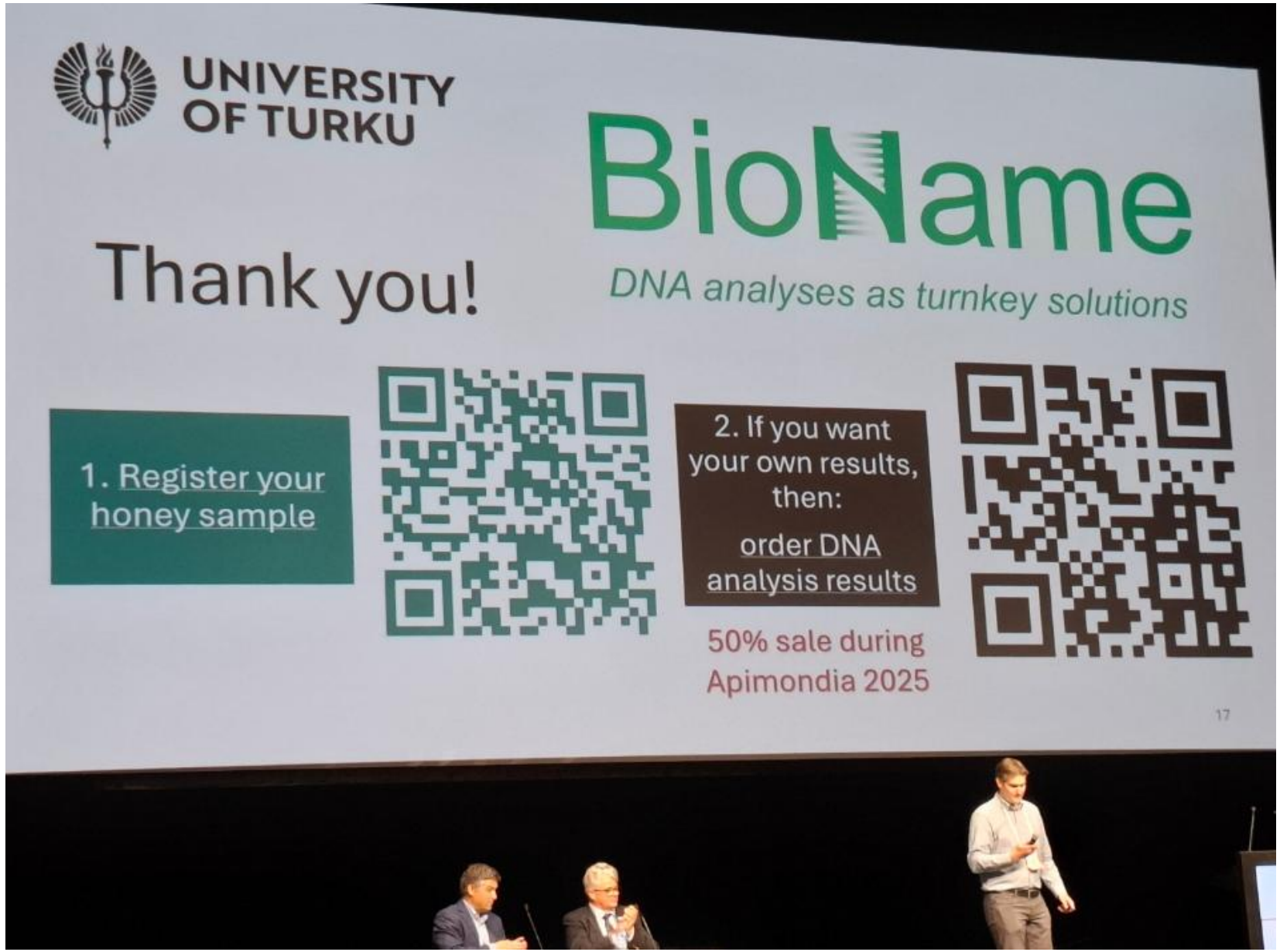
DNA analysis can identify plants, pollen, and microbes in honey

HOW DNA ANALYSIS WORKS

DNA METABARCODING
Specific short regions of DNA are sequenced and matched to reference databases

METAGENOMICS
Entire genomes are sequenced, yielding data on all organisms in the honey

qPCR
Quantifies DNA from particular species or organisms through targeted amplification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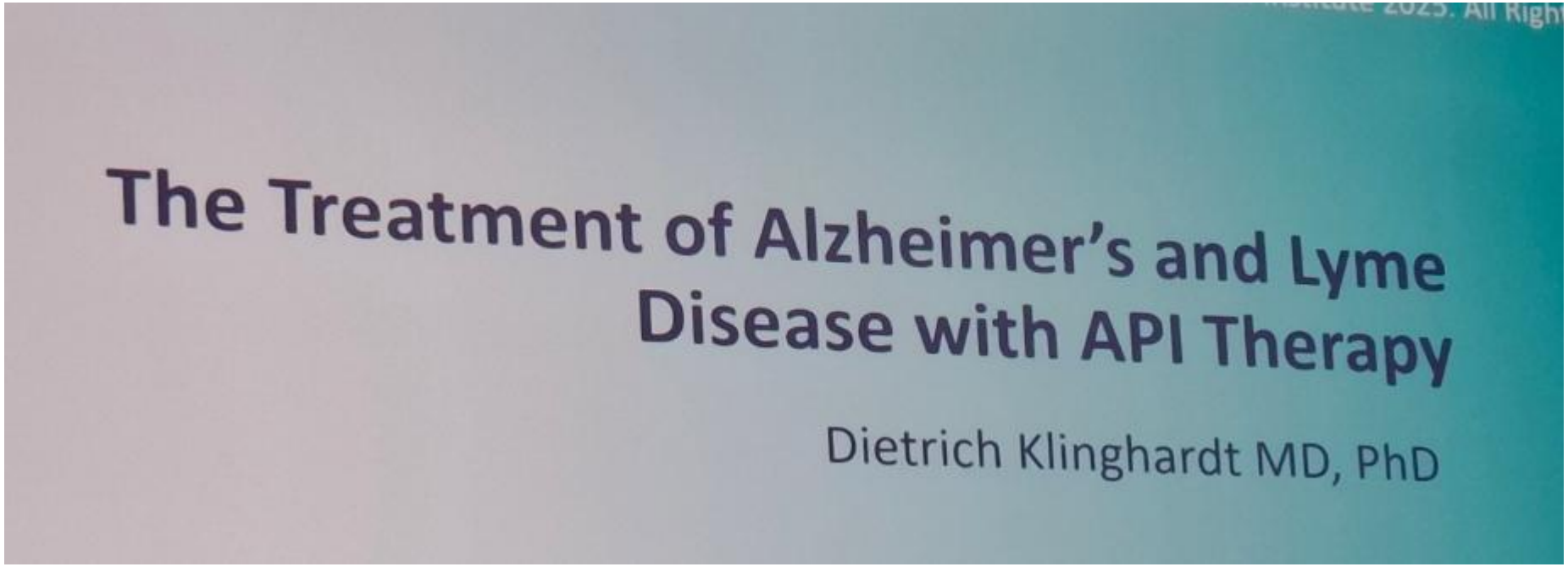
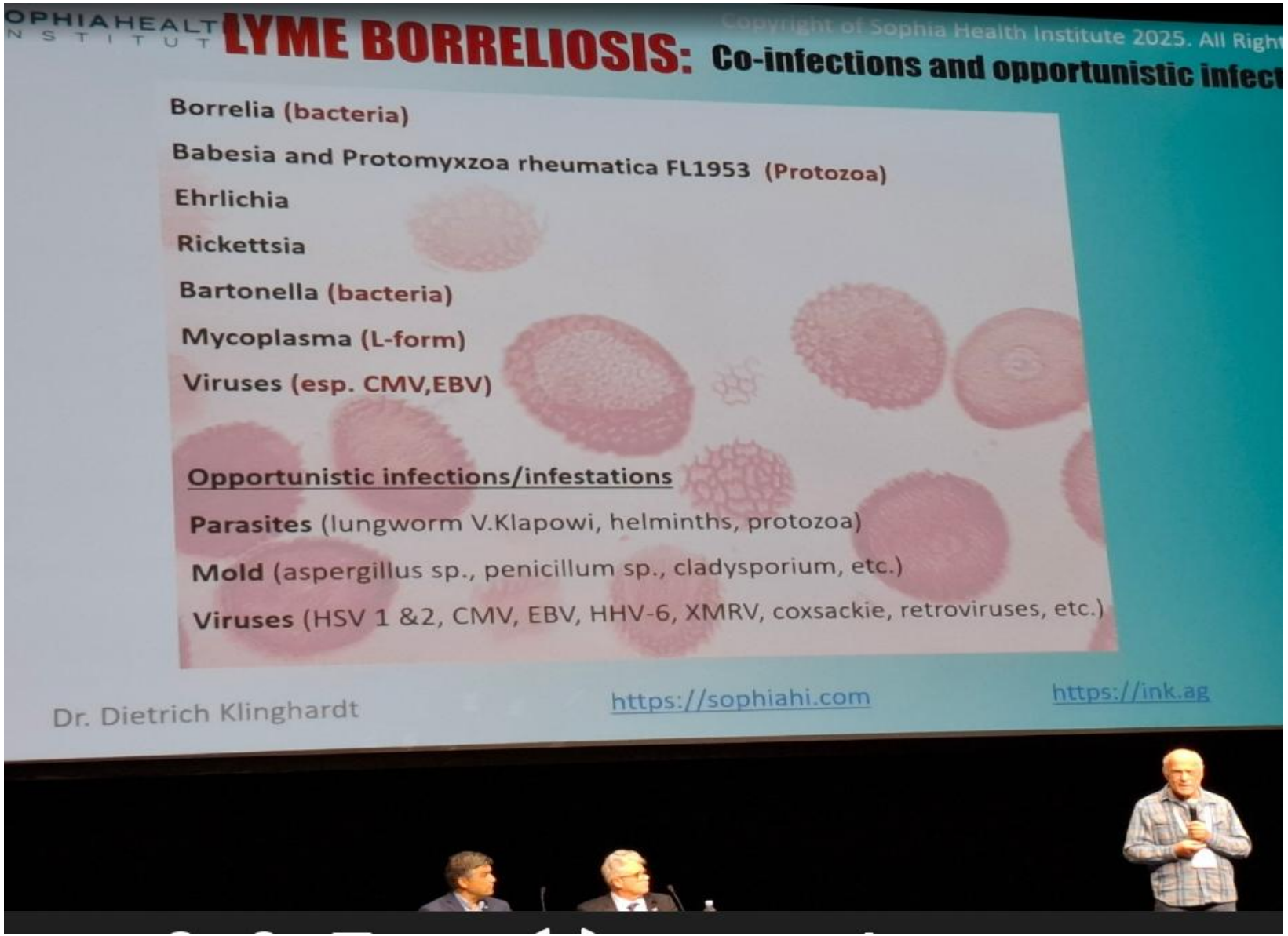
BioName
DNA analyses as turnkey solutions
Thank you!
1. Register your honey sample
2. If you want your own results, then:
order DNA analysis results
50% sale during Apimondia 2025
17



Behandling av Alzheimer och Borrelia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NSTITUT
LYME BORRELIOSIS: Co-infections and opportunistic infect
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Borrelia (bacteria)
Babesia and Protomyxzoa rheumatica FL1953 (Protozoa)
Ehrlichia
Rickettsia
Bartonella (bacteria)
Mycoplasma (L-form)
Viruses (esp. CMV,EBV)
Opportunistic infections/infestations
Parasites (lungworm V.Klapowi, helminths, protozoa)
Mold (aspergillus sp., penicillum sp., cladysporium, etc.)
Viruses (HSV 1 &2, CMV, EBV, HHV-6, XMRV, coxsackie, retroviruses, etc.)
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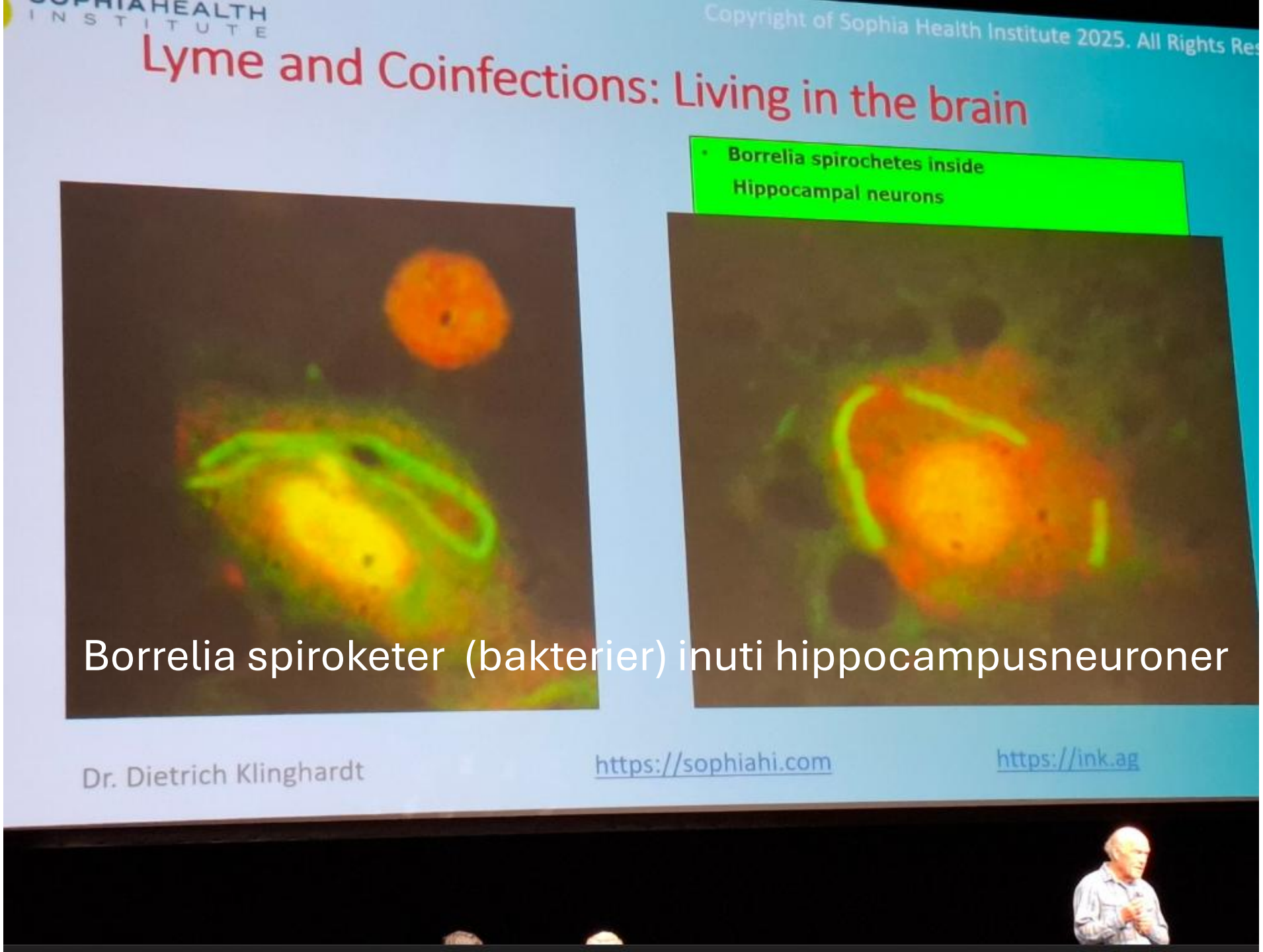
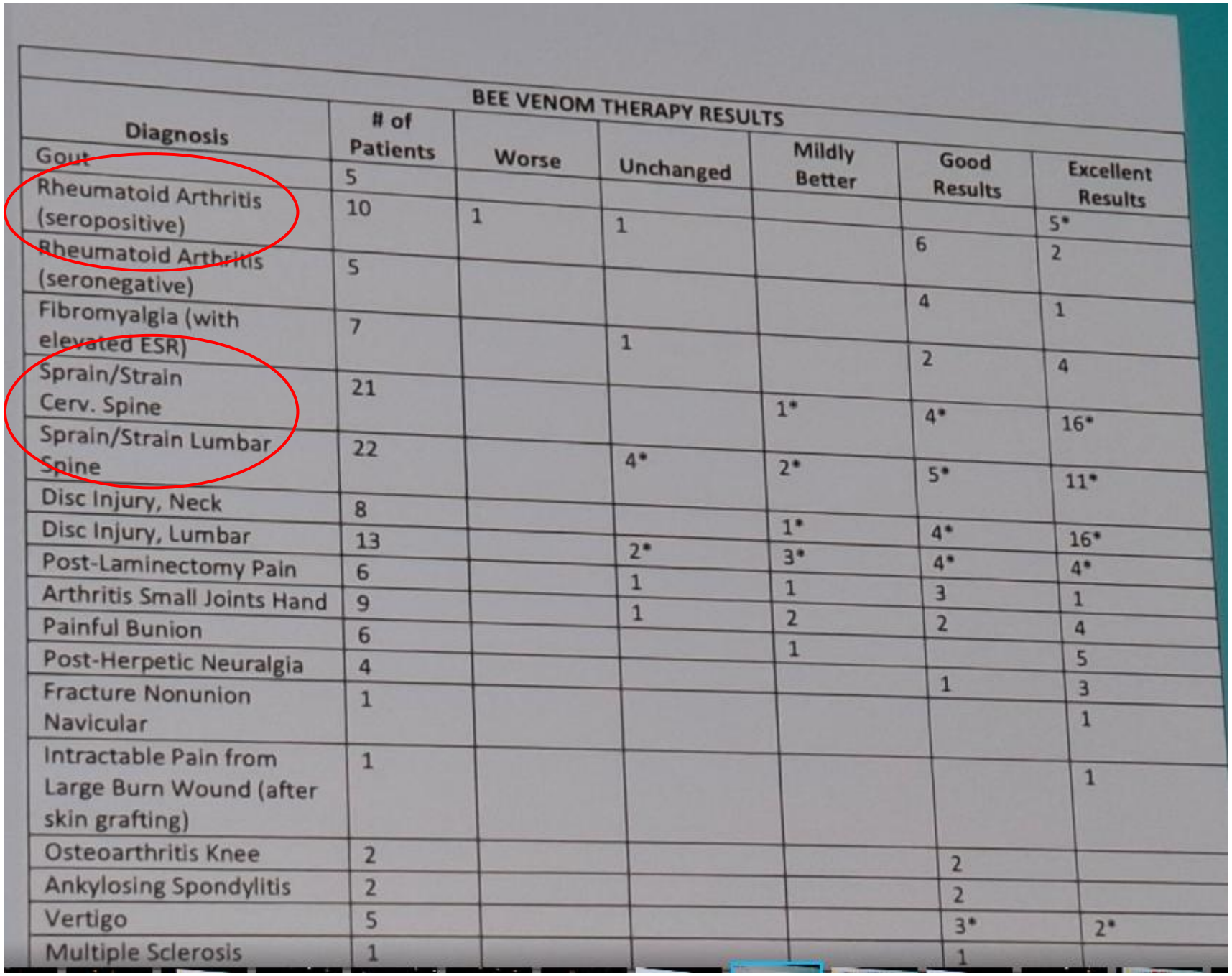
Does Borrelia cause Alzheimer's disease?

- MacDonald, A. B. (2006). Plaques of Alzheimer's disease originate from cysts of Borrelia burgdorferi, the Lyme disease spirochete. *Medical hypotheses*, *67*(3), 592-600.
- Miklossy, J., Khalili, K., Gern, L., Ericson, R. L., Darekar, P., Bolle, L., ... & Paster, B. J. (2005). Borrelia burgdorferi persists in the brain in chronic lyme neuroborreliosis and may be associated with Alzheimer disease. *Journal of Alzheimer's Disease*, *6*(6), 639-649.
- Blanc, F., Philippi, N., Cretin, B., Kleitz, C., Berly, L., Jung, B., ... & de Seze, J. (2014). Lyme neuroborreliosis and dementia. *Journal of Alzheimer's Disease*, *41*(4), 1087-1093.
- Herrera-Landero, A., Amaya-Sánchez, L. E., d´ Hyver de las-Deses, C., Solórzano-Santos, F., & Gordillo-Pérez, M. G. (2019). Borrelia burgdorferi as a risk factor for Alzheimer's dementia and mild cognitive impairment. *European Geriatric Medicine*, *10*(3), 493-500.
- Meer-Scherrer, L., Chang Loa, C., Adelson, M. E., Mordechai, E., Lobrinus, J. A., Fallon, B. A., & Tilton, R. C. (2006). Lyme disease associated with Alzheimer's disease. *Current microbiology*, *52*(4), 330-332.



Borrelia spiroketer (bakterier) inuti hippocampusneuroner



BEE VENOM THERAPY RESULTS

Diagnosis	# of Patients	Worse	Unchanged	Mildly Better	Good Results	Excellent Results
Gout	5					5*
Rheumatoid Arthritis (seropositive)	10	1	1		6	2
Rheumatoid Arthritis (seronegative)	5				4	1
Fibromyalgia (with elevated ESR)	7		1		2	4
Sprain/Strain Cerv. Spine	21			1*	4*	16*
Sprain/Strain Lumbar Spine	22		4*	2*	5*	11*
Disc Injury, Neck	8			1*	4*	16*
Disc Injury, Lumbar	13		2*	3*	4*	4*
Post-Laminectomy Pain	6		1	1	3	1
Arthritis Small Joints Hand	9		1	2	2	4
Painful Bunion	6			1		5
Post-Herpetic Neuralgia	4				1	3
Fracture Nonunion Navicular	1					1
Intractable Pain from Large Burn Wound (after skin grafting)	1					1
Osteoarthritis Knee	2				2	
Ankylosing Spondylitis	2				2	
Vertigo	5				3*	2*
Multiple Sclerosis	1				1	

Sprain/strain
Lumbar spine =
Vrickning/töjning
Ländrygg

Disc Injury, Neck =

Wippflash

Behandling med bigift

2ggr i veckan

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Addendum

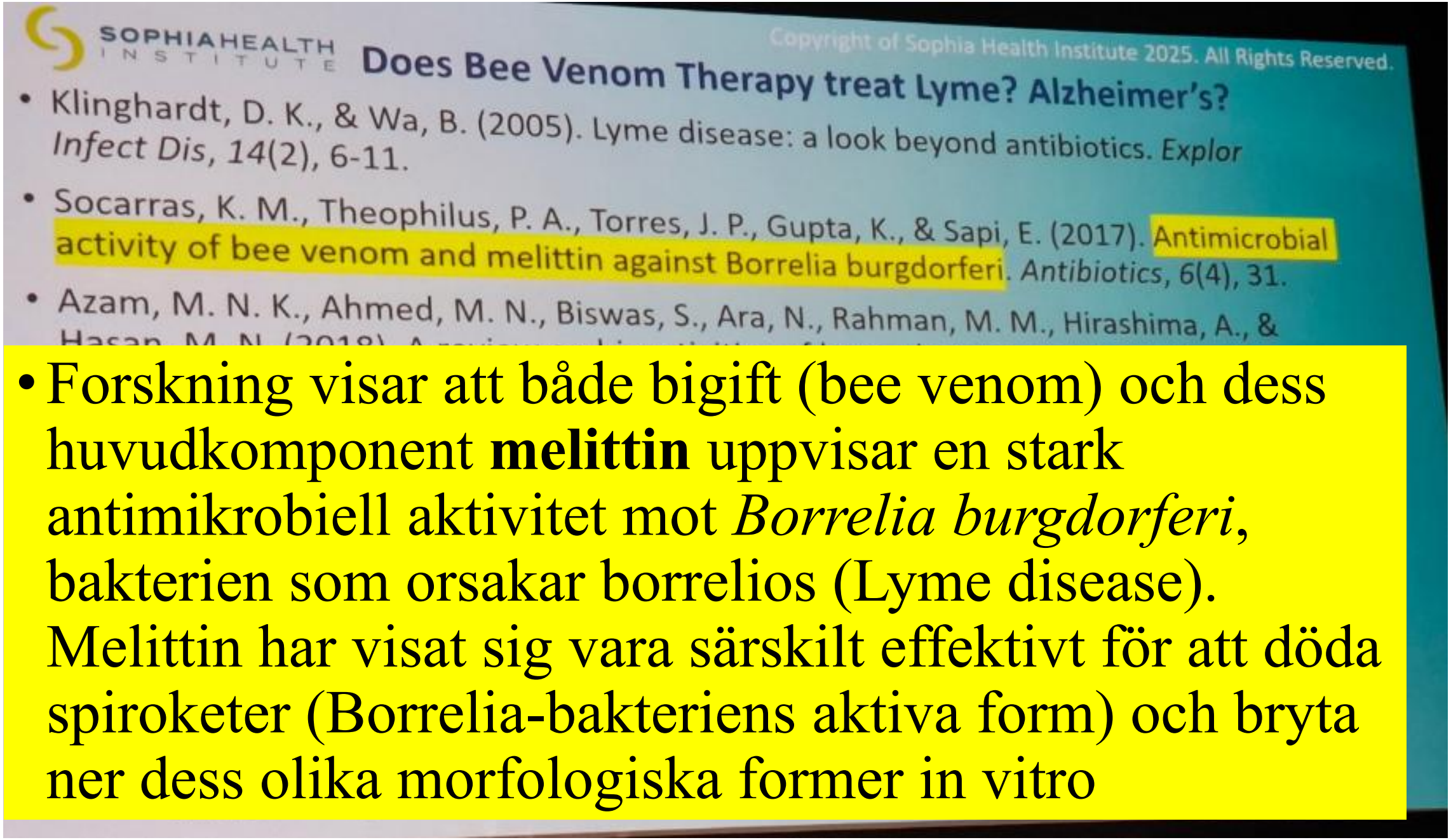
Bee Venom Therapy

The treatment with regular bee venom injections (or direct application of bee stings since the early part of the 1800ds) has been used successfully for the treatment of arthritis, chronic fatigue and other debilitating illnesses.

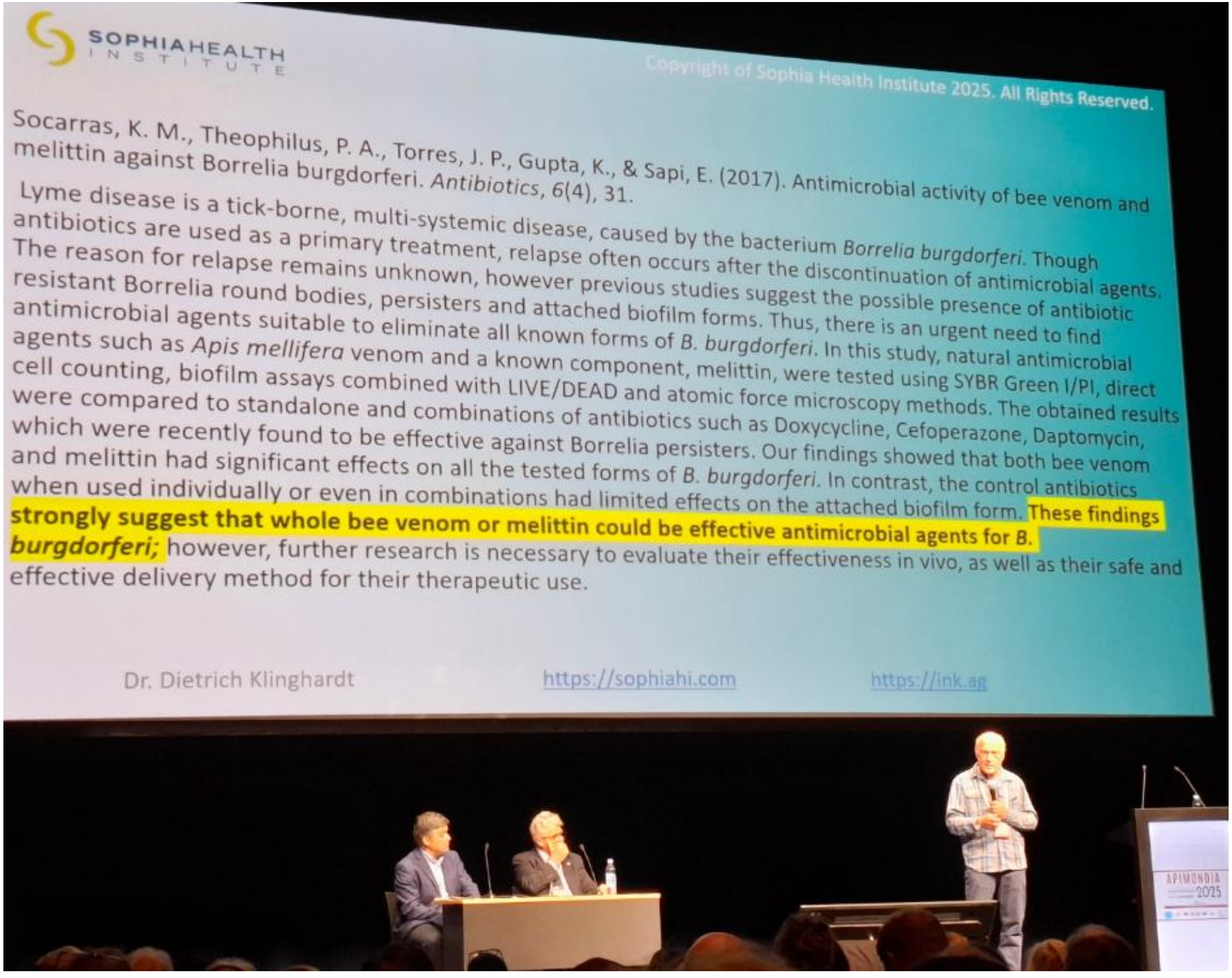
I use injectable bee venom at the Sophia Health Institute in selected patients as a long-term wellness modality that improves cognitive function, pain levels, mood-disorders, auto-immunity and many other symptoms

I slowly increase the dose of bee venom used - to the equivalent of 10 stings twice weekly

To my knowledge, the cleanest source of bee venom: Dr. Janos Koermendy-Racz, Hungary



- Forskning visar att både bigift (bee venom) och dess huvudkomponent **melittin** uppvisar en stark antimikrobiell aktivitet mot *Borrelia burgdorferi*, bakterien som orsakar borrelios (Lyme disease). Melittin har visat sig vara särskilt effektivt för att döda spiroketer (Borrelia-bakteriens aktiva form) och bryta ner dess olika morfologiska former in vitro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Socarras, K. M., Theophilus, P. A., Torres, J. P., Gupta, K., & Sapi, E. (2017). Antimicrobial activity of bee venom and melittin against Borrelia burgdorferi. *Antibiotics*, *6*(4), 31.
Lyme disease is a tick-borne, multi-systemic disease, caused by the bacterium *Borrelia burgdorferi*. Though antibiotics are used as a primary treatment, relapse often occurs after the discontinuation of antimicrobial agents. The reason for relapse remains unknown, however previous studies suggest the possible presence of antibiotic resistant Borrelia round bodies, persisters and attached biofilm forms. Thus, there is an urgent need to find antimicrobial agents suitable to eliminate all known forms of *B. burgdorferi*. In this study, natural antimicrobial agents such as *Apis mellifera* venom and a known component, melittin, were tested using SYBR Green I/PI, direct cell counting, biofilm assays combined with LIVE/DEAD and atomic force microscopy methods. The obtained results were compared to standalone and combinations of antibiotics such as Doxycycline, Cefoperazone, Daptomycin, which were recently found to be effective against Borrelia persisters. Our findings showed that both bee venom and melittin had significant effects on all the tested forms of *B. burgdorferi*. In contrast, the control antibiotics when used individually or even in combinations had limited effects on the attached biofilm form. **These findings strongly suggest that whole bee venom or melittin could be effective antimicrobial agents for *B. burgdorferi;*** however, further research is necessary to evaluate their effectiveness in vivo, as well as their safe and effective delivery method for their therapeutic use.
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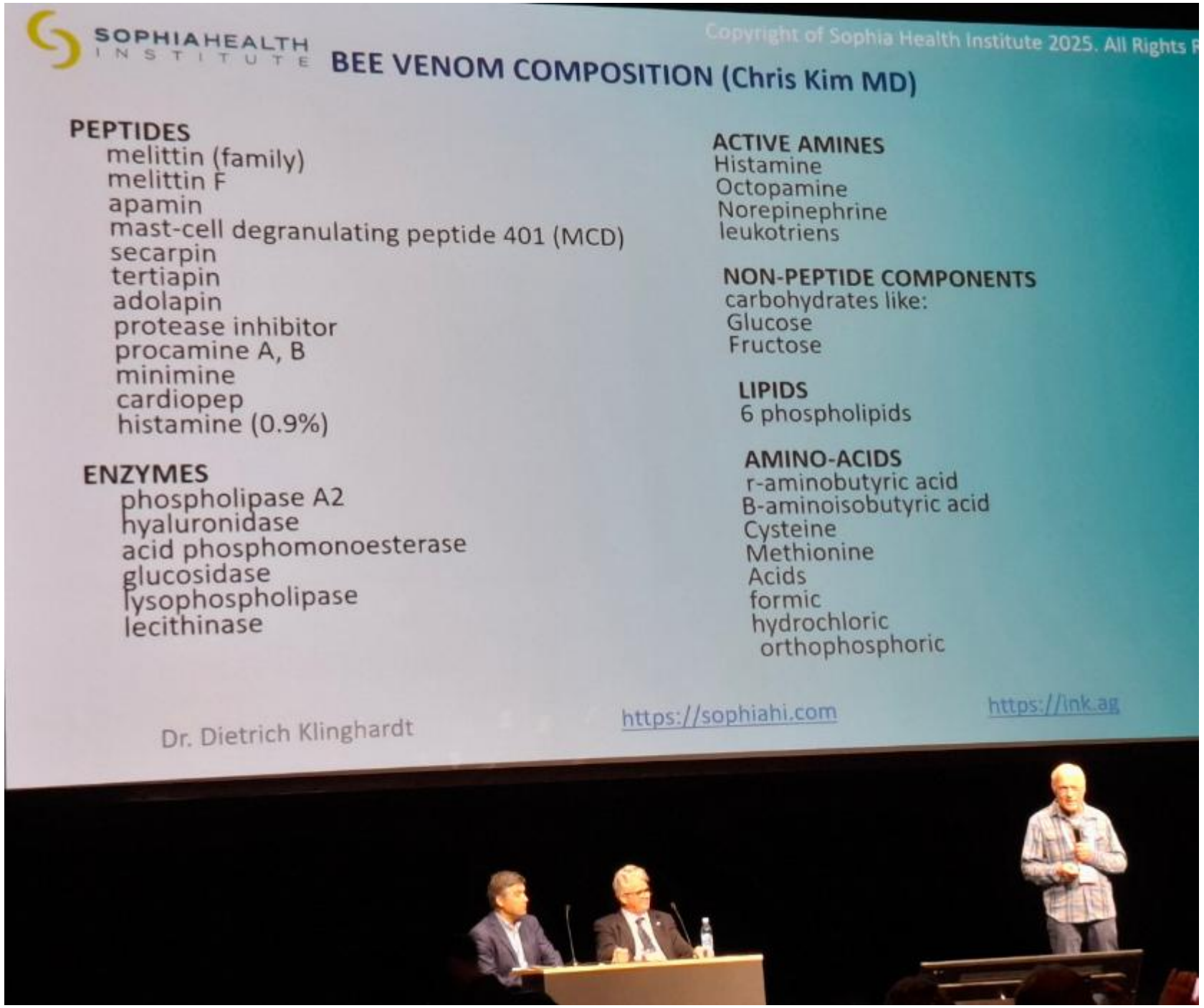
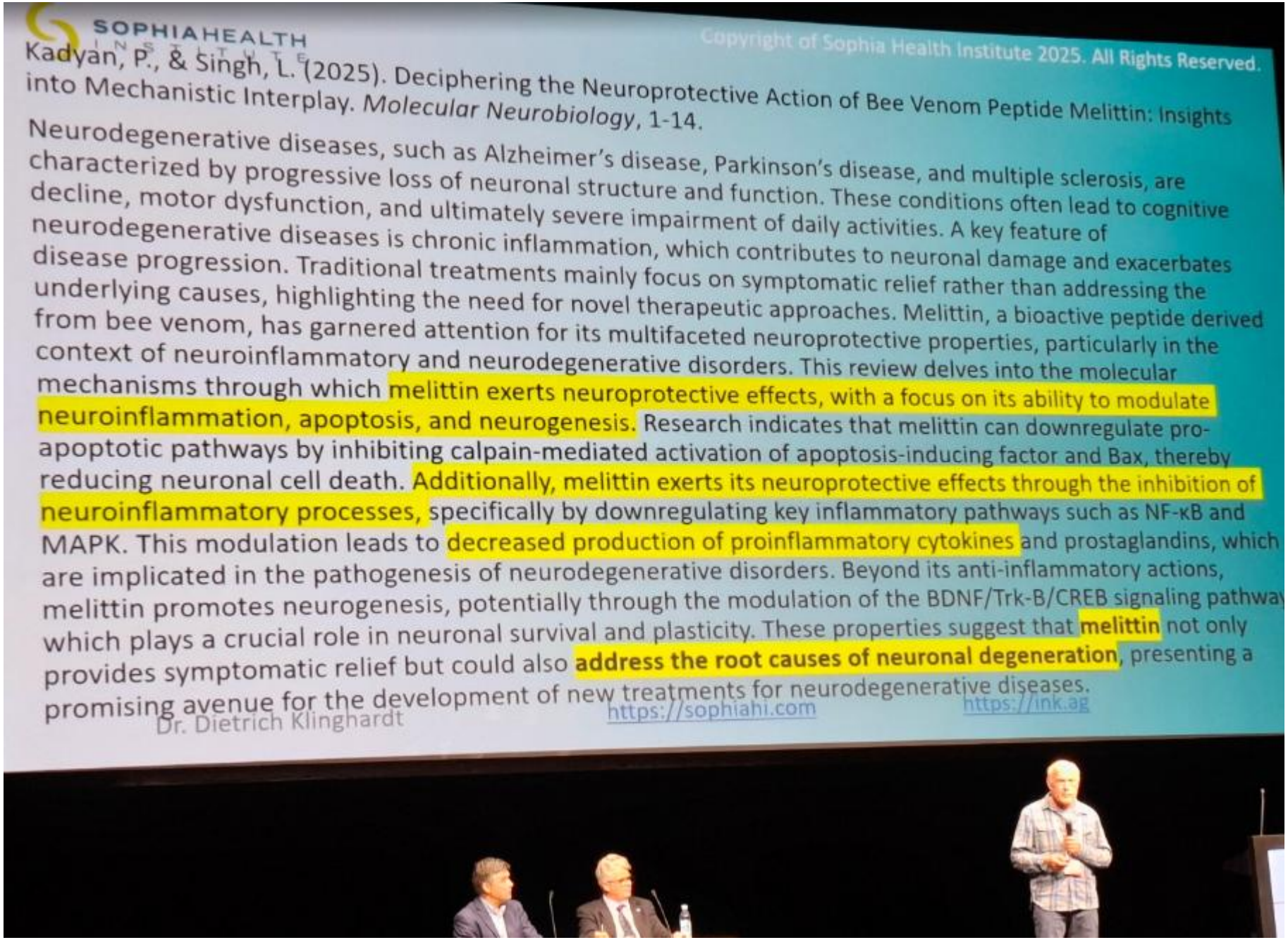
APIMONDIA 2025



Bi-giftets olika delar



Melittin

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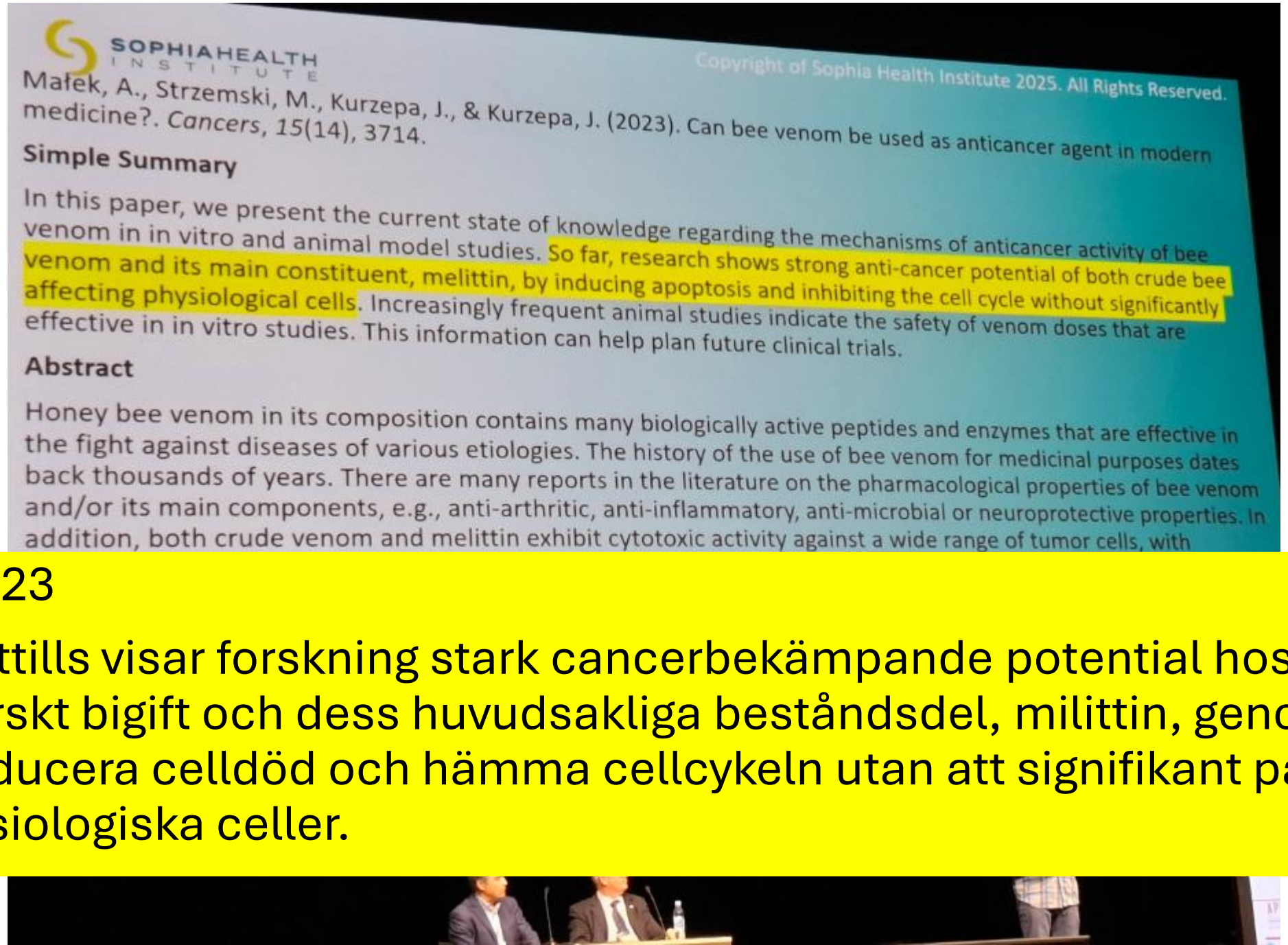
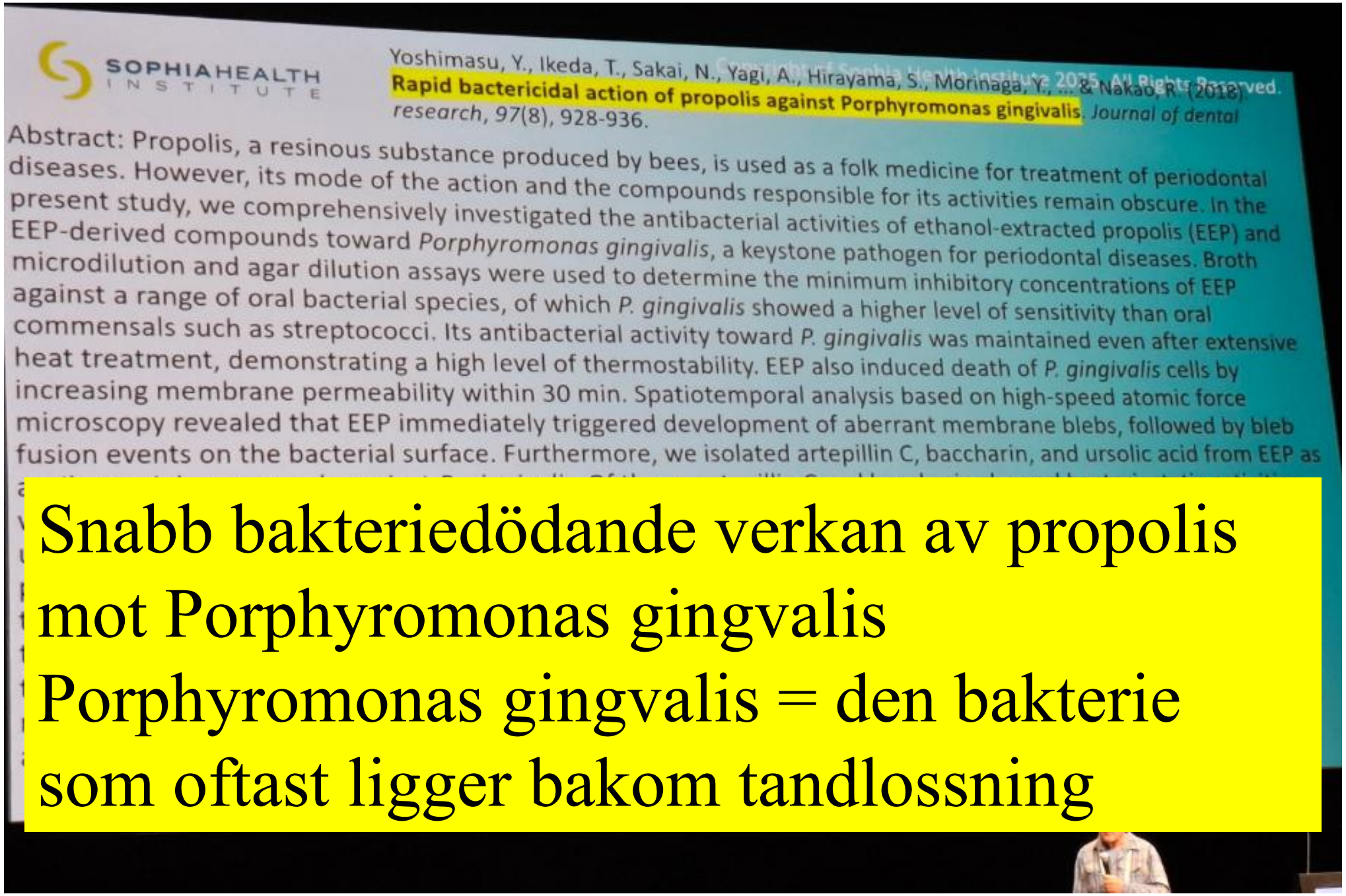
degeneration



2023

Hittills visar forskning stark cancerbekämpande potential hos både färskt bigift och dess huvudsakliga beståndsdel, milittin, genom att inducera celldöd och hämma cellcykeln utan att signifikant påverka fysiologiska celler.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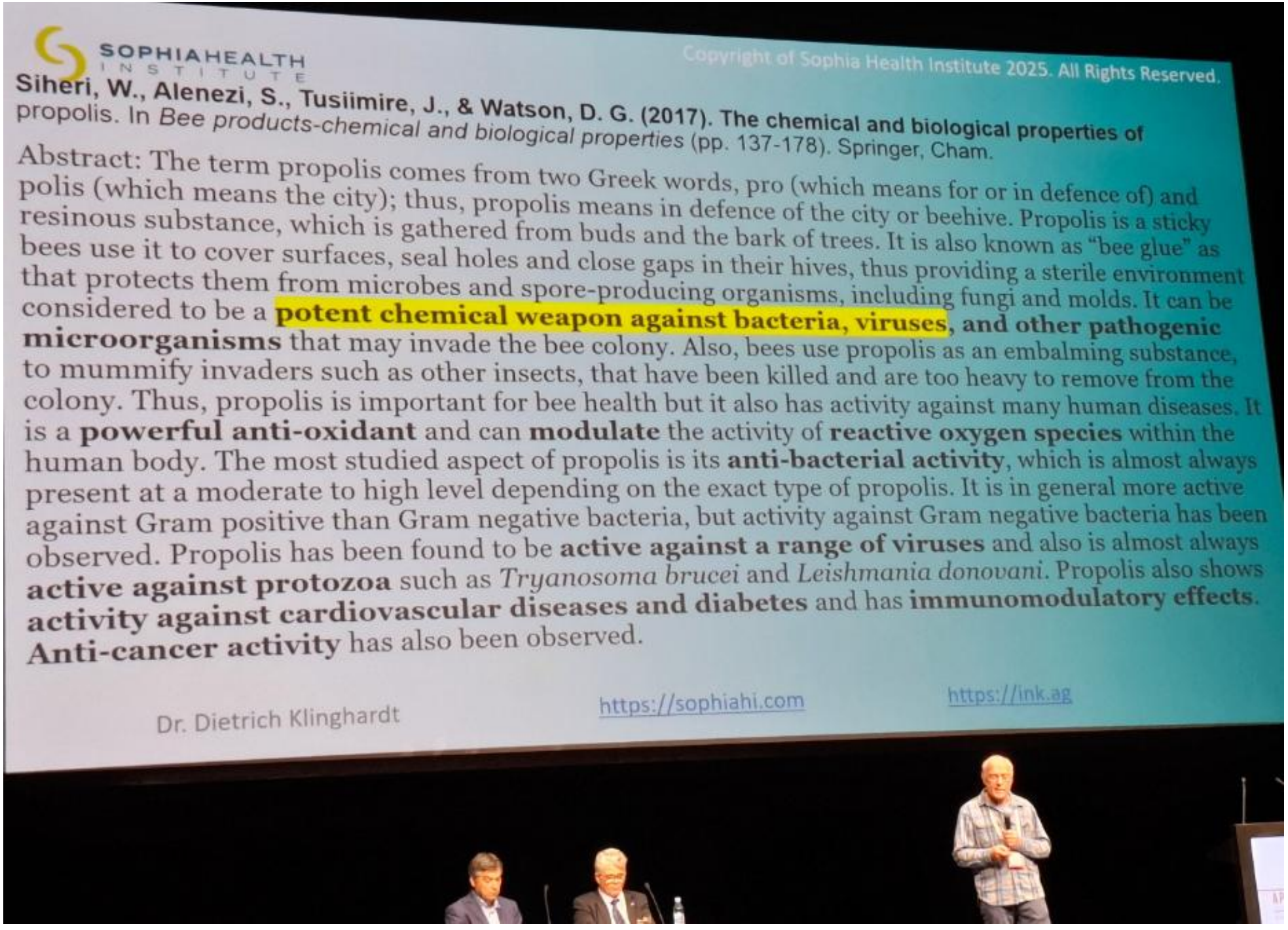
Yoshimasu, Y., Ikeda, T., Sakai, N., Yagi, A., Hirayama, S., Morinaga, Y., ... & Nakao, R. (2018).
Rapid bactericidal action of propolis against Porphyromonas gingivalis. Journal of dental research, 97(8), 928-936.
Abstract: Propolis, a resinous substance produced by bees, is used as a folk medicine for treatment of periodontal diseases. However, its mode of the action and the compounds responsible for its activities remain obscure. In the present study, we comprehensively investigated the antibacterial activities of ethanol-extracted propolis (EEP) and EEP-derived compounds toward Porphyromonas gingivalis, a keystone pathogen for periodontal diseases. Broth microdilution and agar dilution assays were used to determine the minimum inhibitory concentrations of EEP against a range of oral bacterial species, of which P. gingivalis showed a higher level of sensitivity than oral commensals such as streptococci. Its antibacterial activity toward P. gingivalis was maintained even after extensive heat treatment, demonstrating a high level of thermostability. EEP also induced death of P. gingivalis cells by increasing membrane permeability within 30 min. Spatiotemporal analysis based on high-speed atomic force microscopy revealed that EEP immediately triggered development of aberrant membrane blebs, followed by bleb fusion events on the bacterial surface. Furthermore, we isolated artepillin C, baccharin, and ursolic acid from EEP as
Snabb bakteriedödande verkan av propolis mot Porphyromonas gingvalis
Porphyromonas gingvalis = den bakterie som oftast ligger bakom tandlossning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Siheri, W., Alenezi, S., Tusiimire, J., & Watson, D. G. (2017). The chemical and biological properties of propolis. In Bee products-chemical and biological properties (pp. 137-178). Springer, Cham.
Abstract: The term propolis comes from two Greek words, pro (which means for or in defence of) and polis (which means the city); thus, propolis means in defence of the city or beehive. Propolis is a sticky resinous substance, which is gathered from buds and the bark of trees. It is also known as "bee glue" as bees use it to cover surfaces, seal holes and close gaps in their hives, thus providing a sterile environment that protects them from microbes and spore-producing organisms, including fungi and molds. It can be considered to be a potent chemical weapon against bacteria, viruses, and other pathogenic microorganisms that may invade the bee colony. Also, bees use propolis as an embalming substance, to mummify invaders such as other insects, that have been killed and are too heavy to remove from the colony. Thus, propolis is important for bee health but it also has activity against many human diseases. It is a powerful anti-oxidant and can modulate the activity of reactive oxygen species within the human body. The most studied aspect of propolis is its anti-bacterial activity, which is almost always present at a moderate to high level depending on the exact type of propolis. It is in general more active against Gram positive than Gram negative bacteria, but activity against Gram negative bacteria has been observed. Propolis has been found to be active against a range of viruses and also is almost always active against protozoa such as Tryanosoma brucei and Leishmania donovani. Propolis also shows activity against cardiovascular diseases and diabetes and has immunomodulatory effects. Anti-cancer activity has also been observed.
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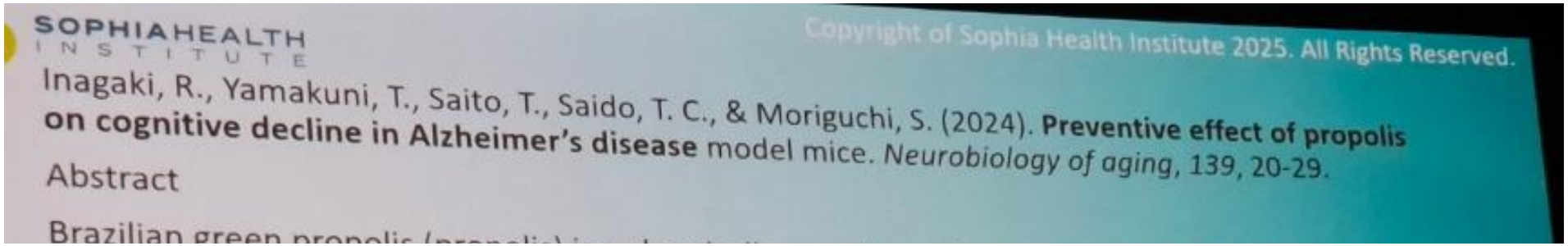
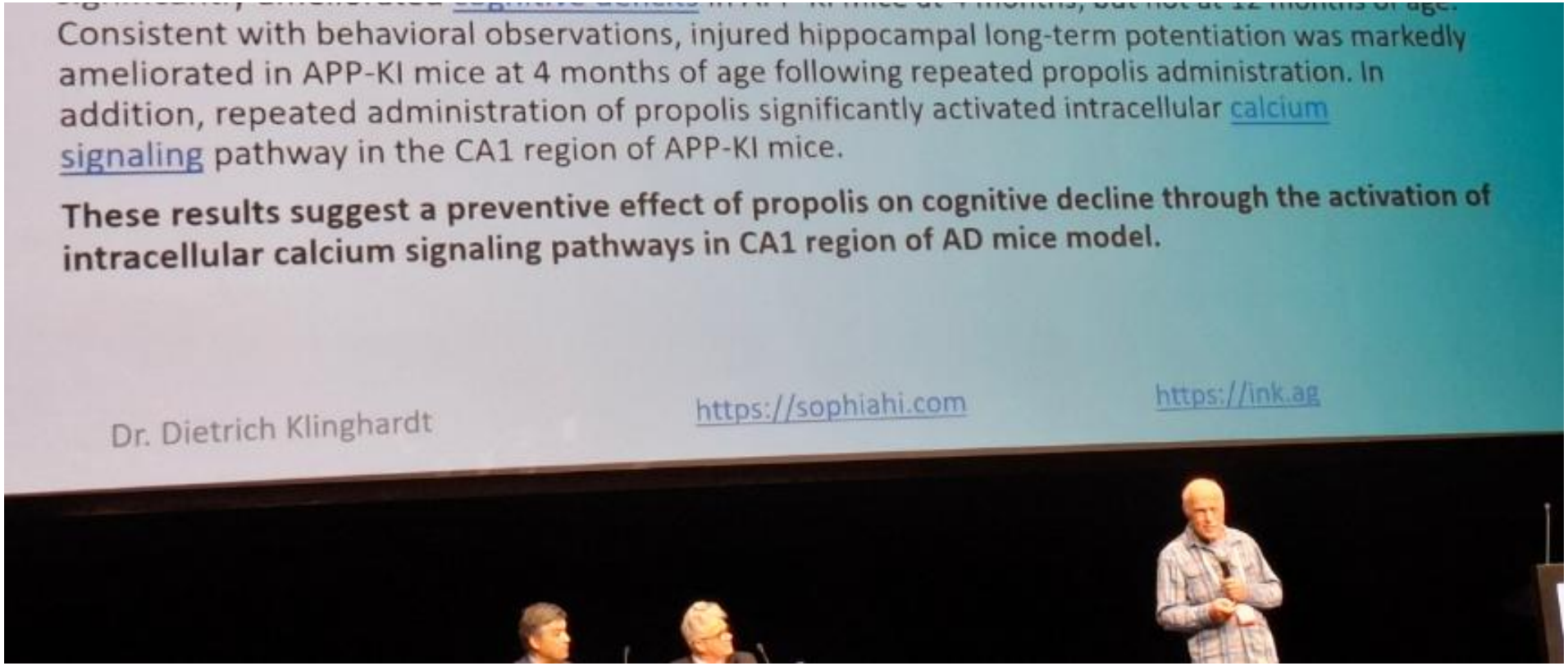


Dessa resultat tyder på en förebyggande effekt av propolis på kognitiv nedgång (demens) genom aktivering av intracellulära calcium signalvägar i CA1-regionen hos AD-mössmodeller.



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- Necip, A., Demirtas, I., Tayhan, S. E., Işık, M., Bilgin, S., Turan, İ. F., ... & Beydemir, Ş. (2024). Isolation of phenolic compounds from eco-friendly white bee propolis: Antioxidant, wound-healing, and anti-Alzheimer effects. *Food Science & Nutrition*, *12*(3), 1928-1939.
- Zellagui, D. R., Mokrani, E. H., Allam, A., Ozturk, M., Bensouici, C., & Zellagui, A. (2025). Unravelling Chemical Profile, Antioxidant, Anti-Alzheimer and Antimicrobial Potentials of Three Propolis From Northeastern Regions of Algeria: In Vitro and In Silico Evaluation. *Chemistry & Biodiversity*, 22(5), e202402684.
- Liu, Y., Wu, Z., Zhu, A., Nakanishi, H., Ni, J., Zhong, X., ... & Wu, S. (2017). Brazilian green propolis improves cognitive functions and modulates systemic cytokines in elderly people living at high altitude. *Journal of the Neurological Sciences*, 381, 678-679.
- Ito, T., Degawa, T., & Okumura, N. (2023). Brazilian green propolis prevent Alzheimer's disease-like cognitive impairment induced by amyloid beta in mice. *BMC Complementary Medicine and Therapies*, *23*(1), 416.

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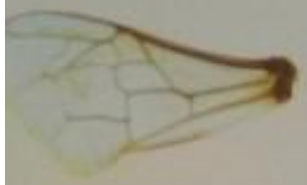
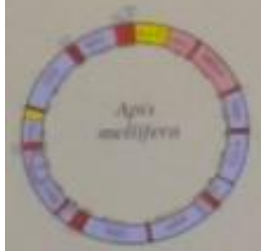
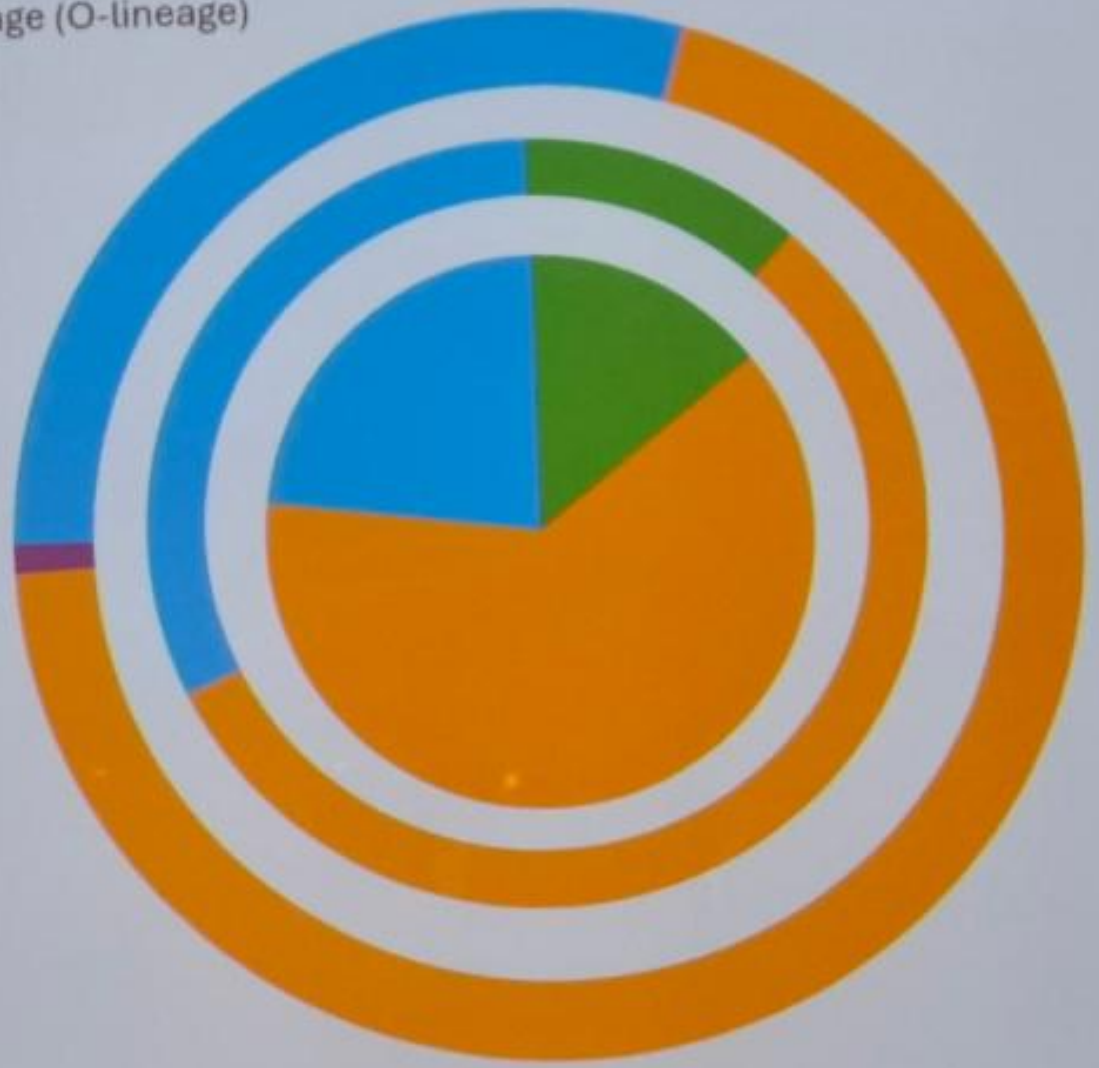
Olika underarter av bi





- Western European lineage (M-lineage)
- Eastern European lineage (C-lineage)
- African lineage (A-lineage)
- Middle East lineage (O-lineage)



Morphological lineages

Europe

Lineage M

mellifera

iberiensis

Lineage C

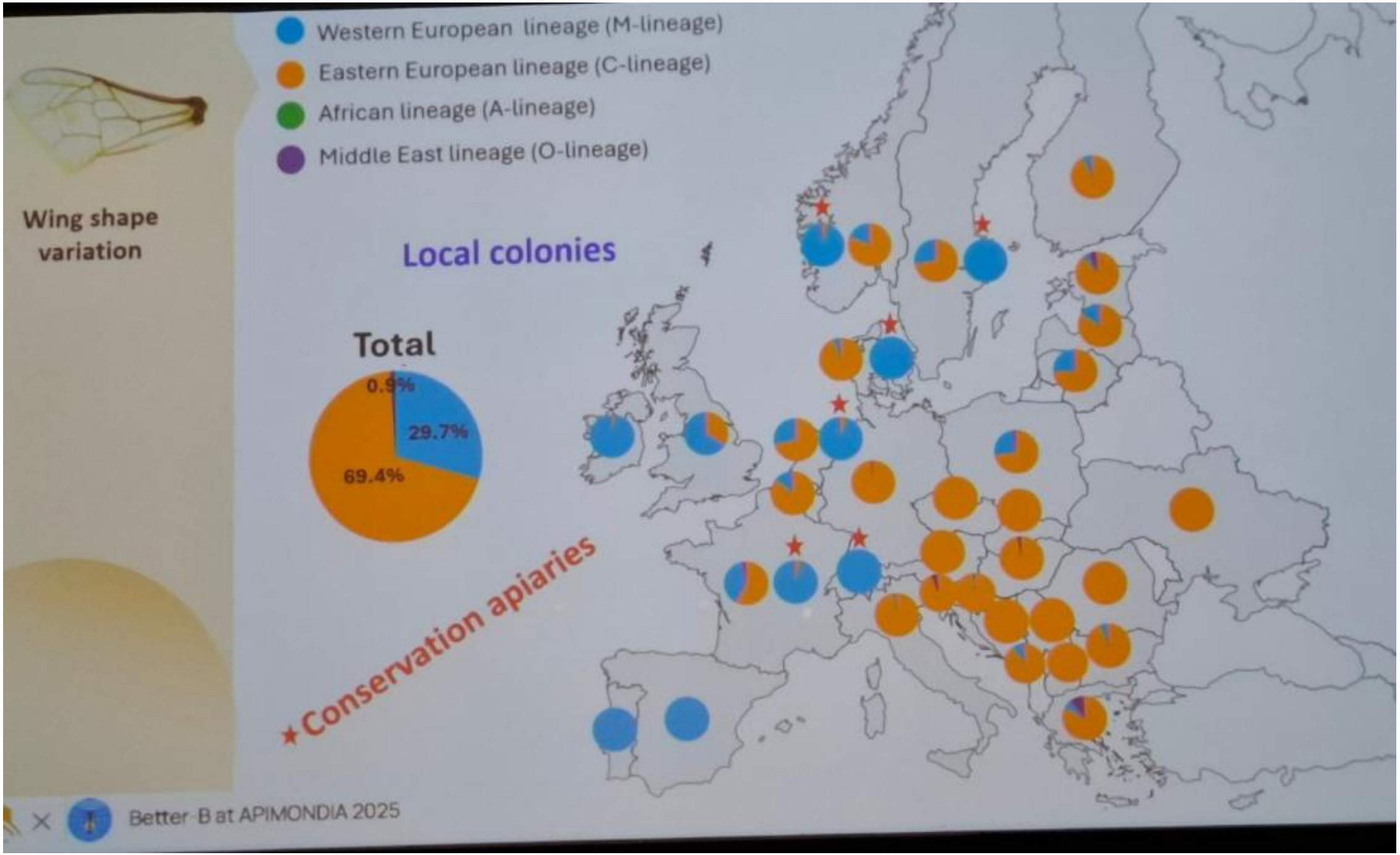
Lineage O

cypria

Lineage A

sicilliana

ruttneri


Western European lineage (M-lineage)
Eastern European lineage (C-lineage)
African lineage (A-lineage)
Middle East lineage (O-lineage)
Wing shape variation
Local colonies
Total
0.9%
29.7%
69.4%
Conservation apiaries
Better B at APIMONDIA 2025

Highlights

- ✓ C-lineage largely dominates the genetic landscape in Europe;
- ✓ African mitochondrial DNA variants were found in many countries, suggesting that beekeepers are introducing queens from outside the traditional C-lineage range;
- ✓ *A. m. mellifera* conservation apiaries were dominated by M-lineage ancestry, as determined by the 3 datasets, suggesting that beekeepers are successfully protecting the dark bee;

Better-B
FOR RESILIENT BEEKEEPING

APIMONDIA 2025
Copenhagen
Denmark


ADDS VALUE
TO HONEY
DEHYDRATOR
/benkabeekeeping
/benka_de


PROUDLY MADE IN
INDIA


KÖNIGIN
KÖNIGIN


Orient Bee Supplies
Orient Bee Supplies
OBS
OBS
OBS
OBS
OBS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LYSON
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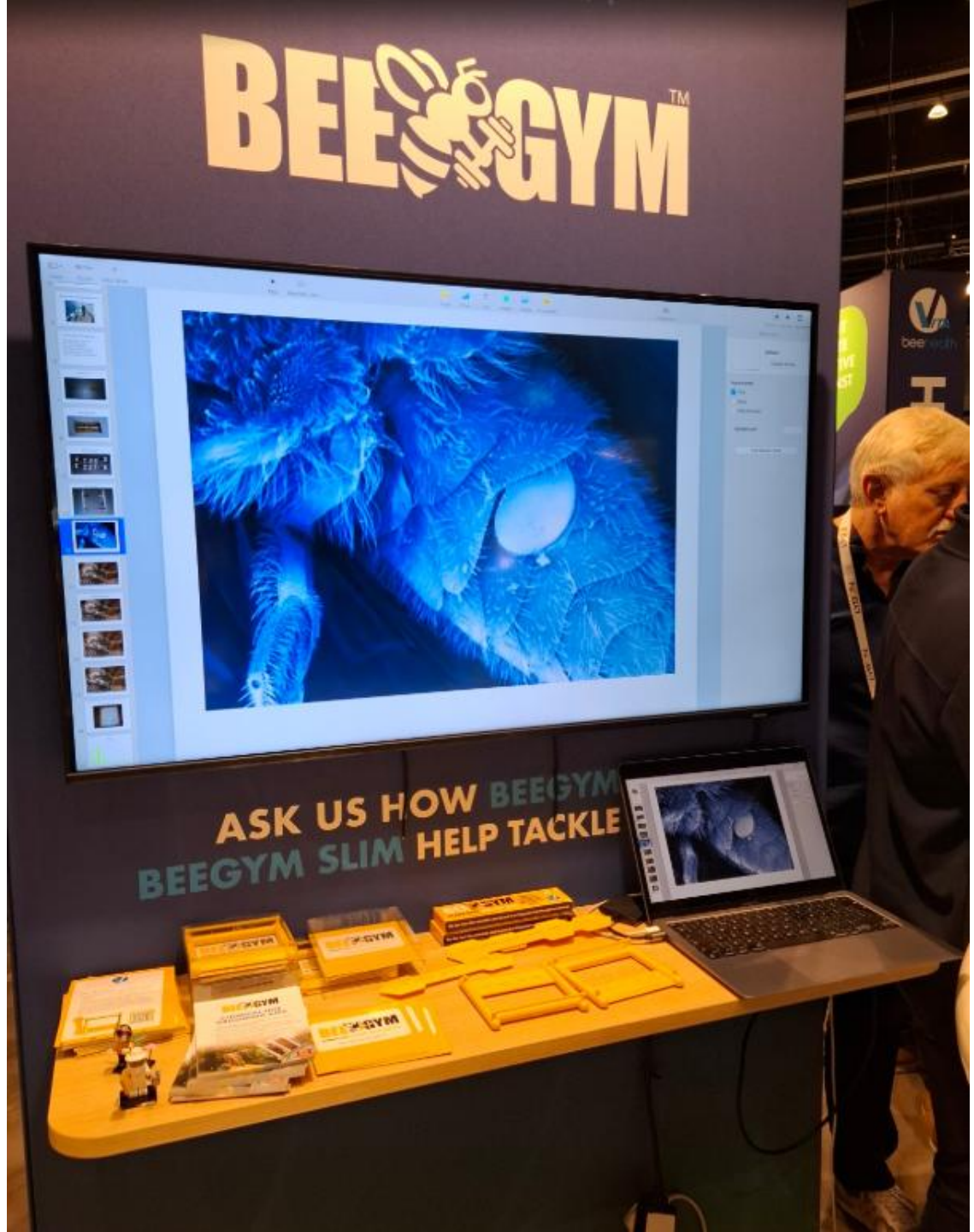
BEEGYM
ASK US HOW BEEGYM
BEEGYM SLIM HELP TACKLE