Neurotech

30 November 2020

Further Success with Preliminary In-vitro Studies

Neurotech International Limited (ASX: NTI) ("Neurotech" or "the Company") is pleased to announce further preliminary results of in-vitro human brain cell studies using its proprietary DOLCE/NTI cannabis leads.

HIGHLIGHTS

- **DOLCE/NTI leads indicate significant increased potency in repairing brain cells when compared to CBD alone**
- **These results have been achieved using 1/5th the dose of CBD alone** (2ug/ml versus 10ug/ml respectively)
- ***DOLCE/NTI leads found to exhibit novel modes of action critical in the treatment and management of Alzheimer's, Huntington's Disease, Multiple Sclerosis and other neurological disorders**
- **DOLCE/NTI leads contains minimal THC (<0.3%) which may result in less onerous regulatory pathway towards commercialisation**
- **Final In-vitro results expected next month**
- **Conference call to be held at 11am AWST today**

Neurotech has been undertaking a series of in-vitro studies to assess the neuro-protective, anti-inflammatory and neuro-modulatory activities of the proprietary DOLCE/NTI cannabis leads which include, CBDA, CBDP and CBDB conducted at three leading independent laboratories – Monash University, University of Wollongong and RMIT University.

Further preliminary results demonstrate that the DOLCE/NTI full spectrum leads work through multiple neuronal mechanisms to provide potent neuro-modulatory and anti-inflammatory activity.

The key conclusions of the study are summarised as follows:

- Studies have indicated that the DOLCE/NTI leads regulate multiple neuronal pathways which are directly involved in cell repair and rejuvenation. These leads indicate significant increased potency in repairing neuronal cells when compared to CBD alone **(128.7% +/- 2.70 at 2ug/ml versus 81.2% +/- 4.255 at 10ug/ml respectively, n=5 95% CI, P<0.05)**. More importantly, concentrations five times lower of the DOLCE/NTI leads are needed to achieve these results when compared to CBD alone (2ug/ml versus 10ug/ml respectively).
- DOLCE/NTI leads work through a novel (different to CBD) mechanism. The DOLCE/NTI leads were shown to work through the powerful anti-inflammatory enzyme known as Arginase -1. Conversely, CBD alone did not produce any significant anti-inflammatory properties.
- DOLCE/NTI leads also increased the presence of beta-tubulin (n=3, 175.8 +/- 1.76 95% CI, P<0.05). Beta-tubulin is an essential protein in the maintenance and healthy survival of brain cells. In these studies, CBD alone did not produce an increase in beta-tubulin. Beta-tubulin is a vital protein in the management of a number of chronic neurological disorders such as Alzheimer's, Huntington's and Multiple Sclerosis.
- These studies provide further data to demonstrate the potential uniqueness of the DOLCE/NTI leads in their mode of action and their differentiation when compared to CBD alone.

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These findings allow Neurotech to fine tune the upcoming clinical program, select the optimum dose and patient parameters.

Most importantly, the DOLCE/NTI leads contain very low levels of THC (<0.3%) which may result in a less onerous regulatory process and therefore a quicker path to commercialisation.

“These preliminary trial results continue to be very encouraging, in particular the unique mode of action of our strains compared to CBD alone,” said Brian Leedman, Chairman of Neurotech. “These results indicate that the DOLCE/NTI leads may have a broader application in relation to the management and treatment of a number of neurological disorders”.

Final results from the in-vitro trials are expected to be received next month.

CONFERENCE CALL

Chairman, Mr Brian Leedman, will take part in a Q&A session regarding today’s announcement detailing further success with preliminary in-vitro studies today at 11am AWST. Please dial in using the link below:

https://us02web.zoom.us/webinar/register/WN_xpNNQt8mTmefjFJbfeYr6g

Authority

This announcement has been authorised for release by the Board of the Company.

Further Information

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About Neurotech

Neurotech International Limited is a medicinal cannabis company conducting clinical studies to assess the neuro-protective, anti-inflammatory and neuro-modulatory activities of our proprietary DOLCE/NTI cannabis strains which include CBDA, CBDP and CBDB. The licensed strains contain < 0.3% THC providing a clearer pathway to regulatory approval as compared to all other cannabis companies that contain far higher levels of THC. Neurotech is also commercialising Mente, the world’s first home therapy that is clinically proven to increase engagement and improve relaxation in autistic children with elevated Delta band brain activity. For more information about Neurotech and Mente Autism please visit:

http://www.neurotechinternational.com
http://www.mentetech.com

Annexure A

For the main MTT assays sample n=5. In the final study n=8
For the Beta Tubulin analysis sample n=3. In the final study n=6

Analysis carried out:

Raw Data - Beta Tubulin Analysis
Relative change from differentiation

1. 175.71
2. 172.89
3. 179.01

N=3 Independent replicates
Sum: 527.6
Mean: 175.86
Std Margin of Error: 1.765
Confidence level of >95%

Raw Data Mitochondrial Output Assays – optical density %

2ug/ml	10ug/ml
DOLCE/NTI	CBD #1
1. 133.56	91.49
2. 131.55	72.58
3. 134.50	81.54
4. 124.74	71.86
5. 120.60	90.99
N=5 independent replicates	N=5 Independent replicates
Sum: 644.95	Sum: 408.46
Mean: 128.75.	Mean: 81.2
Std Margin of Error: 2.704.	Std Margin of Error: 4.255
Confidence interval of >95%	>95% CI

Assays carried out to date include:

- Mitochondrial output assay, neuronal responses assessments to basal and excitotoxicity Assessments of the effects of DOLCE/NTI strains on neurons (with and without glutamate).
- Assessments of increases in expression of Beta Tubulin (neuronal cells)

Assays currently underway:

- Wider dosing studies in MTT assays, pro- and pre- inflammatory stimulation studies (IL-1B and IFNy)
- Assessments of anti-inflammatory markers
- Assessments in pro-inflammatory conditions (iNOS marker)
- Further staining studies of microglia for activation state markers (iNOS – COX2) and proliferation.
- Further studies relating to mode of action

Studies Details:
Human derived Microglial and Neuronal cells have been used in all these studies - specific test conducted include: Mitochondrial Testing Output assay (MTT) assays, BV2 assays, Multiplex assays, Excitotoxicity assay, Beta Tubulin expression assays, pre- and pro inflammatory analysis, Hoescht and Arginase expression assays. These were all conducted in accordance with international standards.

Literature:
Published literature states that the reduction in the expression of beta tubulin is implicated in the development of Alzheimer's Disease and many other neurological diseases.

Microtubule Reduction in Alzheimer's Disease and Aging Is Independent of τ Filament Formation
Adam D. Cash,* Gjumrakch Aliev,† Sandra L. Siedlak,* Akihiko Nunomura,‡ Hisashi Fujioka,* Xiongwei Zhu,* Arun K. Raina,* Harry V. Vinters,§ Massimo Tabaton,¶ Anne B. Johnson,‖ Manuel Paula-Barbosa,** Jesus Avíla,†† Paul K. Jones,‡‡ Rudy J. Castellani,*§§ Mark A. Smith,* and George Perry*

Enhancing microtubule stabilization rescues cognitive deficits and ameliorates pathological phenotype in an amyloidogenic Alzheimer's disease model
Juan Jose Fernandez-Valenzuela, Raquel Sanchez-Varo, Clara Muñoz-Castro, Vanessa De Castro, Elisabeth Sanchez-Mejias, Victoria Navarro, Sebastian Jimenez, Cristina Nuñez-Diaz, Angela Gomez-Arboledas, Ines Moreno-Gonzalez, Marisa Vizuete, Jose Carlos Davila, Javier Vitorica & Antonia Gutierrez

The Loss of α- and β-Tubulin Proteins Are a Pathological Hallmark of Chronic Alcohol Consumption and Natural Brain Ageing
Wajana L. Labisso,1,2,† Ana-Caroline Raulin,1,3,† Lucky L. Nwidu,1,4 Artur Kocon,1 Declan Wayne,1 Amaia M. Erdozain,1,5,6 Benito Morentin,7 Daniela Schwendener,1 George Allen,1 Jack Enticott,1 Henry K. Gerdes,1 Laura Johnson,1 John Grzeskowiak,1 Fryni Drizou,1 Rebecca Tarbox,1 Natalia A. Osna,8,9 Kusum K. Kharbanda,8,9 Luis F. Callado,5,6 and Wayne G. Carter1,*

Tubulin mutations in brain development disorders - including Multiple Sclerosis
Jayne Aiken Georgia Buscaglia A. Sophie Aiken Jeffrey K. Moore Emily A. Bates

Increase in beta-tubulin modifications in the neuronal processes of hippocampal neurons in both kainic acid-induced epileptic seizure and Alzheimer's disease. Hang Thi Vu, Hiroyasu Akatsu, Yoshio Hashizume, Mitsutoshi Setou & Koji Ikegami