



RESEARCH & DEVELOPMENT 2022

PRINCIPLES & OBJECTIVES

Our core focus is to develop novel ingredients & protocols that have broad impact on specific need-states, and the biological homeostasis of our consumers, while also modulating 5-HT_{2A}, CB1/ CB2/ GPR55/ TRPV1 (and other) receptors & their binding molecules. These improvements include balancing of the glutamatergic & ECS systems, efficacy of receptors/agonists, speed to action, long term potentiation (LTP), bioavailability, etc. Key areas of R&D are effective delivery formats, co-extraction, fermentation & metabolites, use of botanicals for a full entourage effect, effective need-state stacks, specific myco strains & their whole plant constituents for maximum ***Therapeutic Outcomes for Consumer Indications***.

Our tools (plants & fungi) are based in both current science as well as the principles of Mesoamerican, TCM & Ayurvedic Medicine, they include: organic botanicals, **Amanita Muscaria**, **Salvia Divinorum**, **Banisteriopsis Caapi**, **Morning Glory Seeds (Ergoline Alkaloid, /D-lysergic acid amide (LSA), Psilocybin, Hemp**, additional alkaloids (baeocystin, norbaeocystin, β -carbolines, aeruginascin, norpsilocin and psilocin), neurotransmitter **Anandamide/AEA**, fatty acids, terpenes, enzymes, theobromine, FAAH inhibitors, GABA, glutamate, and many more. Our research partner, **ISU's (Idaho State University) Psychopharmacology Lab**, is capable of handling Schedule 1 Drugs (Psilocybin, MDMA, 5 MeO-DMT) & is a well equipped state-of-the-art Zebrafish Preclinical Drug Discovery Lab. Zebrafish are valuable biomedical models & our ISU lab will be able to run literally hundreds of protocols per week to ensure speed-to-outcome. The Toad sees a huge market opportunity in "post therapeutic" clinical microdosing products sold through targeted channels.

Blue Toad Innovation Lab



CONSUMER NEED-STATE PRODUCTS

BRAIN™
PAIN™
SLEEP™
MENOPAUSE™
BELLY™

HORMONE™
ENERGY™
IMMUNE™
CALM™
JOINTS™

PTSD™
PMS™
WEIGHT™
TESTO MEN™
MIGRAINE/ RELIEF™

FORMATS

Capsules/ Vegan Softgels
Stick Packs/ Grab & Go Sachets
Soft Chews
Fermented Teas
Fermented Tinctures
Chocolates

CLINICAL MICRODOSE PROTOCOLS - PSILOCYBIN/ AMANITA MUSCARIA

Psilly**CHAKRA™**
Psilly**MICRO™**
Psilly**BRAIN™**
Psilly**MOOD™**
Psilly**PAIN™**
Psilly**BELLY™**

FORMATS

Dissolvable Thin Strips
Micro-Screen Portable Nebulizer
Capsules
Vegan Softgels

BIOSCIENCE TRACK

NeuroAEA™

Compound - A fatty acid stack that includes anandamide, myristica fragrans (Myristicin), CBGA & b-caryophyllene.
Primary Indications - Major depressive disorder, pain modulation, appetite/ obesity, neurogenesis.

NeuroAEA™ is a first to market proprietary Anandamide fatty acid blend that includes a Nutmeg Oleoresin (Myristica fragrans) that contains dozens of terpenes and phenylpropanoids, including b-caryophyllene, d-pinene, limonene, d-borneol, l-terpineol, geraniol, safrol, and myristicin (believed to be the main chemical constituent modulating FAAH). Anandamide (N-arachidonylethanolamine) is a key Fatty Acid Neurotransmitter derived from the non-oxidative metabolism of eicosatetraenoic acid, an essential Omega-6 Fatty Acid. Anandamide acts as an endogenous ligand of CB1 receptors - the same receptors targeted by the phytocannabinoid Δ^9 -tetrahydrocannabinol (THC) and others. Anandamide has a very short "half life" due to degradation inhibitors like fatty acid amide hydrolase (FAAH). Our unique use of Nutmeg Myristicin tempers FAAH degradation and helps to extend the NeuroAEA™ experience.

Blue Toad™ is scheduled to begin their ZebraFish lab work with **ISU's (Idaho State University)** Psychopharmacology Lab in Q1 2022. Multiple protocols are currently being developed at this time.

Preliminary patents will be filed in early 2022.

NeuroCYBIN™

Compound - Psilocybe cubensis stacks w/ anandamide, CBGA, glutamate, l-dopa, alkaloids, etc.
Primary Indications - Major depressive disorder, pain modulation, obesity, & PTSD, neurogenesis, dementia.

Our research partner **ISU's (Idaho State University)**, will be building protocols with the Blue Toad™ R&D team to develop innovative treatments combining specific **Psilocybe cubensis** strains with 1.5%+ levels of psilocybin & accompanying alkaloids, with specific botanicals, anandamide/AEA, fatty acids, terpenes, enzymes, theobromine, FAAH inhibitors, GABA, glutamate, etc., to achieve the best possible patient outcome.

There is potential for strong IP with patents being filed in Q4 2022.

NeuroAGARIC™

Compound - Amanita muscaria stacks w/ anandamide, CBGA/ CBN, glutamate, morning glory/ LSA, GABA, etc.
Primary Indications - Libido, gut, stress and anxiety, pain modulation, sleep.

Our product research into the potential use of **Amanita Muscaria** in the development of microdose products targeting gut, mood, stress, pain & sleep. Core research is around balancing **Muscimol, Bufotenine, Muscazone & Ibotenic Acid** ratios to achieve desired need-state outcomes. We also believe that balancing the ECS system (with cannabinoids) in relationship with utilizing Muscimol as a GABA (inhibitory neurotransmitter) receptor agonist is key.

There is potential for strong IP with patents being filed in Q4 2022.

PROPRIETARY INGREDIENTS

Telo**NOURISH**[™]

Telomeres are compound structures at the end of our chromosomes. As we age, telomeres shorten and DNA sequencing/ cell replication begins to “falter” resulting in apoptosis or cell death. Telo**NOURISH**[™] is a priority blend of botanicals & phenolic compounds that support the production of telomerase (telomere terminal transferase) enzymes. Some of the compounds include: Carbon60/Fullerenes, Bristlecone Pine Needle Extract, Nicotinamide Riboside/ NR B3, Ergothioneine, Berberine (dihydroberberine), Pterostilbene, Astaxanthin, Xanthohumol, Astragalus Root , Kaempferia Parviflora, and more. We are also researching the “Psilocybin Telomere Hypothesis” & the neuropsychopharmacological effects of psilocybin on genetic aging & telomere attrition.

Cell**NOURISH**®

A full spectrum & proprietary antioxidant blend that supports healthy mitochondria & preventative peroxide damage/ free radical damage while also showing neuroprotective effects. The blend contains cannabinoids, procyanidins/ anthocyanins, theograndins, flavanols, theobromine, chlorogenic acids, catechins/ epicatechins, curcuminoids, quercitrin, aspalathin, stilbenoids & phytoalexin, focused on general wellness and cellular health.

Shroom**NOURISH**[™]

A full spectrum Immunity blend of Organic Raw Cacao Powder (22% Fat), High Vitamin D3 Mushroom Powder, Organic Madagascar Cinnamon Extract, Organic Ashwagandha Extract, Organic Pumpkin Seed Extract, **Immuna**® Patented Mushroom Extract, **Nigellin**® Black Cumin Seed Extract, Canna**NOURISH**[™] Proprietary Cannabimimetic Botanical Blend (Black Pepper, Clove, Nutmeg, Rosemary, Vanilla, Echinacea, Magnolia Bark Extract, Ginger Root) **PurC**® - Vitamin C, Amla Extract Organic Proprietary Mushroom Blend (Reishi, Cordyceps, Chaga, Mesima, Lion's Mane, Turkey Tail, Maitake, Shiitake, Blazei, Poria, Agarikon, Suehirotake, Oyster, True Tinder Polypore, Myceliated Brown Rice), Organic Black Truffle Powder, Vitamin-E, **PANMOL** Plant-Based B-Complex, Zinc-Glycinate, 54 Trace Minerals.

Omega**AEA**[™]

A Proprietary Fatty Acid Blend (linoleic, caprylic, capric, palmitic, oleic, alpha-linolenic/omega (3/6/9) & Astaxanthin used to modulate CB1 & CB2 receptors & support the ECS & 5-HT2A Serotonin systems.

Canna**NOURISH**[™]

A full spectrum hemp extract w/ polyphenols, phycocyanins, phenylethylamine, fatty acids, theobromine, black truffle, palmitoylethanolamide and a full array of plant phytocannabinoids used to modulate the ECS system.

**Blue Toad[™] owns many additional proprietary formulas & protocols that continue to address consumer need-states with functional-foods, nootropic supplements, clinical protocols, RTD beverages & topicals/ beauty.*