Methodology for creation of biologically active lipid-based structures containing various API:

The intricacies of this subject can be as expansive as any field of engineering, but ill make an attempt here to provide a basic architecture that can be used as a platform for exploration. I would highly recommended studying the composition of eukaryotic and prokaryotic cells in advance to gain an understanding of the terminology required to grasp these concepts. Lipid sciences have explored many of the foundational aspects of cellular compounds and the components required to perform certain tasks. Within the cell there are multiple networks and machines participating in collaborative efforts that result in manifestations of various macro-representation. The mechanical nature of these processes has been elucidated in the study of microbiology and specifically since the discovery of the phospholipid uptake and the subsequent development of lipid based drug delivery systems. A large body of data pertaining to liposomal encapsulation has been forming since the 1970s that has assisted in our knowledge of cellular mechanics. This data can educate the reader on scientific attempts to 'hack' into cellular functions through various lipid targeted pathways. Multiple intentions and applications lie within this research but the primary goal is to take manual control over internal cellular processes in order to exploit them to achieve controlled uptake of various API(active pharmaceutical ingredient). The complexities of api delivery are infinite in scope as we enter a modern era of bio-modifications. Targeting drug receptors as well as various signaling pathways and cellular compartments has become the primary goal of recent research. Many lipid based drug vehicles are in development that are able to target sites as well as extend the action of various api. The first commercial application of lipid based drug vehicles was the NuvaRing, with the most recent being the mRNA covid vaccine developed by moderna. Within the scope of these technologies lie many amazing breakthroughs in biological understanding. Lipid based drug vehicles are in their infancy as a technology and I applaud the progress. However, I believe that there is a missing link in our understanding of this complex subject that is preventing our advancement into some of the more useful applications possible. I have developed a system to achieve a variety of previously unexplored outcomes through tens of thousands of rapid trials utilizing various non toxic, yet psychoactive, substances. The most interesting applications are the production of instant acting psychoactive oral and topical substances utilizing exponential fractions of threshold doses of raw api. Liposomal encapsulation touches on this subject slightly but with seemingly no progress towards it's conclusion. The behavior of a drug can be altered on a sliding scale of efficiency based on receptor saturation. In my research I propose multiple theories for several synergistic effects that combine to produce immediate perceptual shifts within seconds of administration. However, the primary assumption is that my methodology produces a substantially higher amount of receptor saturation than any other currently available drug delivery technology. I propose a novel method of lipid based drug delivery that utilizes the process of cellular diffusion and focuses less on particle size, solubility, and other commonly discussed factors in drug uptake. My research has shown that properly solubilized aggregate drug clusters can be pulled or forced through constructed membranes with greater result than nano-tiized particles in dispersed mediums. This mechanism is puzzling but seemingly logical. The extra-cellular compartments are very corrosive and disruptive to all intended behaviors of a drug. Its well known that a drug needs to be protected from this environment but lipid science has failed to address this issue with any applicable technology. I propose that the substance needs to reach the receptor immediately through intercellular pathways that are protected by multi-layered cellular structures. Particle size or dispersion can be ignored almost entirely with this methodology while

achieving 100% cellular bio-availability instantaneously. The common idea has been to entrap drugs in vesicles, liposomes, ethosomes, etc. All of these concepts involve creating a semi-spherical lipid structure that house entrapped nano particles. The different vehicles all fail to create an environment where the drug can safely transfer into the receptor at a high rate. This is why lipid drug delivery technologies have primarily been used to extend circulation and duration of effects and/or target specific areas in the body and cells. Entrapment of drugs within a vehicle seems to be the most efficient form of drug delivery available, the caveat is how that vehicle functions and where the drug is entrapped. The cellular environment operates at a microscopic right above the boundaries where physics cease to function. The cellular world is the smallest space in which visible mechanical concepts can be applied. Therefore, I prefer to take a mechanical engineering based approach to this subject. In other papers I explain why spherical vehicles and nano particles do not function as intended, but this paper will be designed to elucidate the principles involved in creating a novel lipid based vehicle with entirely different features than previous vehicles. The concept of my lipid vehicle is based upon a multi-layered cellular wafer composed of phospholipid bilayers with alternating phospholipid chain tail orientations. The api is contained in the space between the layers and affixed in place by solvent based dissolution into hydrophobic tail arrangements. Unlike liposomal and vesicle based delivery systems, this structure does not react or form into a spherical(compartment containing) at any point. Instead, this system is designed to create a uniform microscopic wafer of cellular tissue that functions similar to a vehicle designed to penetrate the atmosphere(yes, the earth is a macro-cell that exhibits characteristics representative of our biology). This vehicle is designed to disintegrate carefully upon administration and produce a blanket of cellular tissue that covers an extra-cellularly exposed receptor site with an oil soluble phospholipid interface designed to dissolve and bond into the tissue present at the outermost layer of the cell. The api can then be delivered at this interface and/or carefully migrated through deeper layers of the vehicle. Once the wafer of tissue is secured to a cellular site the processes that occur can be performed in simulated intracellular compartments. The wafer can contain up to 7 layers in its current design iteration and each layer can contain varying concentrations and/or types of api. The first layer that attaches is designed with solvent-melted phospholipid heads and water soluble tails facing in the outer orientation. This allows a hydrophobic api to be secured into positions next to the heads and make contact with a receptor immediately while bonding into the cellular surface containing the receptor. The inner surface of the first layer(inner meaning, the layer that is not directly contacting the cellular interface)contains a hydrophilic orientation that contains no api and mimics the outer layer of a eukaryotic cell. This inner layer is then attached to another layer that contains an api dispersed through a hydrophobic surface and is backed by a hydrophilic and water inflated surface with no api. This same alternating pattern can occur for up to 7 layers. Or it can function with as low as 4 layers and be layered and/or internally coated with sugar phosphate and/or api loaded high lecithin medium chain triglyceride solutions. As this wafer docks with a cell it is able to transfer api through these layers in the intracellular environment created between the interface and the outermost layer. Api is layered throughout the structure by carefully altering the solubilities of pre-constructed solvent melted layers to facilitate migration of api into position amongst their appointed head/tail configurations. This migration is achieved through heat and lipid dissolution with simultaneous api loading and rapid tail/head re-orientations to lock api migratory patterns. Once heat and excess solvent are removed these migratory patterns re-initiate, unless the product is flash frozen to sub-zero temps immediately after creation. The migratory patterns can be designed to be halted prior to consumption via other methods as well to extend product shelf life. However, the simplest products will essentially deactivate themselves by

carrying out their full api migratory patterns and subsequently deteriorating due to osmotic degradation, adsorption, and various processes related to solubilities and membrane fluidity. Procedures to lengthen shelf life will be discussed in future articles but this guide will primarily focus on simple cellular wafers for edible consumption with a 2-10 day deterioration period and some more complex topical wafers with a 2 month shelf life. The docking abilities and api migration patterns are all carefully crafted to create an environment where any surface level and/or subsurface drug receptor can be artificially saturated with any quantity of substance while avoiding all metabolic detection or processing. The api can safely and completely migrate with no exposure to extra-cellular environments. These wafers can be created very easily by anyone if instructions are carefully followed. Instructions can also be modified if one understands the underlying principles well enough. The end result is an edible or topical substance with instant effects that can carry potency and receptor saturation levels exponentially higher than any previously conceived drug delivery system. The outlined formula will be using delta 8 thc for legal and ethical reasons. However, these techniques can be adapted to suit any hydrophobic api. Hydrophilic api require a different process that will be covered in future articles. To perform this, you will need access to a set of very basic equipment that is contained in most home kitchens. The entire process can take 3-6 hours depending on scale and the complexity of final application. I will cover the incorporation of this formula into various mediums that include culinary and topical administration. Liquids, gels, and powders will be covered as mediums for administration. I dont seek to give culinary advice so I wont include any recipes, but I will explain the precautions and procedures required to incorporate these mediums into culinary applications while preserving/facilitating the intended performance of the system. All mediums can be consumed directly with similar effects to each other and their incorporated final products. Equal performance can be achieved in every medium with the right adaptation and I will attempt to cover all the adaptations I'm aware of. Please feel free to take this formula and find new adaptations, just please share them back with me. Most of the procedural material will be presented in video form due to the tactile nature of the process. But, I will attempt to elucidate the mechanics of the procedure briefly. Construction of cellular wafers can be accomplished in virtually any environment, but a small lab is preferable. Sealed flasks and magnetic stirred hot plates will produce a more consistent product than a mason jar and a pot of boiling water, however, both will work. Multi-layered wafer construction is accomplished by bonding multiple cellular formulae together in a single medium. These formulas are all composed of similar ingredients but contain different lipid arrangements and linkages to surrounding layers. The goal of the wafer is to attach to a cell and unload it's entire payload onto a protected receptor environment. The wafer is in a state of equilibrium upon administration to tissue and it becomes unbalanced upon contact with a hydrated phospholipid(any cellular surface). The unbalanced wafer can will then dump its payload through a process of api migration similar to a ph induced precipitation. The unbalancing occurs due to the outer solvent melted layer bonding with the cell and absorbing its water content. This causes a phase transition at the interface that creates a chain reaction in the head tail orientation of the entire wafer. Then, the equilibrium achieved by careful api loading and solubilization of head/tail arrangements is disrupted. The api isn’t soluble in the wafer at this point and will subsequently migrate into the cellular interface. The outermost layer of the wafer will inevitably leak some api as well, but the goal is to direct all the api down to the interface. At this point the wafer will begin to deteriorate and detach from the cell, but the api will remain attached. The integrity of the wafer can be infinitely altered to control saturation times prior to metabolic elimination. Weak wafers create short acting substances while strong wafers create long acting substances. Integrity modifications are achieved through

incorporation of other materials(i.e. cholesterol, chitosan, peg, oils), as well as through variations of inter-membrane solubilities. The base ingredients are water, lecithin, ethanol and/or isopropyl alcohol, and the api(s), and we will start with the preparations of each ingredient.