



# The Future of Health Innovation

Ushering in a new era of biomedical innovation through alternative financing channels that accelerate speed to market to bring health breakthroughs in the hands of patients.

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Aevolve reinvents the health innovation ecosystem by creating a powerful channel that turns patients into active decision-makers, and redesigns the whole process of drug development financing to support small and medium innovators and favor speed to market. It does this while creating access for investors through a securitization pathway designed for exposure to blockchain-derived assets.

It empowers patients as active stakeholders in the ecosystem through cryptoasset ownership, payer benefits and participation in a health innovation marketplace, Biospheres.

The protocol directs new capital towards groundbreaking medical and biotech projects through an alternative financing option via a first-of-its-kind wrapped certificate traded on the Swiss Stock Exchange (The SIX).

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## Abstract

Scientific research and discovery in the healthcare industry is a risk-filled process where success in outcomes is difficult to predict. This uncertain route to discovery contributes to the complexity of the investment culture around it and how leverage and incentive mechanisms play out in the sector. This unique quality of healthcare R&D is also a primary factor contributing to the sector's productivity issues, which are becoming an ever-rising concern in the industry and its markets, affecting cost and future access to new innovations. A balance needs to be achieved between investment and predicted rate of return to sustain the industry's robust future and assure patients access to continuously improving treatments.

Productivity, when measured by biopharma's industry-wide IRR (Internal Rate of Return), has been experiencing a decline since the mid-20th century. Returns reached their most disappointing numbers to date over the last nine years, with large cap companies' consolidated results falling to their lowest level. Productivity dropped from 10.1% in 2010 to 5.5% in 2014 to 1.9% in 2018. The rate is moving towards a projected zero (0%) by 2020. <sup>[1,2]</sup> It is predicted that IRR will continue to slide into negative rates; hence investors will not recoup their initial capital outflow, without an effective intervention.

Many approaches have been suggested, spanning investment strategy shifts and public funding. However, it has been proposed that a change in the business model would have the biggest impact in reversing the trend. <sup>[3]</sup>

We are advocating for a change in the biopharma space business model. Incentives in the industry need to be realigned in order to drive significant momentum behind innovation. Two related approaches need to come together in a single system: the need for drugs and systems that will benefit the human population at large with a low return on investment, and the high-technology breakthrough innovations that will produce the future pharmaceutical drugs and devices that will generate high return on investment \$1:1000 at an initial high risk.

With emerging financial technologies such as blockchain, it is possible to reevaluate the business model and introduce new processes and features that decouple the financing and decision-making processes to encourage open innovation. Through asset ownership and novel financial instruments, it is possible to build more patient-centric platforms that measure true demand and introduce new means of price discovery.

For the first time, a platform with an estimated USD 1 billion worth of initial secured offerings will be launched, with a patient-centric commerce model and interface. Instead of being considered simply as "payers" in the industry, patients, through cryptoasset ownership, will act as stakeholders who are able to co-determine the direction of scientific research according to their own needs.



Small- to medium-size companies of the type that have been driving innovative research in recent decades will have an opportunity to participate in a new dynamic marketplace where non-dilutive financing opportunities abound. Traditional investors looking for familiar means of access to the blockchain investment space may now avail of a first-of-its-kind wrapped certificate traded on the Swiss Stock Exchange (The Six), which enables participation in this market of direct interaction between patient-consumers and innovative companies.

Capital raised through these alternative channels is designed to speed up medical innovations' ability to commercialize and scale. It directs new funding from both traditional and nontraditional sources into a blockchain-derived system that promotes rapid growth and progression, offsetting the cost-heavy and random process that is slowing the industry and preventing it from meeting a trillion-dollar market of healthcare needs.



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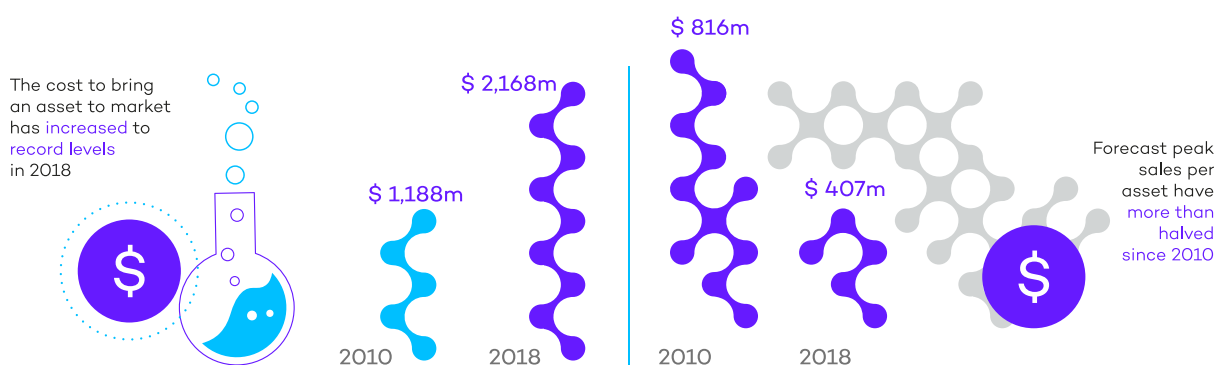


## Introduction

Medical innovation is in a crisis. The biopharma industry has been experiencing a decades-long productivity slump, culminating in consolidated IRR dropping. <sup>[1]</sup> This means an increasingly unfavorable climate for new discoveries to make it to market, eventually resulting in fewer treatment options in the future for patients.

Large amounts of capital continue to be poured into the space. Traditional funding pools, comprised of big pharmaceutical companies, impact investors and venture capital firms, still dedicate massive funding towards drug development projects and other healthcare-related R&D investments. Today, that capital amounts to USD 159.9 billion a year. <sup>[4]</sup>

The difference today is rising costs. The ratio of investment returns versus cost requirements in drug development is now heavily skewed towards the cost side. Di Masi et al estimated that the cost on average to develop a single drug to FDA approval was at USD 1.04 billion in 1997. By 2008, average costs rose to USD 2.56 billion. This means a rate of increase of 8.5% annually. <sup>[5]</sup> This is partly because in the modern development scenario, as technology advances and the number of products increase, the cost to develop each new succeeding drug or create new therapies with incremental improvements becomes higher. Increasing complexity in the supply chain and operations follows, and sets off a cascade of high-cost triggers. It seems counter-intuitive given that in other industries such as Information Technology (IT), new discoveries and developments tend to accelerate other technologies and reduce overall cost. Regulatory, patent laws and other hurdles contribute to the cost burden. For smaller companies, this capital-intensive aspect could easily put them out of business. If the industry continues on its path without identifying new sources of capital, and creating new ways to generate innovation-based revenue outside of the current structure, returns will continue to decrease.



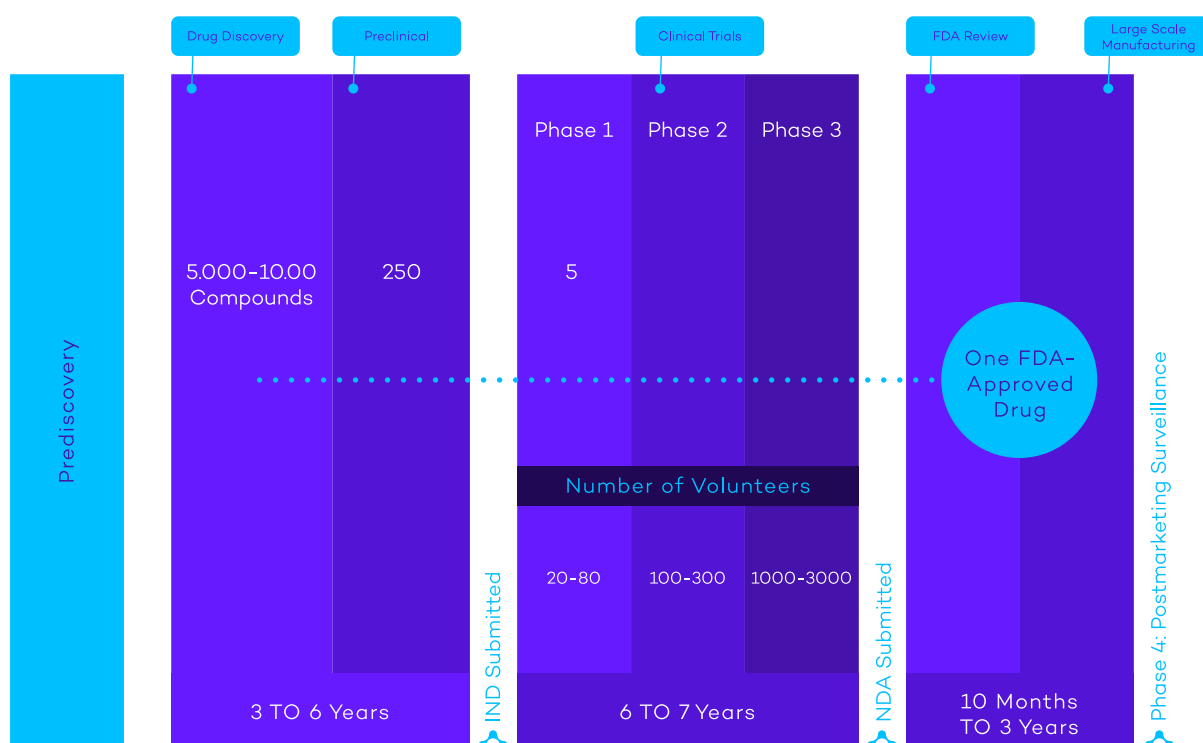
Source: Deloitte Report <sup>[6]</sup>





Strategic selection of investable projects in the biomedical sector has always proven to be challenging with no reliable model for expected return. The failure rate for drug R&D projects is extremely high at 97%. In the US alone thousands of substances are tested with very few reaching FDA approval. This happens in an arc of 10 to 15 years. There is no way to predict which ones will eventually make it to full-scale commercialization. As a result, innovation suffers from a low-yield system resulting from choices of low predictive value made by a limited number of funds. It suffers from opportunities lost because of broken financing and lack of a sustainable model to support years of additional research and testing.

## Drug Discovery and Development: A Long, Risky Road



Source: PhRMA Report 2013 <sup>[7]</sup>

Intervention models within the present industry structure have not been proven to work. In order to be effective, a new business model must be introduced to complement the existing one, allowing open innovation to take place and new stakeholders into the mix. Innovation has been identified as the single determining factor to get us out of the current productivity slump, but without a system to enable it, we will likely fall back into the vicious cycle of low productivity and narrowing priorities.

Blockchain is a technology whose inherent properties make it suitable as a tool to remodel an industry-wide dilemma. Built with the right strategy, it is able to address multiple simultaneous issues of market inefficiency, value capture and capital flow. Through blockchain, tokenization of previously uncaptured value is possible. Tokenized marketplaces can then be created, where new assets can be generated that represent real-world products and services.



Patients have been traditionally considered as “payers” in the industry with little sway in large-scale decisions. As the economics of the industry is changing, payer pressure is mounting. The needs of patients are not well-aligned with the industry direction, and this is evidenced by the massive amount of medical demand that is unmet by the current selection of drugs and treatments in the healthcare market.

Opportunities are missed on both sides, as pharmaceutical and biopharmaceutical companies struggle with cost issues and consumers want better options at lower prices.

Aevolve proposes a bridge protocol that allows new opportunity to flow into the space through unconventional means. This allows patients to be asset-owners, decision-makers and stakeholders. New tradable cryptoassets allow them not only to be part of the financing sphere, but to be active voters and participants in a digital marketplace where live demand can be measured and true price discovery for biopharma products is made possible, thus introducing the prospect of lowering costs. This restructured incentive system encourages companies to act in the patient’s interest.<sup>[8]</sup>

For innovators, this bridge protocol represents an opportunity for generating funding through alternative sources. This translates into progress and continuity for many R&D projects, as well as a low-cost means to market and scale for commercial-ready projects. Blockchain presents the ability to create non-dilutive models of financing. This is done through tokenization of products on one end, and on another layer, the introduction of non-traditional traded instruments by converting token investments into a securitized product. AVEX.AI is the first-ever product to demonstrate this. It is a wrapped token certificate issued as a structured product under the Swiss Stock Exchange (The Six). The announcement for the creation of this product and its ISIN number has already been made at The Six in November of 2018.<sup>[9]</sup> The next stage for AVEX.AI will be communicated soon.

Small and medium-cap companies have been driving innovation-based returns in recent years. This alternative model will support this segment of the industry. The non-dilutive aspect of blockchain-derived financing is one of Aevolve’s most attractive features. However, the protocol is also designed to protect patient-consumers and thus includes various measures of volatility mitigation, reimbursement protocols and token lockup mechanisms. Incentive-based fulfilment models with vesting periods are in place to assure completion and delivery of reservations on the part of participating companies, identified as Medical Service Providers (MSPs) in the system.

Mechanisms for scientific review are also in place to include medical experts as incentivized participants. Projects are evaluated by the patient market, the medical expert community and Aevolve’s own scientific board. Multiple stages of development supported by the protocol are identified under the Objectives section of this paper.

Science and innovation need open systems to thrive. Blockchain-engineered assets capable of autonomous transactions, independent ownership, verifiable and distributed accounting and fueling lightning-speed global marketplaces can revolutionize the market for innovation, finally bringing healthcare to a new era of empowerment and equal opportunity.



# Design and Attributes of the Protocol

## DESCRIPTION

The Aevolve protocol is a consolidation of new cryptoassets and financing channels, patient networks, crowdsourced scientific expertise input, captured value, intellectual property (IP) value of new products and technologies, diversified offerings, new compliance models and groundbreaking investment pathways that work in unison as an engine of open innovation and growth. It is designed to bring an orders-of-magnitude higher number of medical innovations to market — an instrumental driver of new productivity in the pharmaceutical/biopharmaceutical/healthcare space.

It proposes a shift in the business model of healthcare, bringing with it non-dilutive financing opportunities for small or medium cap companies, and other R&D projects which may be considered less investable under traditional criteria.

It is a channel for financing and scaling, introducing blockchain as a tool to increase efficiency, inclusiveness and diversity into the healthcare space. Aevolve's suite of blockchain-derived products present a solution to healthcare's liquidity, financing and rapid innovation concerns.

## COMPONENTS

### The AVEX Token

The AVEX token is the native transactional unit within the Aevolve Protocol. It is the primary asset for entry into the Aevolve ecosystem. Its role is defined under the rules of the Aevolve Protocol.

AVEX is a means of value and asset ownership targeted towards patients, to enable them as in-platform users to purchase rights to tokenized treatments and products.

### Spheres

Spheres are the tokenized products and treatment offerings on the Biospheres platform. These are generated by the listing companies as coupons or reservations representing rights to their product offerings.

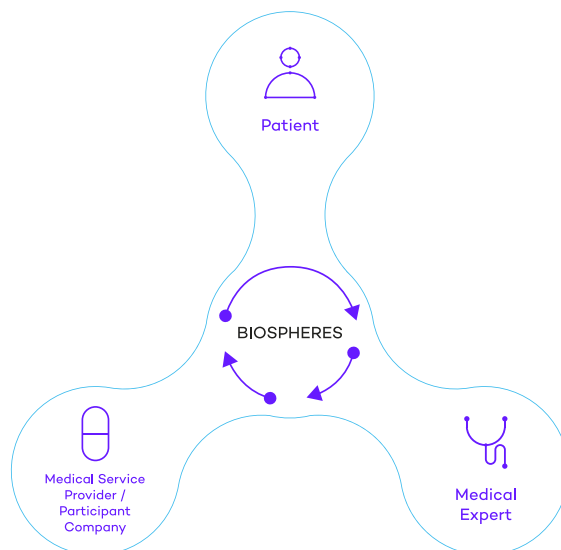
### Biospheres Platform

The marketplace where interactions between users/AVEX owners and biomedical companies offering their products or services takes place.



Biospheres oversees screening, matching, transactions and fulfilment among the participants.

## Ecosystem Components



## Incentive Structure

Incentives are categorized into patient incentives, company incentives and medical/scientific expert incentives.

Patients have voting rights through voting capacity within the Biospheres platform, using AVEX as the voting fee. Through an in-wallet voting function, patients participate in market curation.

Medical experts earn AVEX as they review offerings and companies in a tiered incentive system as facilitated by Biospheres.

Participating company (Medical Service Provider/MSP) incentives are divided into: alternative financing, milestone incentives, fulfilment rules and vesting periods.

## Financial Technology

Blockchain is used as the backbone technology for asset creation, transactions and smart contract protocols that govern the protocol.



## Securitization Pathway

AVEX.AI is a structured product offered on the Swiss Stock Exchange (The Six) that allows exposure to the activity of the AVEX token within Biospheres' dynamic marketplace.

AVEX.AI is a tracker certificate that derives its value from AVEX. This wrapped instrument is an innovative pathway to securitized investments, allowing the trillion-dollar derivatives market to flow into biotech and healthcare innovation, and acting as a familiar bridge to participation in a blockchain-driven economy.

## Communities

The patient-communities comprise the heart of this project, with various advocacy groups, foundations, independent organisations and individuals forming its foundational user base.

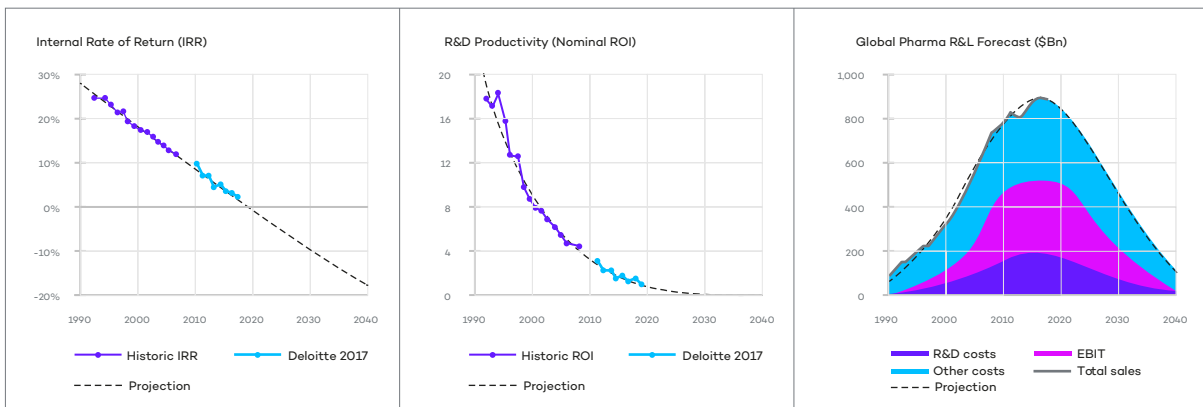


# Objectives

## I. Create a Business Model Solution to Increase Overall Healthcare R&D Productivity and Drive Innovation

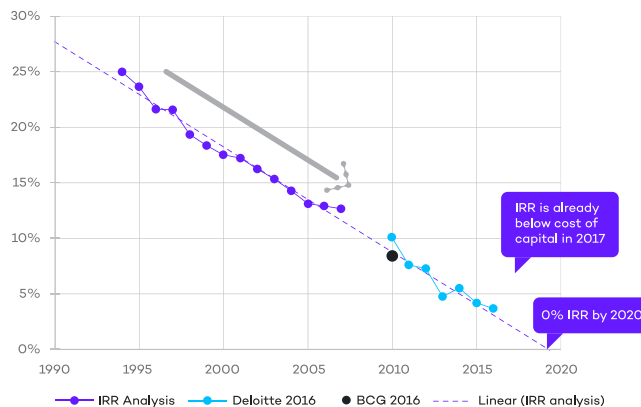
The solution must be capable of accommodating multiple stakeholders for a more equitable ecosystem. It must be able to address declining trends in IRR, R&D productivity and sales in the wake of rising costs to develop new medicines. It must be comprehensive—transforming the industry-wide business model and establishing new sources of funding and liquidity, with special priority given to innovation, and small and medium caps.

### Current Projection of Pharma R&D Productivity



Source: EvaluatePharma, Deloitte 2017, KS Analysis

### Return of Investment on Pharma R&D



Source: EvaluatePharma



### Traditional Model



### Proposed Accelerator Protocol

Complements the existing model; absorbs a diversity of other projects to increase overall productivity and revenue



Alternative sources channel new funds to a higher number of projects, resulting in increased diversity of projects being supported. Many small or independent companies are given opportunities to scale commercially. This equals higher yield and realigned incentives.

This protocol aims to present a pathway for the reversal of diminishing returns in the pharmaceutical industry. It creates a new model that redrafts the interaction and incentives of the various stakeholders in the healthcare system.

## II. Design Patient-centric Architecture

This solution must consider the patient as a primary participant-stakeholder-asset owner as well as the main beneficiary-recipient of innovation. Hence, a simplified user experience and asset ownership method must be the focus of the system architecture. Outcomes must favor practical results and products that can be accessed within short- and medium-term cycles. It must enable a community-driven value system.



### III. Support Every Stage of the Innovation Life Cycle

Aevolve aims to create cryptoassets that correspond to each stage of the drug development/ pharmaceutical/biopharmaceutical innovation life cycle. Each of these asset subgroups are governed by different smart contract models.

#### DRUG DEVELOPMENT LIFE CYCLE STAGES SUPPORTED BY AEVOLVE



##### Early Stage Research & Discovery

These are marketed as research stage, pre-clinical laboratory level work exploring a strategy towards a potential medical solution. At this stage the start up company establishes their target product profile (TPP) and quality target product profile (QTPP) for future development. Such efforts will be clearly identified as of their stage and the transaction involves no FDA regulatory involvement. This transaction functions as a standard donation. Aside from University Partnerships that generally host such programs, we will develop a blanket NGO such as a 501c(3) in the US to channel such donations.



##### Community-driven Challenge Funds

These are campaigns that will be driven by the community, inspired by current NGO models to develop funds for a particular disease or medical sector of interest. Patient advocacy groups perform fundraises on a regular basis for proceeds to be donated towards research in a particular field. Biospheres works with these established organizations to help develop campaigns that raise funds for research activity. Their existing infrastructure already provides for the compliance framework necessary.



##### Research and Product Development

This is the stage when a product concept has been established, intellectual property registration is underway or fully established. This is considered the beginning of the clinical work in the current pharmaceutical development cycle: Phase I (first time in man, FTIM) and Phase II (commit to product development). At this point it is assumed that a company is set up to house the research work, technology IP and investments necessary to fuel the development work. At this stage the company has completed their drug product design selection and they are working on their drug product control definition to initiate and complete their phase III pivotal clinical trials. These companies are already working with relevant regulatory bodies such as the FDA to develop research and commercialization analysis. The end of this stage is defined by the regulatory filing with the pertinent federal agency, if needed.





Alternative sources channel new funds to a higher number of projects, resulting in increased diversity of projects being supported. Many small or independent companies are given opportunities to scale commercially. This equals higher yield and realigned incentives.



### Commercial-ready

Product offerings from these commercial-ready Medical Solutions Providers come in many forms, but includes product approval, if necessary, product launch and a control verification of the product to be sure that it performs as predicted during the life cycle of the product. Commercial-ready products can include:

- Products that offer a medical solution to a consumer but do not require an FDA approval such as a food-based product or diagnostic service
- Products that are already existing and selling in the market (all regulatory requirements are fulfilled) and the company seeks to expand its offering either geographically or increase its inventory and distribution capabilities
- Products that are given limited FDA approvals like Orphan Drugs where they are allowed to commercialize on a limited basis and are still undergoing clinical research activity
- Products that are given full commercialization FDA approval for human use which can include both prescription and non-prescription based medical services



# Cryptoasset Profile

## TECHNOLOGY

### First-layer Infrastructure

The Aevolve protocol utilizes Ethereum as its base-layer blockchain infrastructure. Being an open-source protocol — it allows for many possibilities regarding cross-collaboration and public contributions. Ethereum uses a Turing-Complete programming language.<sup>[10]</sup> Ethereum's programmability and its ability to run smart contracts are considered ideal for the execution of this project and its multiple cryptoassets and features. Smart contracts are protocols that enable the performance of verifiable transactions without the need for third parties. They are programmed with the terms of agreement and can execute these terms automatically.<sup>[11]</sup>

Ethereum's robust set of developer tools and infrastructure solutions simplify and accelerate the execution process for a project of this scale, with multiple stakeholders and large pan-industry components.

Immutability and censorship-resistance are another reason for the selection of a blockchain-based platform. The properties of the blockchain enables it to distribute information on a wide scale without the threat of censorship or reversibility.

As the blockchain and cryptocurrency industry continues to develop, Aevolve will constantly evaluate its options to optimize its products and operations, including the possibility of adding cross-chain support to allow for interoperability between different blockchain platforms when necessary.

## ASSETS BUILT UPON THE FOUNDATIONAL PROTOCOL

### 1. AVEX

AVEX uses the ERC-20 standard as its technical framework for implementation on the Ethereum blockchain. This standard is adopted among a majority of blockchain-based projects and has the advantage of wide acceptance, developer support and existing wallet and exchange support. Price upon release is 1 USD.

This is based on the approximate ratio of AVEX tokens to the minimum total value available on Biospheres at launch (at least USD 1.2 billion worth of offerings) plus estimated airdrop distribution requirements.

Token supply ratio to offerings on Biospheres will change depending on the current amount or capacity on the platform. This is affected by both the onboarding of new products and the attrition rate of projects as Medical Service Providers (MSPs) in the system begin to fulfill reservations.

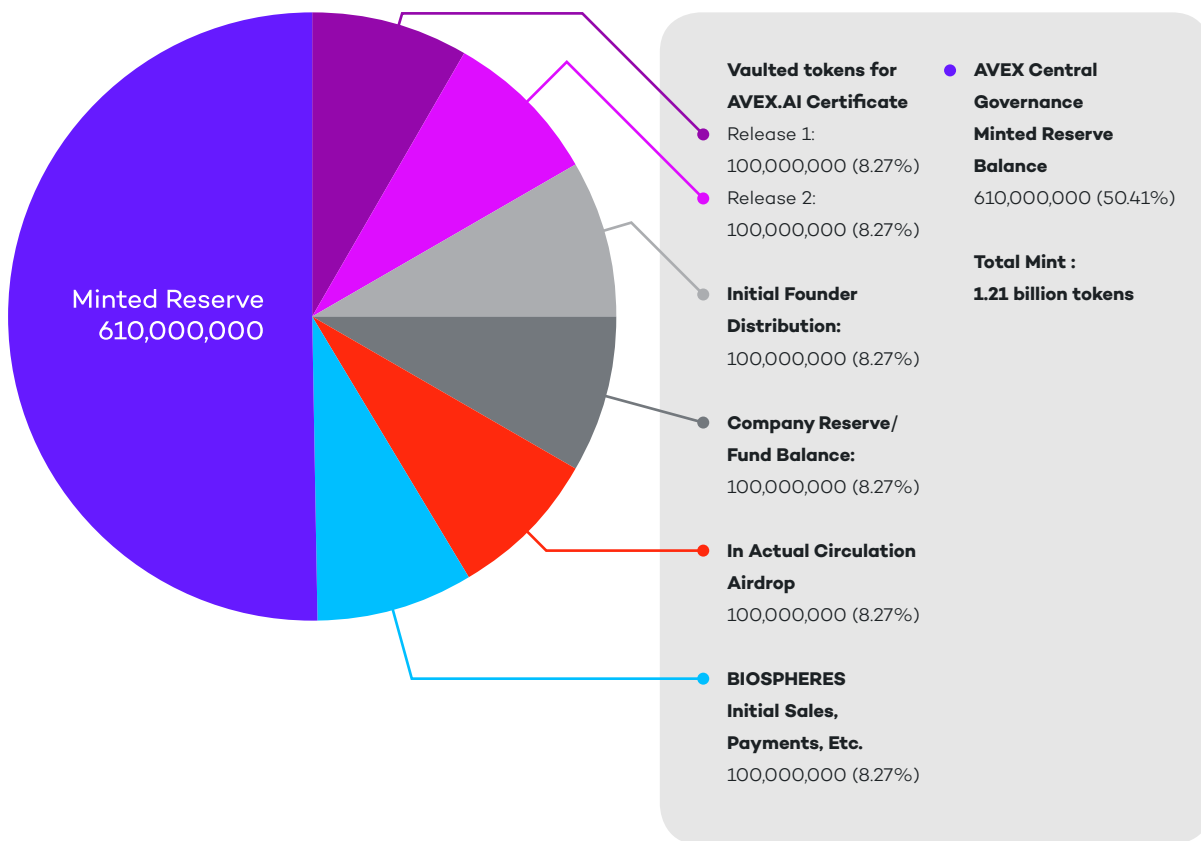


The main price index of the AVEX token will be a weighted average of its exchange value on Biospheres as the platform itself has an inherent exchange function, plus selected crypto exchanges where it trades.

AVEX.AI is a "Tracker Certificate" and is thus based on a Third Party value. However, the price from the trading of the certificate on the Six Exchange is reset on a regular interval to match the Third Party Exchange Index. For now, we have set the "reset interval" every twenty-four (24) hours. This means that intraday trading can have different price variations between the crypto exchanges and SIX Exchange. Both markets may potentially influence one another.

Beyond the speculative activity on exchange trading, it is important to note that the primary pressure on price will come from the actual purchases from the Biospheres platform.

### Token Allocations



## 2. Spheres

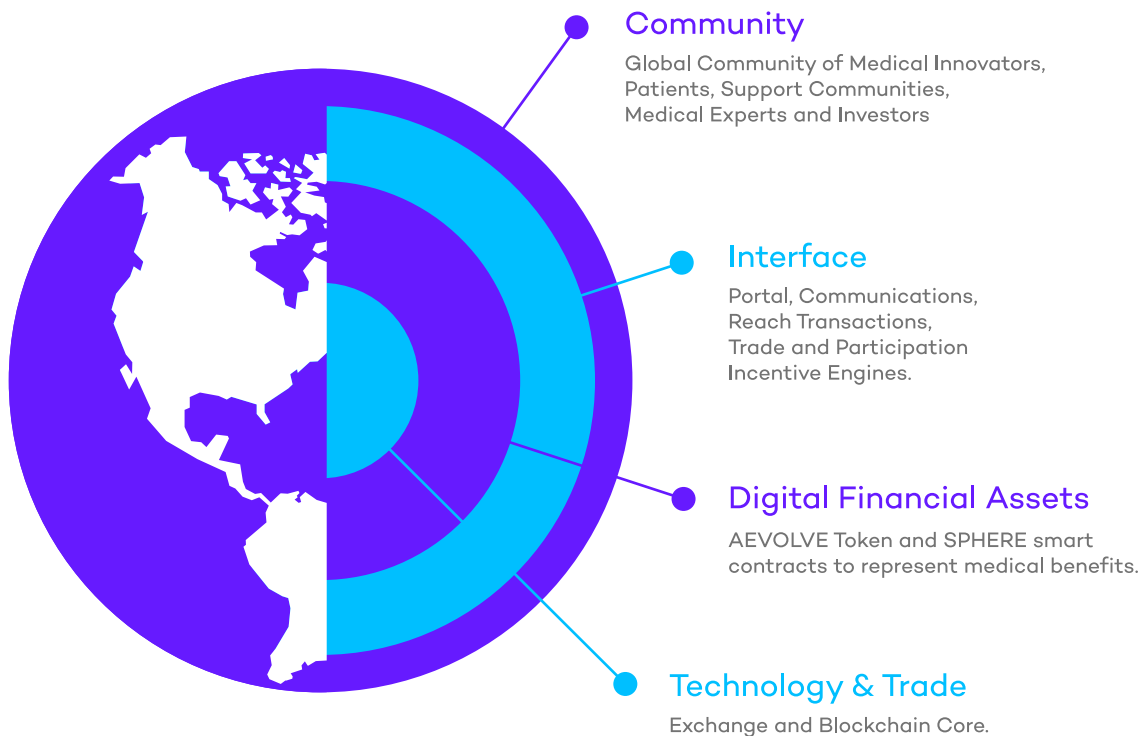
ERC-20 cryptotokens that correspond to rights to a product or treatment reservation. They represent redemption rights to one full unit of a product or service. Fractional ownership of spheres is not allowed.



## The Biospheres Ecosystem

Aevolve is creating the Biospheres platform as a method to bring revolutionary medical technologies to fruition and provide a new standard of healthcare to anyone in the world. Our goal is to increase the visibility of more biotech development projects, open the market for biotech funding dramatically and thereby significantly increase the availability of advanced medical procedures and innovative treatments to patients globally. This opens the possibility of individuals voluntarily funding the development of procedures they would like to undergo or supporting mission-based entities funding the development of biomedical treatments that align with their goals.

### Biospheres Platform





## Spheres as Offerings

Spheres are ownable and transferable digital assets. Each Sphere uniquely represents the right to a healthcare product or innovative medical treatment. In this way, Spheres unitize and tokenize the offerings of biomedical companies.

### **Spheres Represent a Medical Benefit to a Patient**

Spheres can represent any type of procedure reservation, surgery, product, medicine, device or medical treatment that requires funding to be developed and/or made available to patients. The total number of treatments are limited by the number of Spheres listed for any particular offering. Thus, Spheres directly represent a unit that is a health asset to the patient and can be bought, sold, or used.

AVEX is the only digital asset that can be used to buy Spheres. The number of treatments are limited to the total number of Spheres issued. Thus, if a biotech firm listing a Sphere offering wanted to perform 100,000 treatments from the funding, then there would be 100,000 Spheres issued referring to this offering, each with a specific reservation number as its unique attribute.

Spheres are vehicles that simultaneously fund treatment development, reserve a specific treatment and convey ownership and control over that treatment. Because they represent a claim on a specific medical procedure, Spheres are effectively digital assets that can be owned by the patient and these assets can be traded on the Biospheres platform.

### **Sphere Liquidity**

The liquidity of these tokenized treatments gives patients economic flexibility by allowing them to buy or sell their reservations, according to the rules and guidelines set by Biospheres. It is important to note that the secondary market for these Spheres is limited and governed by strict rules in terms of price caps and certificate redemption expiry.

This model empowers patients to take ownership of their health while giving some measure of flexibility.



# Empowered Ownership: Impact on Patients and Support Communities

The current problem for many patients with diseases or conditions is the lack of affordable and widespread access to healthcare options.

## Awareness and New Options

One of the major services Aevolve provides is the communication and transference of new innovations to the public. Research and innovations in the medical field are a never-ending pursuit and new solutions will need to continue to be brought to global awareness.

Publishing relevant information on these solutions on our open marketplace will allow anyone in the world to witness cutting-edge options at various stages of their development. Patients are for the first time able to weigh a broader set of options available to address their health problems — and consider information which they may have never come across otherwise. Beyond awareness, Biospheres creates the environment for everyone to directly and immediately participate in these future technologies.

## Discounted Pricing

Patients acting through Biospheres are possible potential early buyers of future offerings. When a Medical Service Provider (MSP) lists a Sphere offering, they are doing so to provide a medical benefit to patients and to acquire the necessary kickstart to progress and commercialize these medical solutions.

When they are commercialized, new treatments generally increase in price level due to limited initial supply. MSPs are encouraged to provide discounted pricing for these early offerings so the patient will have incentive to access new technologies before prices increase.

## Loyalty Discounts

As a mechanism to reward patient confidence and patronage in use of the Biospheres platform for their medical needs, AVEX token holders are able to qualify for discounts on Spheres. The computation for a patient's eligible discount may, for example, be based on number of tokens held and how long tokens have been held.

i.e., (Number of tokens held \* Time held) = Discount (Percentage Variable)



## The Patient is Financially Protected

If the MSP becomes unable to fulfil their offering, the amount held in escrow is refunded to the patient holding the Sphere, mitigating their financial risk.

## Sphere Liquidity

By creating a new means of transacting healthcare between patients and providers and tokenizing medical procedure offerings with blockchain technology, we have created new liquidity in the healthcare sector.

Our protocol allows patients a novel option when it comes to health security — a hybridized, personalized and transferable digital plan. Because there is value until fulfillment, people are able to hedge their medical costs by recouping a portion of their health expenses. We believe that this new healthcare model can be a viable alternative to current market options.

## Patient Support Communities

There are many disease sectors that have strong patient support organizations. These are generally NGOs that provide education, guidance and support to their local communities. Aevolve can provide direct support to these communities through token airdrops.

Aevolve will allocate a percentage of tokens for such initiatives to expand our reach. NGOs can help qualify deserving recipients and such activities can also enhance the respective NGO's reach and help in achieving its community objectives.

### Summary of Benefits for Patients

- Awareness and access to leading-edge medical technologies
- Purchasing Spheres financially supports and advances medical innovations, thus empowering the patients to decide based on health impact value.
- Patients buying Spheres will capture discounts built in by the MSPs
- Financial risk mitigation structure allows for refunds on unfulfilled offerings since they are held in escrow.
- Liquidity of Spheres provides both an added level of financial risk mitigation and opportunity.
- Spheres are anonymous and transferrable.



## Alternative Channel: Impact on Medical Innovators and Solutions Providers

Meeting the rapidly increasing global demand for advanced medical procedures requires fast-paced innovation and development. This in turn necessitates significant funding, posing major challenges to getting capital behind many groundbreaking medical innovations.

Challenges in the current setup include the capital-intensive nature of biomedical projects, limited venture capital funding, increasing costs and traditional capital market constraints. These challenges in the sector are some of the major bottlenecks to innovation. The number one problem that the biotech and health industry faces therefore is that innovation in this field has become notoriously expensive. Each idea simply requires more capital to bring to market than innovative ideas in other industries. Thus, with succeeding years, fewer biotech projects get funded.

Another contributing factor to lack of VC interest or VC hesitancy in the sector is the “newness” of the biotech industry in comparison to other high-tech industries. Typical venture capital investors looking at biotech projects have less of a track record to judge a projects’ eventual success compared to projects in more established industries.

Compounding these issues is the fact that biotech projects tend to require more capital in earlier stages, which only raises the associated investment risk. Funding challenges in first world countries like the U.S. are somewhat lessened given the abundance of early stage funding sources from government, foundations and academic institutions. Innovators in other countries, especially developing ones, do not have similarly robust research support and VC institutions in place and have few places to turn to fund their ideas.

Finally, not every project is fundable from the perspective of a large biotech or pharmaceutical company. Some suffer from a limited market. Others face patentability or production challenges, while others simply do not fit the traditional revenue model or buyout strategy.

### **When are medical breakthroughs not attractive enough for traditional funding?**

- When the solution doesn't address a big enough patient base. With a limited market, there is not enough money to be made.
- When the solution doesn't fit the traditional revenue model. When the solution doesn't scale up large enough or fast enough.
- When the solution competes with an existing, large revenue producer even if the current products in the market aren't as effective
- When the solution isn't strong enough to patent or to protect from competitors





## Opportunity: The Alternative Capital Pool

The answer to these problems is an open and transparent medical innovation ecosystem where these companies can gain access to a global pool of capital and auxiliary support services.

The Biospheres platform provides a solution to all of these challenges. Aevolve's platform will be a marketplace that opens up sources for funding biomedical innovation far more broadly and deeply than is possible today. One way in which we anticipate this happening is by attracting new types of funding, from both crypto and traditional finance that participates through AVEX.AI.

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## Expert Community Participation

As Biospheres continues to attract projects from around the world, these projects will undoubtedly span a number of disciplines and subject matters. A centralized review body would not possess all the required expertise to properly qualify such a wide variety of technologies. By creating an integrated financial incentive to review and rank offerings on Biospheres, one of the largest scientific and medical peer review expert communities will be established as a fundamental review component. This community will span the globe and participate in curating the direction of many areas of medical science.

### Incentives for Scientific Curators



Rewards are commensurate to the degree of participation and quality of reviews. Reward should be moved to expert wallet when there is enough information to determine the completeness and quality of their reviews.



# Governance and Systems

## MEDICAL SERVICE PROVIDER (MSP) PAYOUT AND FINANCING PROTOCOL

### Patient Purchase Offerings

Patient purchases of products are done with AVEX.

### Offerings Tokens

Offerings are represented as Spheres tokens on the platform.

### Pricing

Spheres' initial sale price will be pegged to fiat. The amount of AVEX needed for the purchase will depend on its current value. AVEX current price is determined through the Biospheres Index, a weighted average of AVEX price on Biospheres plus the indices of major exchanges where it is independently listed as its market develops.

### Product Purchase: A Relay Structure within Biospheres

A smart contract relay structure is used when converting AVEX, the in-platform currency, to Spheres, which are the reservation certificates and redeemable vouchers.

AVEX, upon selection and purchase of a product, are converted to Spheres and credited to the user account as a redeemable certificate in a separate wallet.

This simple relay structure of conversion from one smart contract to another denotes the conversion from currency value to redeemable value.

### Volatility Control and Speculation Reduction

The decision on whether to release or sequester AVEX to the treasury is based on economic levers that are determined under Biospheres' monetary policy. Stablecoin and/or fiat may serve as mitigation tools based on situational need.



While Spheres may be transferable, they can only be resold in a limited secondary market within Biospheres. This limited secondary marketplace within Biospheres allows for a degree of recovery of a patient-user's expense whenever the Sphere is deemed unnecessary for his particular case. There will be a cap on the amount that Spheres can be resold within this market. This is to provide patients with a degree of flexibility while assuring that there will not be unlimited speculation on the value of Spheres.

## **Biospheres Escrow**

A smart contract escrow solution will be created that works in-platform. As AVEX tokens are used to purchase Spheres, they immediately go into the escrow based smart contract bonded to the Sphere and are only dispensed when the Sphere is redeemed or refunded. This allows us to automate the release of escrowed AVEX as Spheres are redeemed.

Patients will have their purchase value protected through this escrow system. Because of the high-risk profile of the biopharma industry, we needed to create a governance mechanism which makes Sphere offerings safer and more attractive to patients. By bonding it directly to the tokenized assets, individuals now have direct control over their health investment value until redemption is executed.

## **MSP Access to Funds**

One of the key benefits of the Biosphere platform is for MSP having access to funds in order to bring their products to market. The Biosphere platform has a proprietary solution to ensure MSP can get the right access to funds.

## **Patient Redemption**

Once the MSP is ready to complete the fulfilment, the patient can redeem their Sphere voucher on the Biosphere platform. This can include having a product shipped to them or scheduling when they can have a treatment performed. When a patient redeems a Sphere, this basically completes the purchasing process which is no different then when you buy products online today.

Once the redemption is completed, it automatically releases the AVEX token bonded to this Sphere from escrow and the appropriate payments are made to the MSP.

## **Scientific Expert Contribution**

Scientific/medical experts are encouraged to contribute to the Biospheres Technical Review program.

A scientific expert verification process and account creation enables this. Voting participation as well as content input is logged and rewarded with AVEX Credit in accordance with the Biospheres Expert Rewards Point System.



## Refunds

The conditions for refunds are set in order to protect the users within the system. There are several circumstances that may prompt a refund. For example: in the event that fulfilment cannot be completed due to failure of the MSP's own system or a technical issue.

When such circumstances occur, a patient or user is eligible for a refund subject to the terms and conditions stated in the Biospheres user agreement.

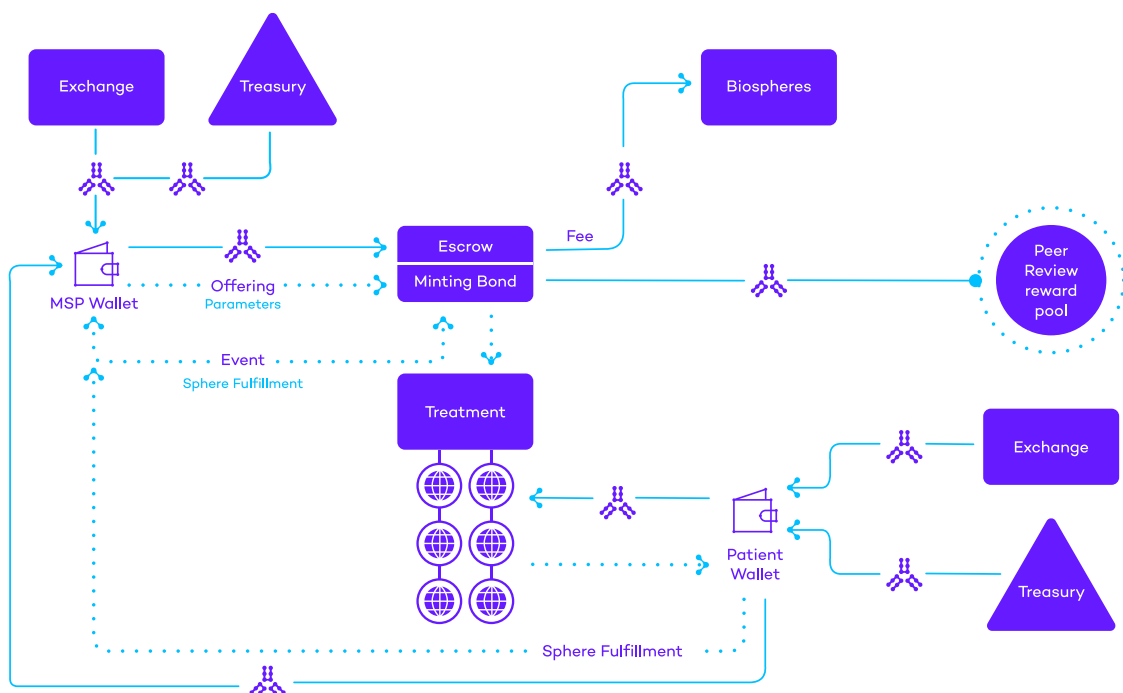
## Airdrops

Aevolve employs a distribution model via airdrop that follows a donation or charity pattern. The Aevolve Giving Protocol (AGP) uses a strategic endowment model that donates AVEX to those who need it most: advocacies, foundations, charities and patient organizations. This is to ensure that AVEX will be utilized properly and its primary use is need-based, not secondary speculation.

AGP distributes using a community-based strategic airdrop or "heartdrop" organic model that encourages advocacy groups to spread the word and start community-driven initiatives to provide AVEX to priority cases and to the most urgent demographics.

AGP may also assess prevalence of diseases and distribute based on these studies. The protocol will establish its own community wallets to facilitate such distribution efforts. AGP forms partnerships with various organizations and initiatives originating from different sectors in order to aid in proper distribution and community education.

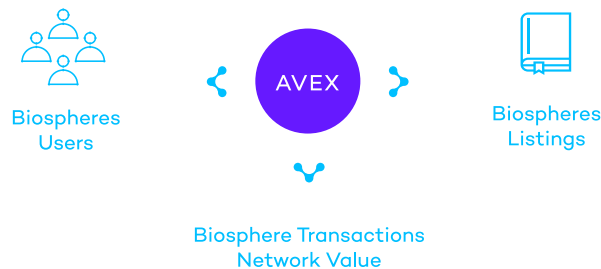
## Biosphere Process Flow Model





# Aevolve Network Value

The token value is driven by their utility in relation to the initial market offering available on the platform and the BIOSPHERES potential market offering. Aevolve’s market is designed to function primarily at a high utility value and minimize speculation over time. Aevolve is driven by actual medical solutions and products that address real world demand and practical applications. AVEX and Sphere asset ownership are targeted towards patient-consumers.

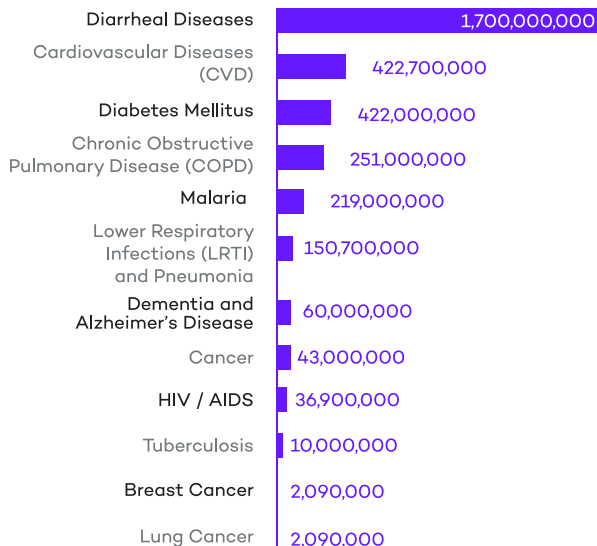


### Feasibility of adoption \$106 B online pharmacy sales

The global internet pharmacies market is estimated to reach US\$ 106 billion by 2023, growing at a CAGR of 15.7% over the forecast period, driven by rising personal disposable income, lower prices, surge in internet penetration, stupendous growth of online retail market and a large number of online players entering the online healthcare product segment.

### \$1 Billion Secured offerings

The initial Sphere Offering for market drive includes an offering by Amylex Biotech Corp. for Beta Amyloid Reduction Treatment that has recently been FDA approved. This, among other innovations will be among the first to be made available on BIOSPHERES with offerings worth over \$1B.



### \$727 Billion Biotechnology Market

The global biotechnology market is expected to reach USD 727.1 billion by 2025.



# Pathways to Access: A Summary

## INVESTORS

### Familiar Access through Wrapped Investment Tools

One of the most ingenious methods of assuring investor access to tokenized markets is through wrapped securitization.

AVEX.AI ushers in capital from the traditional investment space, which has the potential to channel billions of dollars out of a trillion-dollar derivatives market. This is done through a structured product in the Swiss Stock Exchange (The Six).

AVEX.AI is a simple vehicle for investors to participate in the activity of the AVEX token and derive its value without directly buying blockchain-derived tokens or cryptocurrencies. It offers exposure to the dynamic market of both healthcare and crypto through a familiar and secure product.

## PATIENTS AND ADVOCATES

### AVEX Token & Community Efforts

Aevolve believes in community-driven grassroots efforts to create its strong network of patients and advocates. There are various ways to participate: as an AVEX token holder, a consumer and participant in Biospheres, a volunteer in the Aevolve Giving Protocol, and in personal gifting or community airdrops. Whatever the chosen vehicle for participation, patients and token owners are assured of stakeholder opportunity in the network.



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