

Cerebrum DAO
Whitepaper v1.3

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Abstract

Cerebrum DAO stands at the forefront of a groundbreaking initiative in the field of brain health by orchestrating a worldwide network organization, commonly referred to as a "DAO", that brings together a global community committed to collectively address neurodegeneration and advance neuroscience solutions. With an initial focus on preventing Alzheimer's disease, our overarching mission is to prevent neurodegeneration, extend healthy brain years, and cultivate an engaged community with diverse expertise and backgrounds all motivated by the same cause. Our streamlined funding process ensures expediency, equity, and transparency, guiding researchers seamlessly from project qualification to execution, incubation, and ultimately translation to impact outcomes.

Within this collaborative community, we prioritize funding for ambitious projects with translational potential, extending an open invitation to both early-career researchers and established labs to contribute to our shared objectives. Departing from traditional research approaches, Cerebrum DAO explores alternative evidence-based hypotheses linked to aging and neurodegeneration, with primary research areas including neuroinflammation, metabolic stress, mitochondrial dysfunction, and vascular changes, that latter of which places particular emphasis on Blood-Brain Barrier (BBB) dysfunction.

Anchored in decentralized principles, our governance structure leverages the NEURON token for effective curation and community-driven decision making, fostering a diverse and collaborative environment. Our use of the pioneering Intellectual Property Non-Fungible Tokens (IP-NFTs) facilitates the tokenization of intellectual property ownership / commercialization rights, bridging the gap between legal and smart contracts and unlocking new translational use cases. Our rigorous research evaluation process, involving screening, peer review, community presentations and on-chain community votes, underscores our commitment to propelling groundbreaking solutions and shaping the future of brain health and longevity research in a manner accessible to a broad audience.

Upon funding research via IP-NFTs, clear milestones are set for the next funding event for each project. Upon achieving initial milestones, each IP-NFT can be fractionalized into IP Tokens (IPTs), whereby capital can be contributed exclusively to the project and the IPTs govern the project directly. By leveraging IPTs and liquid token markets, IP-NFT projects can advance through translation, securing funding, compensating researchers and replication studies, and rewarding contributors. Cerebrum DAO will continue to hold the IP-NFT and retain substantial ownership of the IPTs, enabling the construction of a diverse portfolio of liquid assets. We view this use of IP-NFTs and IPTs as a major disruptive funding model for translating research into therapeutic impact outcomes in the world.

The human brain has 86 billion neurons, and Cerebrum DAO will have 86 billion NEURON tokens available. In addition to governance over Cerebrum DAO, the NEURON token provides its holders with other valuable utility, including (a) the potential early access to brain health consumer and successful therapeutics sourced or developed by Cerebrum DAO and (b) the opportunity to participate in determining purchase rights for IPTs offered from Cerebrum DAO's IP-NFT projects.

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2. Introduction and Key Challenges

Neuroscience research over the past decades has developed a large body of evidence about the pathophysiology of brain diseases and potential treatment targets. However, traditional academic funding predominantly prioritizes publishing and often falls short in facilitating the transition of research from initial experiments to clinical application. Despite the substantial evidence supporting certain mechanisms, such as the amyloid hypothesis in Alzheimer's Disease, the journey from discovery to approved clinical treatments can span over three decades. At the current pace, the majority of patients and individuals at risk may never benefit from these advancements, even when the scientific basis is considerably advanced.

Cerebrum DAO implements novel funding mechanisms designed to traverse the so-called "Valley of Death" in brain research. We utilize community-based funding throughout all stages of development, from the inception of research to the point where medications or diagnostic products are ready for clinical implementation.

2.1. Revolutionizing Brain Health Medicine

Many forms of brain diseases remain undiagnosed or are diagnosed too late to bring effective treatments and interventions. Cerebrum DAO envisions a future without brain disorders and aims to change the status quo to accelerate transition to preventive medicine. To achieve this vision, several changes to the current system are needed. This transition requires broad education of the community to seek help early on, developing highly accurate screenings and early diagnostics, as well as shortening time for development of new treatments. Cerebrum DAO works closely with doctors, academic partners, patient organizations and industry experts to jointly streamline translational efforts.

2.2. Forging New Paths in Intellectual Property for Neurotherapeutics

Intellectual property has traditionally been generated and held solely by inventors and their funding organizations. Using fractionalized IP methods, Cerebrum provides a vehicle for IP to be held collectively by DAO token holders and participants. This encourages the investment of a wider number of individuals in the development of solutions addressing neurodegenerative disease and supporting brain health. This empowerment model allows everyone to contribute to solving challenges in brain health that affect people throughout the world.

2.3. Navigating the Landscape of Neuropharmaceutical Evolution

The majority of current pharmacotherapies were discovered by chance in the middle of the 20th century. Soon after developing Prozac, pharmacological companies withdrew from brain areas almost completely for almost 30 years. Recent years were marked by repurposing, legalization of psychedelic substances, and development of antibodies against brain amyloid. Despite numerous research findings, academic projects rarely proceed to the clinical phase.

We believe that the translational potential of academic research in this area is deprioritized and underfunded. Therefore Cerebrum DAO was established to select, provide the resources, and guide the most promising research up to clinical implementation. This is achieved through the combination of human intelligence with knowledge graphs and artificial intelligence tools, as well as novel approaches to intellectual property and funding.

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3. Solution

In response to the pressing challenges surrounding brain health and the imperative need for breakthrough solutions in prevention of brain diseases, we proudly present Cerebrum DAO. Our mission is to establish the world's most expansive and engaged community dedicated to funding and fostering revolutionary developments in brain health, pushing the boundaries of neuroscience and longevity research.

Brain health stands as a cornerstone of our overall well-being and longevity, with the human brain representing the final frontier in healthcare. As global populations age, and advances in health interventions extend our lifespans, the critical challenge emerges: ensuring that our bodies do not outlive our brains. Cerebrum DAO recognizes the fundamental importance of brain health for people worldwide and acknowledges the scarcity of scientific understanding and effective therapeutic solutions.

In our pursuit to change the game, we place our trust in the collective power of a global community of minds to propel solutions and cures for neurodegeneration while advancing our collective brain health. The Cerebrum DAO ecosystem is designed to be a catalyst for progress, fostering collaboration and innovation on an unprecedented scale.

Key Tenets of Cerebrum DAO

1. **Community-Led Governance:** Cerebrum DAO operates as a network organization designed on the decentralized autonomous organization (DAO) framework, anchored by smart contracts on a distributed ledger and virtual machine. Through active participation in the governance process, individuals can influence research directions, access valuable data repositories, and contribute to the management of our intellectual property portfolio.
2. **Cognitive Capital:** The NEURON token serves as the governance and curation token, granting holders the authority to actively participate in shaping the trajectory of Cerebrum DAO. Token ownership opens avenues to guide research initiatives, access and leverage data resources, and steer the direction of our intellectual property assets.
3. **Holistic Asset Portfolio:**
    - **Intellectual Property (IP):** Cerebrum DAO acquires and manages patents and licenses for groundbreaking therapeutics, diagnostics and preventive measures.
    - **Equity Holdings**: Cerebrum DAO may choose to invest in promising young digital therapeutics and life sciences companies aligned with its mission.
    - **Research and Development (R&D) Data:** Contributions to research projects, whether through funding or active participation, generate valuable data assets that enrich our collective understanding of brain health.
    - **Treasury Funds:** Our financial backbone, including unissued NEURON tokens, fuels the continuous pursuit of innovative solutions and supports the global brain health community.

By uniting individuals passionate about advancing brain health, Cerebrum DAO endeavors to accelerate the pace of discovery, foster groundbreaking research, and pave the way for transformative solutions to neurodegeneration. Together, we embark on a journey to safeguard the longevity of our most vital organ - the human brain.

3.1. Core Stakeholders

Cerebrum DAO's success relies on diverse individuals working together, all with shared goals and incentives, actively contributing to achieve our mission.

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3.1.1. Cerebrum DAO Participants

A Cerebrum DAO Participant is an interested party and active member within the Cerebrum DAO network. They embody the spirit of community participation, sharing in our collective vision and mission. These individuals actively take part in discussions and collaborative activities on publicly accessible platforms like Discord. While not holding NEURON tokens, members are encouraged to contribute to the DAO through participation in bounties and other community-driven initiatives. It's important to clarify that members do not possess governance rights akin to token holders. Nonetheless, their lively engagement plays a crucial role in fostering a diverse and dynamic community.

3.1.2. Token Holders - Community Members

A token holder is classified as a Community Member in the Association and is someone who holds Cerebrum DAO's NEURON governance token. These tokens can be purchased on the open market or earned by actively contributing to the DAO's activities. Holding NEURON comes with governance rights, empowering token holders to participate in decision-making. This engagement unfolds through accessible governance platforms like Discord and Snapshot for formal token gated voting processes.

3.1.3. Working Group Members

A working group member in Cerebrum DAO embodies a crucial role as a specialized contributor, providing essential expertise and insights. Interested members can apply to join these specialized groups based on their experience and knowledge. The working groups themselves elect stewards responsible for guiding their activities. Within these groups, incentives take various forms, including compensation for services or the establishment of bounty programs. When remuneration is involved, working group members may receive compensation in different forms, such as NEURON tokens, stablecoins, cash, or other incentives, as collectively decided by the token holders. This collaborative approach ensures a diverse range of contributions within Cerebrum DAO.

3.1.4. Working Group Stewards

Each Working Group (WG) is led by one or two Stewards who usually grow into that position by contributing work of great quality to their Working Group for a longer period of time. A WG Steward should have both domain expertise on the topic of the WG and managerial experience leading others. WG Stewards shall be granted relevant administrative privileges within the DAO within the scope of their responsibility. Stewards execute and make decisions on a day-to-day basis within the bounds empowered by the token holders.

3.1.5. Service Providers

Service providers within Cerebrum DAO contribute vital services, spanning technical development, IP sourcing, IP-NFT development, marketplace services, drug development and more. Cerebrum DAO engages these members through contractual agreements, compensating them with fiat currency or specific tokens such as NEURON.

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3.2. Working Groups and Squads

We have established a set of pivotal working groups and squads, each meticulously crafted to address crucial facets of our initiative. The delineated groups are designed to form a robust foundation, ensuring a comprehensive approach to DAO management. The identified working groups and squads are as follows:

1. **Coordination & Operations Working Group:** Focuses on the operations and governance of the DAO and making sure that communication is fluid between the members.
    - **Governance**
    - **Technology / Product**
    - **Tokenomics**
    - **Finance and Accounting**
    - **Legal**

2. **Community & Awareness Working Group:** Focuses on the marketing, community management, and growth of the DAO through external communication and business development.
    - **Awareness**
    - **Community Engagement**

3. **Neuroscience Dealflow Working Group:** Focuses on reviewing funding proposals, projects, and researchers, and maintaining a pipeline of deals that are curated and filtered.
    - **Neuroscience**
    - **Deal Sourcing**
    - **Deal Execution**

4. Organization Architecture

4.1. Architectural Summary

- Governance and staking smart contracts, modeled after VitaDAO.
- Contribution and liquidity bootstrapping mechanisms using the Bio.xyz Launchpad.
- A native governance and curation token: NEURON
- A Gnosis Safe multisignature wallet enacting proposals voted on by members.
- Cerebrum DAO's IP and data assets, which are represented as NFTs held by Cerebrum DAO.

4.2. Governance Framework Overview

Cerebrum DAO's governance dynamics form a strategic interplay of proposals, driving decisions, resource allocation, and organizational strategy adaptation. Proposals, the backbone of our decision-making process, arise from the engagement of our community members through both formal and informal channels.

Cerebrum DAO members define the organizational structure through proposals and voting mechanisms. Proposal types may include: governance proposals, project proposals, funding proposals, data monetization proposals, and IP proposals. New types of proposals can be defined by the DAO members when necessary.

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4.2.1. Proposal Process

In practice each Cerebrum DAO member may suggest their project or suggest changes to the current structure or procedures. These should be brought to the discussion of the Working Group, processed and summarized in the written form. Once this process is finished the Working Group recommends a proposal for voting and the community decides to accept or reject the proposal via voting.

Phase I: Community Support on Discord Forums
Duration: 2 Days

Details:
To successfully pass from Phase I to Phase II, proposals must receive backing from at least two (2) WG leads (Stewards) or Cerebrum Core, along with positive votes from a minimum of six (6) WG members (any) or NEURON Hodlers. Also the proposal must receive more "Agree" votes than "Disagree" votes.

Only WG members (any) and NEURON Hodlers can participate in commenting and voting. All Cerebrum DAO participants can view proposals.

Proposals must include a poll with the options: “Agree,” “Agree w/ revisions (comments)”, and “Disagree.” The author must address and incorporate feedback from “Agree w/ revisions (comments)” votes. Those who voted “Agree w/ revisions (comments)” should update their choice to “Agree” once their concerns are addressed satisfactorily or to “Disagree” if they have not been addressed.

If a proposal garners fewer than 8 positive votes within the initial 2-day period, it will be declared void and the discussion will be locked.

4.2.2. Voting Process

Phase II: Token-based Voting on Snapshot
Duration: 5 Days

Details:
Proposals that pass Phase I will be titled with "(Passed to Phase II)" prefix and locked on the forum by Cerebrum Core. These are then uploaded to Snapshot platform for a token-based vote.

The entire voting process of Cerebrum DAO is blockchain and token based. In addition to proposals presented from Working Group recommendations, Any NEURON token holder holding a minimum of 0.75% of the outstanding supply can present a funding or governance proposal directly to the DAO for voting. Voting on valid proposals shall be conducted as follows:

- Voting shall begin two (2) hours after a proposal has been published.
- Voting shall occur over a period of five (5) days.
- A quorum of 20% of currently outstanding NEURONs must be achieved to successfully pass a proposal
- NEURON Hodlers may delegate their voting rights to other NEURON Hodlers and delegated votes count toward the proposal threshold and a quorum.

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- Valid proposals achieving a quorum **and** having a simple majority of the total votes in favor of the proposal shall pass. If either a quorum or a simple majority of votes in favor are not achieved, then the proposal will fail.

4.2.3. Association Privileges

The Cerebrum DAO Association Executive Committee reserves a veto right over proposals passed by the NEURON token holders making up the Cerebrum DAO Community. This veto right is restricted for the following unique reasons:

1. Any proposal that is deemed to be illegal
2. Any proposal that is deemed to be unethical
3. Any proposal that is not directly aligned with the mission of Cerebrum DAO

Other than for those reasons, the NEURON Token holder voting on each CDP will be executed by the Cerebrum DAO Association in accordance with the outcome of the vote.

4.3. NEURON Token Economy

With 86 billion neurons in the human brain, each NEURON token represents a neuron in our brain and serves as the cognitive essence and neural blueprint within the Cerebrum DAO ecosystem. The NEURON tokens are earned by contributing work, data, IP, or funds to fuel the growth of Cerebrum DAO. The main goal for the creation of the NEURON token is to provide a truly decentralized governance model and sustainable growth of Cerebrum DAO's network. That means creating an equally attractive network to contributors, entities, enterprises, service providers and the wider community. The NEURON token will be issued as a governance token and not a regular token or security.

The NEURON token has four primary governance uses:

- Voting on which IP projects receive funding from Cerebrum DAO
- Voting on the terms under which each project can receive funds
- Voting on key Cerebrum DAO governance matters (e.g. compensation policy, funding events, key strategic partnerships, governance board memberships, etc.)
- Voting on Cerebrum DAO treasury management policies

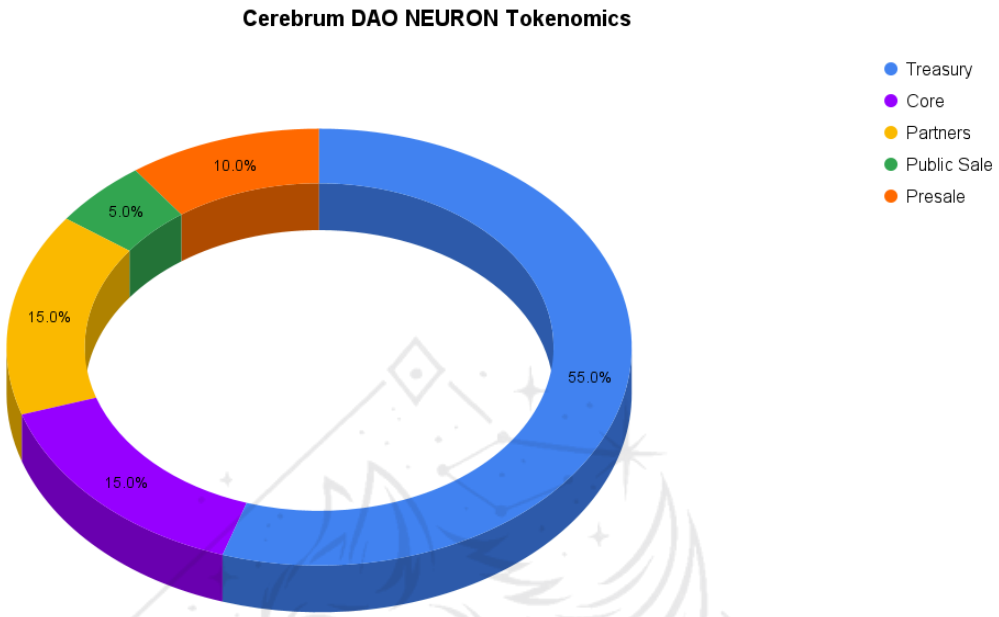
The NEURON token is initially deployed on the Ethereum Mainnet as an ERC-20 token. The choice of Ethereum Mainnet as our deployed chain is intentional. Leveraging Ethereum's robust developer community, established ecosystem, and widespread adoption provides a solid foundation for the NEURON token's initial phase. This strategic positioning ensures a seamless integration into the broader blockchain landscape, setting the stage for the evolution of Cerebrum DAO as a pioneering force in advancing the limitless potential of the human mind.

4.3.1. NEURON Token Genesis

The diagram and table below show the initial Cerebrum DAO token distribution. The Core Team and Community members will collectively receive 15% of the token supply and key strategic partners will also receive 15% of the token supply. Each recipient is subject to lockups over multiple years. We will sell 15% of the token supply, including 5% to public buyers and about 10% to early private supporters. Overall, 45% of our supply will be in the hands of the community and committed early supporters and founding stewards, establishing the cornerstone of our

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decentralized governance structure. A substantial 55% remains unallocated in Cerebrum DAO's strategic treasury to ensure the solidity of Cerebrum DAO's future.



4.3.2. Token Supply and Distribution

Cerebrum DAO, drawing inspiration from the extraordinary complexity of the human brain, bases its total token supply on the sheer magnitude of neural brilliance, precisely aligning with the 86,000,000,000 neurons that compose the foundation of cognitive function. As stated above 86,000,000,000 NEURON will come into existence as a native ERC-20 token.

Stakeholders	Tokens	Percentage
Treasury	47,300,000,000	55%
Core Team & Community	12,900,000,000	15%
Strategic Partners	12,900,000,000	15%
Presale	8,600,000,000	10%
Public Sale	4,300,000,000	5%
Total	**86,000,000,000**	**100%**

At the commencement of Cerebrum DAO, we initiate our genesis distribution event, wherein 5% of our total supply will be made available through an impartial and transparent smart contract auction on the Ethereum Mainnet using the Bio.xyz Launchpad. Emphasizing transparency and inclusivity, the initial valuation of tokens will be determined by the auction participants, the community.

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4.3.3. Genesis Token Terms and Conditions

Genesis token allocations to Core Team & Community, Strategic Partners, and Presale Purchasers all come with restrictions on the token allocation based on the

contributions made to the initial formation and growth of the DAO, and ongoing expectations of further contributions to the DAO's success. These restrictions are highlighted below:

- **Core Team and Community Member** token allocations will be subject to a vesting schedule. The vesting terms are as follows:
  - 12 month vesting cliff after which 25% of the token allocation will be vested
  - Remaining 75% of tokens will vest linearly for an additional 36 months (48 month total vesting period)
  - Vesting is managed via a Sablier contract.
- **Strategic Partners** include Molecule's Bio.xyz accelerator and BMM Springboard LLC (BMM) which is an investment entity controlled by founding steward Brian Magierski.
  - Bio.xyz tokens will be vested 50% up-front
  - Remaining tokens will vest linearly over 48 months with a vesting commencement date of the initial contract engagement of July 2023
  - Bio.xyz has agreed to use 50% of its token supply to support liquidity pools for the NEURON token
  - Bio.xyz will vest their tokens on the Molecule vesting contract
  - BMM tokens will be vested 50% up-front
  - Remaining tokens will vest linearly over 48 months managed by a Sablier vesting contract with a vesting commencement date of July 2023 reflecting when early capital and strategic commitments began.
- **Presale Funders** include individuals and entities that are committed to DeSci and are consider mostly to be long term HODLrs. This pool was carefully selected for strategic value and future capital and strategic contributions. While this group will get a discount to the final token sale, they will be required to lock their tokens for a period of time. The terms are below:
  - 25% of presale tokens are vested upfront
  - The remaining 75% of presale tokens will vest linearly over 24 months.
- **Public Auction Purchasers** are fully-vested and immediately available. Purchasers that wish to contribute more than $1,000 to the token auction will be required to complete a Know Your Customer / Anti-Money Laundering (KYC/AML) clearance before being authorized to bid. The process will be simple and available 3 to 5 days before the public auction begins.

4.4. Community Auction

In a commitment to foster community engagement, Cerebrum DAO designates 5% of the total token supply for a transformative initiative as stated above - the Community Auction. Hosted on the esteemed Bio.xyz Launchpad, powered by the robust Gnosis Auction platform, our Community Auction employs batch auctions, a cutting-edge methodology that combines efficiency and transparency.

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This innovative auction model departs from traditional fundraising methods like Initial DEX Offerings (IDOs) by adopting a systematic approach. Unlike one-time IDOs, batch auctions systematically collect multiple bids over a specified time frame, fostering dynamic market

interactions. This structured process mitigates concerns such as front-running, establishing a fair and transparent environment in alignment with Cerebrum DAO's commitment to building a resilient and inclusive ecosystem.

By adopting batch auctions, we empower our community with a voice in determining token prices, reinforcing the principles of decentralization. This method not only mitigates potential manipulations but also ensures that all community members, regardless of the size of their bids, have an equal opportunity to contribute to and benefit from the token distribution process.

It's essential to note that the Bio.xyz Launchpad serves as a user-friendly frontend, facilitating seamless access to the Gnosis Auction platform. By leveraging this powerful combination, Cerebrum DAO aims to provide an enhanced experience for our community, fostering a sense of ownership and inclusion in the development of our ecosystem.

5. Research Evaluation and Deal Flow Process

5.1 Focus areas

Cerebrum DAO is broadly focused on funding translational brain- and nervous system research. In order to prioritize projects, we divided the projects into therapeutics, early diagnostics, supporting areas (such as platforms for drug screening, organoids), prevention, and care. The initial focus area is neurodegenerative disorders including Alzheimer's Disease and related dementias, motoneuron diseases, etc. In this respect we aim to initially focus on therapeutics and early diagnostics.

In order to streamline the funding and evaluation process Cerebrum DAO announces several calls for funding per year. For this, the Neuroscience Working Group assesses underfunded research areas and sets DAO priorities. Due to the polygenic nature of major brain disorders and relation to aging, the Neuroscience Group takes into account genetic risk, environmental risk factors and involvement of aging mechanisms.

5.2 Deal Flow Process

Research proposal evaluation is conducted by the Cerebrum DAO Neuroscience Dealflow Working Group members according to the predetermined assessment criteria. At the initial stage, proposals are screened for the correspondence to the current call and the Cerebrum DAO mission, internally established Proposal Readiness Levels, and the Technical Feasibility to progress to the next level. Additionally, the Intellectual Property situation is assessed.

At the next stage, proposals undergo internal and external peer review. The results of the peer-review are designed to strengthen or weaken the initial assessment. This step is followed by the community presentation and decision to recommend the study for funding or not. The final step includes the community vote, establishment of the legal contracts, transfer of the funding and project execution by the researcher.

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When a research project is executed and if the hypothesis is confirmed, the project moves to the next translational level. At this stage the research team and the Cerebrum DAO team determine the next steps and the required resources to advance the project to the next stage.

6. Intellectual Property Rights Management

6.1 Intellectual Property Rights

Traditionally Intellectual property rights refer to the legal rights given to individuals or organizations for their creations or inventions. These rights grant exclusive rights to the creators or inventors to control, translate and protect their intellectual property. In the space of neuroscience this may include patents, trade secrets and copyrights for software.

Tokenization of Intellectual Property rights refers to the process of converting rights to an asset into a digital token on a blockchain. In the context of neuroscience research, this could involve the creation of digital representations of research findings, patents, prototype designs, or data sets.

Cerebrum DAO is interested to involve and incentivize researchers to translate their projects into therapies and diagnostic or prevention products for brain health. Therefore, the IP transfer rights will be agreed with each involved researcher and their organizations.

6.2 Intellectual Property Non-Fungible Tokens (IP-NFT)

Non-Fungible Token (NFT) is a unique digital identifier that cannot be copied, substituted, or subdivided, that is recorded in a blockchain, and that is used to certify authenticity and ownership (as of a specific digital asset and specific rights relating to it). NFTs evolved as a representation of assets (like digital art, music) on a blockchain. [1]. With relation to intellectual property rights in the framework of DAO the special type of IP-NFTs were developed.

Intellectual Property Non-Fungible Token (IP-NFT) is a hybrid legal-smart contract minted by Cerebrum DAO using the Molecule Protocol. It enables Cerebrum DAO to fund brain research through tokenization of intellectual property rights. IP-NFT provides a legal bridge between intellectual property law and smart contracts. In practice it consists of Research agreement and assignment agreement.

- **Legal Contract 1: The Research Agreement (**Sponsored Research Agreement or a similar type of contract such as a Joint Development Agreement**)** between the Cerebrum DAO and the academic institution, independent researcher or any other entity applying for funding. This agreement defines terms, conditions, milestones and deliverables of the funded project. It includes provisions for confidentiality, intellectual property rights, data ownership, and publication of results. It may also specify the terms of any licenses or patents that may result from the research and additional terms.

- **Legal Contract 2: The Assignment Agreement** serves as the bridge between legal contract and smart contract and assigns the IP and R&D data rights developed as a result of funded research to the Cerebrum DAO, the owner of IP-NFT.

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6.3 Intellectual Property Tokens (IPTs)

Intellectual Property Tokens (IPTs) pioneer an innovative, transparent, and secure platform, revolutionizing the funding landscape for IP projects. Through this platform, individuals can seamlessly engage with and support research endeavors that resonate with their specific interests and values. By enabling fractional ownership of intellectual property, IPTs introduce a fresh approach to broadening the investor base, effectively mitigating the risk inherent in funding high-potential early-stage research.

For researchers IPTs offer a newfound and accessible funding avenue precisely when it's most crucial—oftentimes when traditional funding sources tend to overlook such projects. This democratization of investment not only empowers researchers with additional financial resources and the opportunity to share in the long-term value they create but, most importantly, ensures that groundbreaking ideas and projects receive the necessary support to thrive, thereby fueling innovation and expediting the development of life-saving therapies.

IPTs have the potential to **mitigate the replication crisis** by fostering transparency, incentivizing replication efforts, staging new investment specifically to tangible milestones that are verified by replication, and promoting collaborative research. Leveraging blockchain technology, IPTs offer transparent records of research findings and associated intellectual property rights, simplifying access to existing research for replication studies. Moreover, by providing rewards or royalties for successful replication, IPTs can be used to incentivize researchers to prioritize replication efforts, ensuring the reliability and reproducibility of scientific findings.

Additionally, IPTs facilitate collaborative research by enabling fractional ownership of intellectual property, encouraging researchers to pool resources and expertise for more robust replication studies. In essence, while not directly facilitating replication, **IPTs create a mechanism that supports the transparency, incentivization, and collaboration necessary for successfully translating research into real-world solutions in a capital-efficient and transparent manner, measured by milestones validated by replication each step of the way.**

7. Conclusion

Cerebrum DAO addresses one of the greatest challenges we face in humanity: preserving brain health and finding solutions to neurodegeneration. Decentralized Science and IP-NFTs provide a vehicle to accelerate project funding of translational projects from research to products and interventions that can make a difference in the coming years and decades. The flexibility of the DAO structure combined with Decentralized Science methods can be extended from funding to operational support in the future. Data collection, direct trial support and the development of intervention designs and pharmaceutical targets can also be addressed as the roadmap of Cerebrum DAO evolves. The strength and participation of the Cerebrum DAO token holders and community are key to building a sustainable movement.

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