

## Development Update: AlgoraeOS Artificial Intelligence Biopharmaceutical Predication Platform for Drug Discovery

### Highlights:

- *Data acquisition and customisation for AI biopharmaceutical prediction platform advances.*
- *Gadi supercomputer with capacity of over 10 quadrillion operations per second being used for AlgoraeOS algorithm and subsequent AI operation.*
- *First version of AlgoraeOS AI platform on schedule and anticipated by Q3 of 2024, with subsequent versions being progressively upgraded over a period of at least 3 years.*
- *Development staff supported by CSIRO grant funding have been allocated specific tasks, including for artificial intelligence system development.*

Melbourne, Australia, 08 March 2024: Algorae Pharmaceuticals Limited (**Algorae** or the **Company**) (ASX code: 1AI) is pleased to provide the following update on Algorae Operating System (AlgoraeOS).

AlgoraeOS is a proprietary artificial intelligence (AI) biopharmaceutical prediction platform being developed by the Company in collaboration with AI experts from the University of New South Wales (UNSW). AlgoraeOS is designed to predict synergistic combination drug targets using machine learning, deep learning, and neural network algorithms within the setting of the AlgoraeOS Database – a vast compilation of medical and scientific data curated for the purpose of AI drug discovery within AlgoraeOS.

Anticipated to be operational in Q3 of 2024, AlgoraeOS will generate fixed dose combination drug targets that will expand Algorae's therapeutic pipeline or may be licensed to third parties for consideration. Data modules will be added ongoingly to the AlgoraeOS Database and the AI platform will be further refined in subsequent versions of AlgoraeOS over a period of at least three years to improve its predictive capabilities.

Data acquisition and customisation to underpin AlgoraeOS Database is currently underway across four key pillars of information, which are: drug data, cellular data, chemistry, and biological data. Initial acquired data being formatted and inputted to the database cover scientific and medical fields including chemical structure, clinical drug information, gene expression and drug perturbation data. Information acquired to date include specific databases from some of the largest pharmaceutical companies in the world, originating most significantly from Merck and Co., Inc (Merck) and Novartis AG.

AlgoraeOS has access to the most powerful supercomputer in the Southern Hemisphere, called 'Gadi', which is operated by National Computational Infrastructure (NCI Australia) and previously used for the likes of climate modelling and natural disaster prediction. Gadi, meaning 'to search for' in the language of the Ngunnawal people, contains more than 250,000 CPU cores, 930 Terabytes of memory and 640 Nvidia GPUs. The supercomputer has peak operational capacity exceeding 10 petaflops, or 10 quadrillion floating-point operations per second, and will provide significant computational leverage to facilitate the AI interrogation of the vast scientific and medical information within the AlgoraeOS Database once completed.



**Figure 1: the Gadi supercomputer incorporates rows of CPUs and GPUs within a water-cooled environment to facilitate computing capacity of over 10 quadrillion operations per second.**

Since collaborating with UNSW in October 2023, and appointing project leader Associate Professor Fatemeh Vafaei, Algorae has subsequently appointed three full time development staff. Two of those development staff have been supported by funding from the CSIRO Next Generation AI Graduate Program whereby CSIRO provides approximately 2/3<sup>rd</sup> of the funding required for the development staff, while Algorae provides 1/3<sup>rd</sup> of the funding over a three-year term. A fourth full time member, also eligible for CSIRO grant funding, is expected to join the team shortly as multiple candidates with sophisticated pharmacology experience are currently being considered for the role.

#### **About fixed dose combination drugs**

Fixed dose combination drugs are medicines that comprises two or more active pharmaceutical ingredients combined in a single dosage form. Developers may leverage existing data generated for each individual drug by other R&D companies and organisations over decades to develop improved pharmaceutical treatments. Advantages of fixed dose combination drugs include:

- Enhanced efficacy: combining drugs with different mechanisms of action can lead to a more potent and synergistic therapeutic effect.
- Reduced side effects: combining drugs may allow for lower individual doses of each drug, minimising side effects.
- Broad spectrum of activity: combination drugs can be effective against a wider range of targets, pathogens, or disease processes.
- Optimized drug delivery: formulating multiple drugs in a single dosage form allows for more precise control over drug release and delivery. This can improve the pharmacokinetics and pharmacodynamics of the drugs, leading to better therapeutic outcomes.

**This announcement has been approved by the Board of Directors of Algorae Pharmaceuticals Limited.**

**End**

For more information, please visit [www.algoraepharma.com](http://www.algoraepharma.com)

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### **About Algorae Pharmaceuticals**

Algorae is a pharmaceutical development company focussed on addressing unmet medical needs through the discovery and development of novel treatments. The Company has assembled a proficient R&D team and established collaborations with reputable academic institutions to advance its promising drug candidates, which include AI-116 for dementia, AI-168 for cardiovascular disease and NTCELL for Parkinson's disease. Algorae intends to expand its therapeutic pipeline using a proprietary artificial intelligence (AI) drug discovery and development platform. Known as Algorae Operating System (AlgoraeOS), the AI platform leverages extensive medical and scientific databases from various disciplines within an advanced system at the intersection of AI and pharmaceutical research. By employing machine learning, deep learning, and neural networks, the aim of AlgoraeOS is to uncover synergistic fixed dose drug combinations that lead to the development of novel and effective treatments for any medical condition, aligning with Algorae's commitment to address unmet medical needs. Algorae is listed and publicly traded on the Australian Stock Exchange (ASX: 1AI), providing investors an opportunity to participate in the Company's growth.

### **Forward-looking Statements**

This document may contain certain forward-looking statements, relating to Algorae's business, which can be identified by the use of forward-looking terminology such as "promising," "probable," "plans," "anticipated," "will," "project," "believe," "forecast," "expected," "estimated," "targeting," "aiming," "set to," "potential," "seeking to," "goal," "could provide," "intends," "is being developed," "could be," "on track," or similar expressions, or by express or implied discussions regarding potential filings or marketing approvals, or potential future sales of product candidates. Such forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause actual results to be materially different from any future results, performance or achievements expressed or implied by such statements. There can be no assurance that any existing or future regulatory filings will satisfy the FDA's and other health authorities' requirements regarding any one or more product candidates, nor can there be any assurance that such product candidates will be approved by any health authorities for sale in any market or that they will reach any particular level of sales. In particular, management's expectations regarding the approval and commercialisation of the product candidates could be affected by, among other things, unexpected clinical trial results, including additional analysis of existing clinical data, and new clinical data; unexpected regulatory actions or delays, or government regulation generally; our ability to obtain or maintain patent or other proprietary intellectual property protection; competition in general; government, industry, and general public pricing pressures; and additional factors that involve significant risks and uncertainties about our products, product candidates, financial results and business prospects. Should one or more of these risks or uncertainties materialise, or should underlying assumptions prove incorrect, actual results may vary materially from those described herein as anticipated, believed, estimated, or expected. Algorae is providing this information and does not assume any obligation to update any forward-looking statements contained in this document as a result of new information, future events or developments or otherwise.