pure biologics®

SEPARATE QUARTERLY REPORT

FOR PERIOD 01.01.2022-31.03.2022

Wrocław, May 16, 2022

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I. SELECTED FINANCIAL DATA

The selected financial figures presented in the report have been converted into euro as follows:

1) Items relating to the statement of profit or loss and other total income, the cash flow statement and the statement of changes in equity were converted at an exchange rate representing the arithmetic average of the exchange rates published by the National Bank of Poland:

- period between 01.01.2022 – 31.03.2022: 4,6472 zł
- period between 01.01.2021 – 31.03.2021: 4,5721 zł

2) The balance sheet items were converted according to the average exchange rate announced by the National Bank of Poland, in force on the balance sheet date; this exchange rate amounted to:

- as on 31 March 2022: 4,6525 zł
- as on 31 December 2021: 4,5994 zł
- as on 31 March 2021: 4,5721 zł

	Period closed on 31.03.2022	**Period closed on 31.03.2021**	**Period closed on 31.03.2022**	**Period closed on 31.03.2021**
	PLN thousand	PLN thousand	EUR thousand	EUR thousand
Operating revenues	3 112	3 709	670	811
Total operating costs	8 572	6 770	1 845	1 481
Operating profit (loss)	(5 450)	(3 062)	(1 173)	(670)
Profit (loss) before tax	(6 360)	(3 132)	(1 369)	(685)
Net profit (loss)	(6 360)	(3 132)	(1 369)	(685)
Net cash flows form operating activities	2 758	(10 989)	593	(2 403)
Net cash flows from investment activities	24 363	(85)	5 243	(19)
Net cash flows from financial activities	(571)	53 716	(123)	11 749
Total net cash flows	26 550	42 643	5 713	9 327

	As on 31.03.2022	**As on 31.12.2021**	**As on 31.03.2022**	**As on 31.12.2021**
	PLN thousand	PLN thousand	EUR thousand	EUR thousand
Total assets / liabilities	49 315	47 190	10 600	10 260
Tangible assets	5 673	4 175	1 219	908
Current assets	43 642	43 015	9 380	9 352
Equity capital	34 215	39 486	7 354	8 585
Liabilities and provisions for liabilities	15 100	7 704	3 246	1 675
Long-term liabilities	2 509	2 155	539	468
Short-term liabilities	12 591	5 549	2 706	1 206
Weighted average number of ordinary shares	2 254 000	2 221 123	2 254 000	2 221 123
Profit (loss) per ordinary share (in PLN / EUR)	**(2,82)**	**(1,41)**	**(0,61)**	**(0,31)**
Number of shares at the end of the period	2 254 000	2 254 000	2 254 000	2 254 000
Book value per share (in PLN / EUR)	**15,18**	**17,78**	**3,26**	**3,87**

II. BASIC INFORMATION ABOUT THE ISSUER

Issuer's company:	PURE BIOLOGICS S.A.
Legal form:	Joint-stock company
Country of incorporation:	Poland
Registered office and addres:	54-427 Wrocław, ul. Duńska 11
Phone number:	+48 570 00 2829
E-mail address:	info@purebiologics.com
Internet address:	www.purebiologics.com
National Court Register number:	0000712811
REGON number:	021305772
Tax Identification Number:	8943003192

1. Management Board

As on 31 March 2022 the Management Board consists of Mr Filip Jeleń who serves as the President of the Management Board and Mr Romuald Harwas who serves as the Vice-President of the Management Board.

As on the day of the issue of this report the Board has been extended and consists of:

- Mr Filip Jeleń – President of the Management Board,
- Mr Romuald Harwas – Vice-President of the Management Board,
- Mr Petrus Spee – Vice-President of the Management Board.

2. Supervisory Body

As on 31 March 2022 and as on the date of this report, the Supervisory Body consists of:

- Mr Andrzej Trznadel – Chairman of the Supervisory Body,
- Mr Tadeusz Wesołowski – Deputy Chairman of the Supervisory Body,
- Ms Julia Bar – Member of the Supervisory Body,
- Mr Andrzej Kierzkowski – Member of the Supervisory Body,
- Mr Mariusz Czekała – Member of the Supervisory Body.

Audit Commitee

As on 31 March 2022 and as on the date of this report, the Audit Commitee cosists of:

- Mr Mariusz Czekała – Chairman of the Audit Committee,
- Ms Julia Bar – Member of the Audit Committee
- Mr Andrzej Trznadel – Member of the Audit Committee.

Mr Mariusz Czekała is a member of the Audit Committee who fulfils the conditions of the Act on Statutory Auditors concerning having knowledge and skills in accounting or auditing, while Ms Julia Bar has knowledge of the industry in which the Company operates. Julia Bar and Mariusz Czekała are also the independent members within the meaning of the Act on Statutory Auditors.

3. Brief description of the Company's activities

Pure Biologics specialises in research and development in the field of innovative biological medicines, medical devices with therapeutic and diagnostic applications. The Company also conducts contract research for pharmaceutical and biotechnology companies particularly in the area of selection of active molecules (antibodies and aptamers) for medical applications (drugs and therapeutic procedures, diagnostics).

Fig. 1: Scope of activity of the Company.

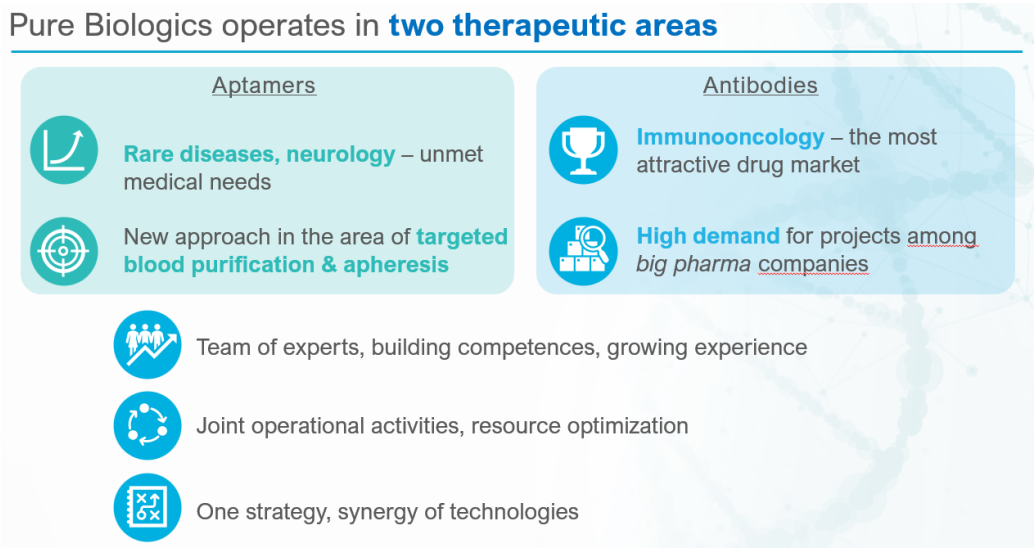
Innvovative segment	Contract research segment
Own R&D projects – innovative biomedical solutions • Biopharmaceuticals • Therapeutic medical devices • Diagnostic particles	Contract research for pharmaceutical companies • Gaining experience • Cooperation with big pharmaceutical companies – both polish and foreign

Development of innovative drugs and therapies

The company's core business is the development of new drugs, extracorporeal therapies and diagnostic methods based on its extensive experience in areas such as molecular biology, cell biology, protein engineering and biochemistry, kinetics of biochemical interactions, pharmacology of biological molecules, or in vitro selections from combinatorial libraries.

The work focuses on the study of molecules (proteins and nucleic acids, i.e. aptamers) and their use in specific environments and conditions. The Company targets projects that develop active molecules that are first-in-class in the category of drugs and therapeutic solutions. This translates into minimising the risk that competitors achieve positive results in development programmes for drugs with an identical or highly similar mechanism of action earlier.

Fig. 2: Scope of activity of the Company.



The Company's in-house Business Intelligence Team monitors the thematic areas of research conducted by other entities and the results obtained by them, based on publicly available information and industry knowledge.

Research and development programmes

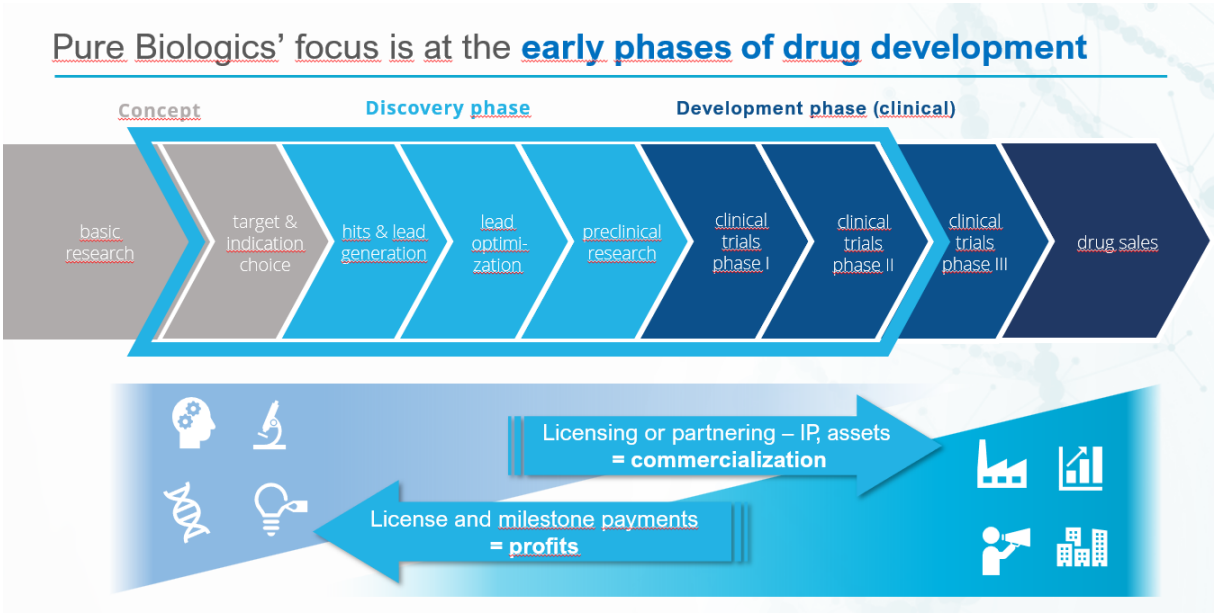
The company operates two proprietary therapeutic research and development programmes. The first programme, called PureBody, targets the development of 3 innovative first-in-class biological drugs based on antibodies acting in the field of immuno-oncology. Projects under this programme address diseases such as colorectal cancer (CRC), non-small-cell lung carcinoma (NSCLC) and triple negative breast cancer (TNBC).

The second programme under way, called AptaMed, includes 2 projects for the development of new therapeutic medical devices (biomolecular filters) based on active molecules from the aptamer group. The projects are conducted in the area of rare severe neurological diseases such as Neuromyelitis Optica (NMO) and Myasthenia Gravis.

In the area of oncological diseases, the Company is also conducting a consortium research project related to a targeted therapy strategy for the treatment of melanoma. It is a proof-of-concept (PoC) project and involves a drug candidate based on an aptamer carrier in conjugate (combination) with an existing cytotoxic drug.

The Company's expertise allows it to carry out all drug and therapeutic medical device development projects from the molecular target selection phase to the in vitro testing phase inclusive - entirely based on its own scientific and technological resources. This allows for complete independence from licensing drug candidates from other entities, universities or third-party service providers and gives us control and complete confidentiality of the research conducted at its initial, most sensitive stage. Providing funds, including NCBR funding, to conduct research in the projects listed above up to the first phase of clinical trials (pre-clinical and clinical trials commissioned to specialised CROs) will ensure that the assets developed will be commercialised at the time when their expected value is the greatest.

Fig. 3: Phases of drug discovery and Pure Biologics' area of activity.



Innovative R&D projects supported by grants

Pure Biologics actively uses public funds to support R&D activities in companies and has repeatedly successfully applied for funding for its projects at both the NCBR and the European Commission. Only in the period 2018-2019, the Company obtained nearly PLN 106 million in funding for the implementation of projects scheduled for 2018-2023.

Science and technology projects

The objective of the scientific and technological projects carried out by the Company is the continuous development of competencies based on proprietary solutions and maximising the areas of IP and know-how utilisation. The implementation of this objective includes testing platforms developed by the Company, exploring the possibilities of their commercial applications beyond those arising from the Company's own drug and therapy development projects, and exchanging knowledge and experience between recognised foreign scientific and research units and teams in Europe and worldwide. The collaboration carried out on research projects builds international relationships and provides references for the research concepts and subject matter expertise of Pure Biologics' scientists. Following the initial commercialisation of the Company's major projects, these activities form the basis for initiating and developing further ultra-innovative programmes in the future.

Contract research

Pure Biologics is a leader in in vitro antibody and aptamer selection technology on the Polish market and is also one of the few commercial entities acting in this field in Europe. Thanks to its research and development projects (technology platforms), it has a real opportunity to further strengthen its market position. In vitro selection is an efficient and cost-optimal way to obtain active molecules (antibodies and aptamers) that bind a selected molecular target. This is both the basis for the development of biological drugs and diagnostic tests for internal projects, and technology that can be

successfully used for the provision of external contract research, the volume and margins of which will multiply when the above platforms are used as a service.

Pure Biologics' extensive expertise and solid scientific basis, together with the innovation and uniqueness of the technological solutions it offers, means that it is able to carry out complete drug development projects on behalf of pharmaceutical companies, from the discovery stage through to early pre-clinical testing.

Human resources, infrastructure facilities and standards to commercialize R&D projects

The company has modern and well-equipped laboratory and office facilities with an area of approximately 1,000 m2, located in the Wrocław Technology Park, in which it employs 80 researchers, 40% of whom hold a PhD degree in biological or related sciences (a total of 86 specialists providing direct services to the scientific and research segment).

The Company engages staff on the basis of employment contracts as well as commissions activities on the basis of civil law contracts. As on 31 December 2021, 101 persons were employed under a contract of employment, 62 of which have higher education and 38 have higher education with university degree.

Competitive advantage

Unique competences in areas of antibodies' and aptamers selection and of proteins' production and analysis.

Out of the ten world's best-selling drugs eight are protein-based ones, including antibodies. According to the knowledge of the Management Board based on publicly available information, the Issuer is the only commercial entity in Poland that has its own technology of antibodies' and aptamers' selection. Moreover the Issuer is one of the few entities in the world that works over this subject. Due to the degree of advancement of its R&D projects, the Issuer has a real possibility of strenghtening its market position. Domestic and international biotechnological and pharmaceutical companies as well as R&D institutes and universities are the Issuer's clients.

Research projects on immunooncology which is a breakthrough in fight against cancer.

The Company's own research projects focus on searching for drugs and therapies supporting human immune system. This direction of research in cancer treatment in recent years became the most important in cancer control. Immunooncologic treatments brought into the market are rarely limited to one tumour type, turning out to be efficient in at least several types of illnesses. Therefore it broadens their range of application and number of potential patients. An important issue is also the use of so-called combination therapies, in which two different treatments are used (both of the immunooncology field or a treatment consisiting in combining immunooncologic drug with classical anti-cancer therapy, for example chemo- or radiotherapy), which additionally broadens the range of indications for use of this type of drugs. Taking into account the immunooncology's development in recent years, systematically confirmed by partnering and licensing transactions which, in value erms, dominated the pharmaceutical market, one can qualify the future positive results of the Company's research projects among assets with significant profit potential.

Research projects on rare diseases' treatment.

The second medical area of Company's interest are rare diseases, also known as orphan diseases. These conditions are mostly genetically dependent, ocurring in the population fewer than five out of ten thousand cases (lower than 0,5‰), in most cases appearing in child's age. There are over six thousand diseases of this type worldwide, and the total number of patients is estimated at over 6% of the European population, i.e. over 30 million people. These diseases vary in etiology, symptoms and effects, but they are usually associated with (i) heavy course and high mortality, (ii) low public awareness, often among medical staff, and (iii) a significant shortage of effective therapies - so far, only about 5% of these diseases have been treated. Due to the social impact and the cost of care, there is significant social, administrative and institutional support for the development of new treatments for rare diseases.

Focus on first-in-class drugs.

The Company's own research projects focus on development of therapies and active molecules being the first-in-class among drugs and therapeutic solutions. This translates into higher value of the assets generated, faster regulatory paths, higher probability of commercialization, and a reduction of the risk that competitors may have previously achieved positive results in drug development programmes with identical or closely similar mechanisms.

Total control over the key discovery phase of drug development.

Company's competence allow it the execution of projects of drug and medical device development from the phase of choosing the molecular target to the phase of in vitro tests inclusive, entirely basing on its own scientific and technological resources. This ensures full independence in obtaining (licensing) drug candidates from other R&D entities or universities, and from services provided by third parties to the pre-clinical phase. This translates into control and confidentiality of the studies carried out at all stages, in particular at their initial, most sensitive stage. Providing funding, including funding from the NCBR, to carry out research into the above projects up to the first phase of clinical research (pre-clinical studies are commisioned by specialized entities of CRO type), makes the projects to be commercialized only when their value is high.

The first Polish entity focusing on the innovative biological drugs development.

The Issuer, as the first entity in Poland, started investment sinto new, innovative, i.e. non-generic and non-biosimilar, biologial drugs that is drugs with macromolecule as an active particle, e.g. antibody or aptamer. The experience of the research team, gathered in recent years in a wide range of renowned research groups in Europe and worldwide, the business know-how and the secure and attractive operating model developed, allow the Company to develop its business, which is now among the leading trends in global pharmaceuticals.

Possibility to generate large numbers of new leading particles with self-designed technology platforms.

The technological platforms PureSelect2 (former PureSelect) and PureApta developed by the Company, allow it each time to generate numerous bioparticles binding molecular target – adequately antibodies and aptamers – by using in vitro techniques (without animals' imunisation) and therefore relatively quickly and at low cost. From the generated wide particle pool, those variants are selected that have the parameters best suited to the task ahead and can be further optimized. Importantly, these platforms can work in parallel on a number of molecular targets and significantly reduce the early phase of the project (the so-called hit generation phase).

III. ABBREVIATED INTERIM FINANCIAL STATEMENT

The Abbreviated Interim Financial Statement for the period of three months, closed on 31 March 2022, prepared in accordance with the International Financial Reporting Standards (MSSF) appproved by the European Union makes an appendix to this report.

IV. COMMENT ON FINANCIAL RESULTS

1. Comment on the separate statement of profit and loss and other total income

The Company's financial situation as at the reporting date is very good. As on 31 March 2022 the value of cash was PLN 32 728 thousand.

The Company fulfills its commitments as they come and the cash balance allows it to maintain its current liquidity and to pay for planned investments in laboratory infrastructure development and innovative projects. The management of the Company predicts that in the next quarters the financial situation will be stable. The Issuer's future revenues are strongly dependent on the commercialization of research projects.

Revenue from commercial services

In the position of revenue from commercial services of the separate statement of profit and loss and other total income, prepared again according to MSR/MSSF for the Q1 2002, the Company showed PLN 114 thousand of value. In the comparable period, i.e. in the Q1 2021 PLN 2 thousand was noted. During the reported period, the company focused on carrying out R&D works, although this does not mean the total resignation of the Company from commercial activities, as is the case with the contracts in the first quarter of the current year. These are, among others, a selection of aptamer recognizing protein target indicated by the customer, using PureApta technological platform and a customer from France, who conducts R&D works over protein preparation for therapeutic applications.

Cost of services sold and gross profit from sales

The value of costs of services sold in the Q1 2022 is PLN 50,45 thousand, which generated PLN 63,67 thousand of sales margin, giving a satisfactory level of 55,8% profitability.

Operating costs

The value of operating costs of PLN 8 572 thousand in the current quarter (PLN 6 770 thousand in Q1 2021; +26,6%) represents the aggregated costs incurred by the Company in all areas of business activity, i.e. R&D, contract research, administrative and management costs. Capitalized R&D costs did not occur during the reported period. The root cause of the increase in costs is the intensification of R&D works, the extension of infrastructure facilities (preparation for relocation to a new facility), the increase in human resources, in particular highly specialized foreigners, and unfavorable macroeconomic conditions such as exploding inflation and the outbreak of a war in Ukraine.

In cost structure by kind, the largest part, 44,2%, is determined by remuneration: PLN 3 791 thousand. In comparison to the Q1 2021 (PLN 3 332 thousand) a 13,75% increase was noted. It is caused by the employment of, among others, medical director and highly qualified foreign specialists, who joined the Company after 31.03.2021. In total, together with social insurance and other benefits, remuneration represents 51,16% of the Company's total costs and are the subject of a special analysis of the Management Board. The second largest item in the cost structure is outsorced services (PLN 1 615 thousand), which accounted for 18,8 % of operating costs during the reported period and increased by 52,45% yoy. The main component of these costs is the license agreement with Twist Bioscience

Corporation, which did not occur in the Q1 2021. Another important cost is the consumption of materials and energy, which absorbed 15,2% of the total operating costs and increased by 25,5% compared to the Q1 2021. The main component of this heading is the consumption of reagents and laboratory materials, which have been subject to manufacturer inflation, the reading of which is significantly higher than consumer inflation. The largest percentage increase was noted at the position of depreciation and amortisation: +189% yoy. The reason for this is the acquisition of new equipment and equipment for the laboratory, and therefore a higher depreciation charge.

Revenue from subsidies

In the position of subsidies in the Q1 2022 the Company showed PLN 2 998 thousand and this is 19,1% less than in comparative period. This change has been made by several factors. On the one hand, the Company finished the execution of phases of projects which guaranteed a higher level of reimbursement of costs, on the other, incurred quite a considerable amount of ineligible costs in the projects, which resulted in a reduction in the basis for calculating the grant. The highest revenue in the Q1 2022 was generated by the PB003 – PureActivator project: 35,4% of granted revenue. In the reported period 73,4% of revenue from subsidies (PLN 2 201 thousand) were generated by "antibodies" projects and it was almost of 10 pp moe than in the comparative period.

Project costs

In the Q1 2022 the Company reported in profit and loss and other total income PLN 4 938 thousand of project costs and this is PLN 243 thousand (+5,18%) more than in comparative period. Despite the lower growth rate than noted in previous periods, which is the "base effect", this shows the increase in the Company's R&D activities and the systematic transition to successive, increasingly capital-intensive stages of projects. By analyzing the cost structure, the largest share (32,3%) of project costs in Q1 2022 is project PB004 - PureBike, followed by project PB003 - PureActivator with a 28,6% share in R&D costs. The increase in project costs and the simultaneous decrease in revenue from subsidies is due to both a higher share of ineligible costs and a lower level of co-financing resulting from the company’s expected result of the higher share of external contractor costs, which is characteristic of the later stages of the R&D works.

Profit (loss) on operating activities

Loss from operating activity for Q1 2022 in the amount of PLN 5 450 thousand is the result determining the aggregated activity of the Company. In the same period of 2021, the loss from operating activities amounted to PLN 3 062 thousand. The losses were mainly due to R&D performance and the increase in operating costs due to the adverse macroeconomic factors mentioned above.

When evaluating and analyzing this item in the profit (loss) statement, account should be taken of the fact that the growing scale, number and value of its R&D projects, adopted for strategic purposes of the Company, will increase the level of the Company's own share of the costs of the projects carried out. This will have a direct impact on the value of the loss generated on the operating activity, but the Company's own share in the costs incurred in carrying out R&D projects is treated by it as an investment in projects with a potential above-average rate of return, in case of their successful completion and commercialization.

Although the size of the Company's generated result on the sale of contract research may mitigate the scale of this process, the proceeds from commercial activities are expected to play a role in the Company's financial model in general to support its own participation in the implementation of R&D projects. First, they are intended to secure the Company's operations in the basic scope of its organizational infrastructure and as a legal entity. The main source of funding for these investments is and will be the capital raised by the issue of shares.

It should be noted that the operating loss in Q1 2022r is expected. The long-term financial model of the Company assumes financing of the growing segment of R&D projects in the coming years mainly from external capital raised.

Net profit (loss)

Net loss in Q1 2022 in the amount of PLN 6 360 thousand results mainly from factors influencing the level of loss from operating activity and results on financial activity. Results on financial activity mainly shaped losses on resale of entities in investment funds (the company was completely out of investment in the current quarter) and interest on leasing agreements for laboratory equipment used in the Company's business.

2. Comment on the separate statement of financial situation

Tangible assets

In this balance sheet item of at the end of Q1 2022 PLN 5 673 thousand, the main component is: "Tangible fixed assets" in the amount of PLN 4 995 thousand. In the balance sheet at the end of Q1 2021 these figures were respectively PLN 5 284 thousand and PLN 4 292 thousand.

In the overwhelming majority (83,7%) these are used under rental agreements, leasing high-tech laboratory equipment for R&D projects.

The second key item of fixed assets is intangible assets. In the reported period they amounted to PLN 663 thousand, representing 11,7% of fixed assets and 1,3% of total assets. The largest item of intangible assets as on 31 March 2022 was the cost of completed development works – PLN 317 thousand. These are PureSelect and PureApta technological platforms.

The value of fixed assets in relation to the comparative period has increased (+7,4%). This is due both to the purchase of several laboratory equipment and to the calculation of depreciation for the existing machinery fleet.

Short-term receivables

Short-term receivables amounting to PLN 10 236 thousand, as on the last day of Q1 2022 are mainly receivables due to subsidies (PLN 9 163 thousand, 89,6%). In Q1 2021, the share of the subsidy receivables (PLN 7 760 thousand) in total short-term receivables (PLN 8 664 thousand) was identical. This item shall aggregate the amounts resulting from the payment applications submitted, whether refunds or the settlement of advances. The decrease in the amount of advances by 19,3% compared to the comparative period results from a change in the settlement cycle with a public partner and does not constitute the amount of working capital frozen by creditors. When settling on an advance payment scheme, the company shall submit its applications with the minimum required frequency. In

accordance with the accepted accounting policy, at the time of the application for a settlement, the Company records the receivables from the NCBR regardless of whether the application accounts for the advance on the Company's accounts or for the reimbursement of costs incurred.

Budget receivables in the amount of PLN 1 038 thousand constitute mainly VAT to be refunded.

Cash

Cash on Company's accounts as on 31 March 2022 amounted to PLN 32 728 thousand. In a comparative period, i.e. as on 31 March 2021, it was PLN 51 599 thousand. The funds are held mainly in Polish currency.

Equity capital

The balance sheet position at the end of Q1 2022 was PLN 34 215 thousand and its reduction in comparison with the end of Q1 2021 and the end of 2021 is a direct result of accumulated losses from the period covered by this report as well as comparable periods.

Long-term liabilities

The long-term liabilities at the end of the reported period amounted to PLN 2 509 thousand and are less than at the end of Q1 2021 by PLN 872 thousand (-25,8%). They represent only 5,1% in the liability structure. This structure is identical to the last day of Q1 2021. These liabilities represent a significant (PLN 2 364 thousand) proportion of the long-term fixed asset installments used under the rent and lease agreement. This item also accumulated in the amount of PLN 102 thousand deferred subsidies, that is, relating to PureSelect2 and PureApta technology platforms. Long-term provisions for employee benefits were also shown in the amount of PLN 42 thousand.

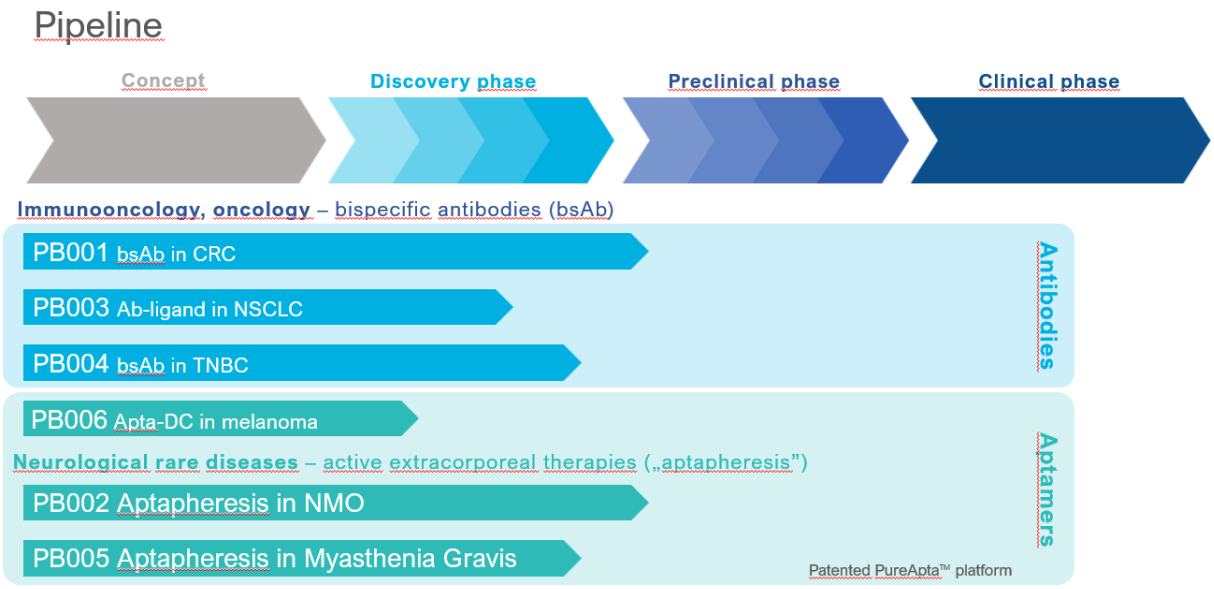
Short-term liabilities

Short-term liabilities at the end of the reporting period amounted to PLN 12 591 thousand and are 21,2% lower than at the end of Q1 2021 when they amounted to PLN 15 974 thousand. In the structure of liabilities, 82,7% are deferred subsidies (advances), 6,7% on financial leasing and only 2,1% on trade and other liabilities. These obligations are settled by contractual terms agreed with suppliers and beneficiaries. In the liability structure, short-term liabilities account for 25,5%.

V. DESCRIPTION OF SIGNIFICANT COMPANY'S ACCOMPLISHMENTS OR FAILURES IN THE REPORTED PERIOD ALONG WITH THE DESCRIPTION OF THE MOST IMPORTANT FACTORS AND EVENTS, UNTYPICAL IN PARTICULAR, INFLUENCING THE RESULTS

1. Execution of own R&D projects

Fig. 4: Progress of the projects



Glossary

- *apheresis* – a medical procedure in which patient's blood is pumped through an extracorporal device in which, like in dialysis, selected blood components are separated and thus the "purified" blood returns to the patient's bloodstream. The kind of removed substances depends on the filter used inside the device.
- *aptamers* – short oligonucleotides, fragments made of the same material as DNA, having a high affinity for the chosen molecular target. In many ways they resemble antibodies and can be used as therapeutic and diagnostic particles.
- *antibodies' library* – a pool of millions of random or partially random protein sequences obtained by genetic and olecular engineering, from which it is possible to obtain new antibodies by phage selection.
- *molecular target* – a macromolecule located on cells of the imune system and/or tumour cells that interacts with the drug, causing the desired therapeutic effect.
- *affinity chromatography* – a method of purifying biological molecules, such as proteins, from complex mixtures (e.g. human blood) which uses the phenomenon of specific interaction between specific molecules.

- *immunoligand* – a macromolecule of natural origin that activates selected cells of the immune system, by binding to them in a specific manner.
- *effector cells* – general term for those cells of the immune system which, upon acivation, destroy pathogens or neoplastic cells (e.g. limphocytes, NK cells).
- *NK cells* – 'natural killer' cells – a group of cells of the immune system that are responsible for innate immunity of the body, including fighting cancer cells.
- *cellular expression system* – antibodies' production system in cultures of mammalian cells.
- *limphocytes* – cells of immune system with various functions, e.g. some subpopulations are responsible for the destruction of pathogens or cancer cells.
- *overexpression in the mammalian expression system* – proces that uses mammalian cells to produce large amounts of recombinan protein, e.g. molecular target.
- *nuclease* – naturally occurring enzymes that degrade DNA or RNA molecules, also used in genetic engineering. Their presence in body fluids can degrade aptamers
- *RT-PCR* (real-time polymerase chain reaction) – a method for the simultaneous miltiplication of DNA or RNA molecules along with the measurement of the amount of the resulting product in real time, used in molecular biology to assess the amount of DNA or RNA in a sample.
- *aptamers' selection, SELEX* – a multi-stage cyclic proces of acquiring new active aptamers, i.e. obtaining active molecules from a wide pool of short random fragments of DNA or RNA that can bind a selected molecular target.
- *phage selection* – a use of pool of genetically modified bacterial viruses (phages) to obtain a new protein sequence – antibody protoplasts – binding a selected molecular target.
- *specificity* – the ability to selectively recognize and bing to a specific macromolecule (matching on the 'key and lock' principle).
- *TNBC -* Triple Negative Breast Cancer cells characterized by a lack of receptor for the hormones: estrogen and progesterone, and one of the endothelial receptors.
- *expressive vector* – gene carrier, artificially introduced into the cel, from which the production of the protein takes place.

Antibody-based immuno-oncology drug development projects

Fig. 5: Antibody-based projects

Project name	Therapeutic area	Indication	Active molecule
PB001 MultiBody	immunooncology	colorectal cancer (CRC)	bispecific antibody
PB003 PureActivator	immunooncology	non-small-cell lung carcinoma (NSCLC)	bimodal fusion protein (antibody-immunoligand)
PB004 PureBIKE	immunooncology	triple negative breast cancer (TNBC)	bispecific antibody

PB001 Drug development project (MultiBody)

Aim of the project

The PB001 (MultiBody) project aims to develop a therapeutic antibody with dual activity for the treatment of cancer. PB001 will be a first-in-class bispecific antibody that simultaneously binds the TIM-3 protein on immune cells and a yet undisclosed antigen on the surface of tumour-associated antigen (TAA) - bsAb TIM-3xTAA. Depletion of cytotoxic immune cells is a major obstacle to immune surveillance of cancer. TIM-3 on the surface of cytotoxic T lymphocytes (CTL) and natural killer (NK) cells, plays a key role in the depletion phenomenon. By targeting TIM-3, PB001 is designed to 'release the brakes' on CTL and NK cells in cancer patients, in order to more effectively eliminate cancer cells. At the same time, PB001 will directly attack cancer cells, exposing them to the immune system and creating anchor points for cytotoxic cells. PB001 will find application in the treatment of colon cancer, which is one of the malignancies defined as an 'unmet medical need' and at the same time it is a market-active therapeutic area with many partnering and licensing deals being observed.

Financing

The project is co-financed by the National Centre for Research and Development (NCBR) under the Intelligent Development 2014-2020 programme. According to the co-financing agreement, the total cost of the project is PLN 32,037 thousand, and the value of the grant is PLN 23,998 thousand. The Company's own contribution in the amount of PLN 8,002 thousand is covered by the Company from the capital obtained as part of the issued shares.

Implementation and results of the project in the reported period

In Q1 2022 the Focus was on obtaining molecular target binding sequences to develop a proprietary bsAb TIM3xTAA molecule.

In order to select the optimal TIM3 protein binding sequence, the sequences previously selected, by phage display, from Twist Biofarma libraries were validated, and subsequent selections were performed, using own library, scFV fragments. A total of several dozen binding sequences have been identified and are currently being tested for binding to human and non-human proteins in order to assess their suitability for human therapy and the feasibility of preclinical studies in animals.

For the hitherto undisclosed second molecular target presented on neoplastic cells (*tumor-associated antigen*, TAA), a fragment of antibody scFV was created based on a binding sequence of bacterial origin, for which binding of the target protein was confirmed. Work is currently underway to develop a complete antibody in IgG format that will be further validated.

As part of the development of tools to assess the biological activity of bispecific antibodies TIM-3xTAA, in vitro tests using PBMC (*peripheral blood mononuclear cell*) cells isolated from the blood of donors were developed. These tests allow the analysis of the effector functions of TIM-3-expressing NK cells, important for the therapeutic effect of the developed antibody, ie 1) activation of immune cells, manifested by the release of proinflammatory cytokines (IFNɣ) and an increase in the level of the CD107a marker; and 2) direct killing of tumor cells by NK cells. Pre-clinical in vitro experiments to study the mechanism of bispecific action of TIM-3xTAA antibody using a model molecule are currently underway. The test results will be directly translated into in vivo mouse tumor models studies, scheduled for the second half of 2022.

In the following months, further work is planned on the development of the own TIM-3xTAA bispecific antibody that meets the criteria necessary for further preclinical and clinical development, as well as the continuation of research on the mechanism of action of the designed molecule using the developed in vitro tests.

PB003 Drug development project (PureActivator)

Aim of the project

The PB003 (PureActivator) project is developing a dual-action anti-cancer therapy that 1) eliminates the number of immuno-suppressive regulatory T cells (Treg) in the tumour microenvironment and 2) recruits cytotoxic immune-cells to directly kill tumour cells. The accumulation of regulatory T (Treg) cells in the tumour microenvironment is associated with an unfavourable prognosis in various types of solid tumours. Integrin αVβ8 and GARP complex are highly expressed on various tumour cells, as well as on activated regulatory T cells (Tregs) where they contribute to immuno-suppression in the tumour environment. Therapeutic antibodies typically use the CD16 receptor on the surface of NK cells to trigger tumour-killing. However, CD16-positive NK cells are scarcely found in solid tumours, contributing to the low efficacy of molecules targeting the CD16 receptor. The PB003 project aims to develop a bifunctional therapeutic antibody (BFP) that specifically recognises αVβ8 or GARP. In addition, the molecule will bind to ULBP2, a natural ligand for the NKG2D receptor, which activates NK cells and is expressed on virtually all cytotoxic NK and T cells present in the tumour environment. The molecule being developed in the PB003 project has the potential to be a breakthrough therapy for the treatment of solid tumours and can be used in most cancer indications. Pure Biologics plans to take the development of the drug candidate through the first phases of clinical trials, after which it will commercialise the project by making the molecule available for licensing.

Financing

The project is co-financed by the National Centre for Research and Development (NCBR) under the Intelligent Development 2014-2020 programme. According to the co-financing agreement, the total cost of the project is PLN 39,905 thousand, and the value of the grant is PLN 30,969 thousand. The Company's own contribution amounts to PLN 8,969 thousand the Company intends to cover this from the capital raised through the conducted share issues.

Implementation and results of the project in the reported period

In Q1 2022, project X focused on developing model bifunctional molecules based on sequences that bind molecular targets known from the literature. These molecules will be used for proof-of-concept in vivo testing. Moreover, during the reporting period, work continued on the development of proprietary bifunctional molecules based on unique binding sequences.

Two variants of the model monoclonal antibodies anty-αVβ8 and two variants of bifunctional anti-αVβ8 molecules were produced, differing in the ability to induce cytotoxicity of immune cells (ADCC) due to the modification of the Fc fragment. Currently, model molecules are verified in biophysical and cellular tests for their ability to bind molecular targets as well as in functional tests for biological activity. In NK cell cytotoxicity assays, bifunctional model anti-integrin αVβ8 antibodies activated NK cells isolated from donor blood and induced cell death of αVβ8-overexpressing lines, but not antigen-negative cells. The data obtained in the cytotoxicity test indicate a greater potential of bifunctional molecules compared to monoclonal antibodies and initially confirm the assumed mechanism of action of the developed bispecific molecules. These results require confirmation in further tests, which are currently underway.

The next step in studying the properties of model molecules is to determine their half-lives in a mouse model expressing the human FcRn receptor; the tender for the above will be announced in the coming weeks. The binding of model molecules to the FcRn receptor was confirmed in biophysical tests. The cross-reactivity of monoclonal antibodies and bifunctional molecules with antigens from other species was also investigated. Based on the results obtained, the production of a second series of compounds for preclinical studies will be launched.

Simultaneously with the research on model molecules, work continued on developing proprietary therapeutic molecules based on unique binding sequences. In the last quarter, the Company continued in vitro tests of its own anti-αVβ8 and anty-GARP-TGFb1 antibodies. 60 anti-GARP antibodies have been produced in IgG format and are currently being validated for the binding capacity of the GARP-TGFb1 complex. It was also confirmed that of the 11 produced anti-αVβ8 antibodies, 4 selectively bind human protein αVβ8 and do not bind homologous protein αVβ6. In the next step, the ability of the produced antibodies to block αVβ8-mediated activation of TGFb1 in vitro will be tested, which will indicate the potential ability of the antibodies to modify the activity of signaling pathways in the tumor microenvironment.

In addition, additional selections for molecular targets αVβ8 and GARP were performed using libraries from Twist Bioscience company. 21 new integrin AVB8 binding sequences have been identified and will be produced in the next steps in IgG format; further sequences are being validated and sequenced. This approach significantly increases the chances of discovering sequences with optimal parameters for the company's own molecule.

In the next period, the Company will continue work on obtaining in vitro results for model molecules, which will constitute the basis for the pharmacokinetic studies planned in 2022 and proof-of-concept studies on a mouse cancer model. Work on its own lead molecule will also continue.

PB004 Drug development project (PureBIKE)

Aim of the project

The objective of the PB004 (PureBIKE) project is to develop an anti-cancer drug based on an anti-ROR1 antibody with significantly improved therapeutic properties compared to competing antibodies currently in early-stage clinical development. PB004 will be a long-acting bispecific killer engager (BiKE) molecule designed to inhibit tumour cell proliferation and migration, as well as induce tumour cell death through natural killer (NK) cell activation and initiation of antibody-dependant cellular cytotoxicity (ADCC) process. The drug under development may have high potential in treating patients with ROR1-expressing tumours, including triple negative breast cancer (TNBC), a particularly aggressive breast cancer subtype, but also ovarian, lung, gastric, prostate cancer and chronic lymphocytic leukaemia. Pure Biologics plans to take the drug to phase one clinical trials when the project will be made available for outlicensing. The PB004 project constitutes an important position in the pipeline of the Company's highly innovative drug-development projects in the segment of immuno-oncology therapies.

Financing

The project is co-financed by the National Centre for Research and Development (NCBR) under the Intelligent Development 2014-2020 programme. According to the co-financing agreement, the total cost of the project is PLN 40,417 thousand and the value of the grant is PLN 29,869 thousand. The planned cost eligibility period lasts until December 31, 2023. The Issuer intends to cover its own contribution to the project in the amount of PLN 10,548 thousand from the capital raised in the conducted share issues.

Implementation and results of the project in the reported period

In Q1 2022, as part of the PB004 project, intensive work was continued on the selection of proprietary anti-ROR1 and anti-CD16a molecules using licensed phage libraries and, for the first time, using the Company's own phage library. As a result of the selections, 25 antibodies anti-ROR1 and 7 antibodies anti-CD16a were generated, which are currently checked for the ability to bind to molecular targets in biophysical and cellular tests. In addition, 24 anti-CD16a antibodies were obtained, which will also be validated. A series of work was also carried out to optimize the molecule format and to select the most advantageous one in terms of the ability to induce ADCC.

During the reported period, the optimization of functional tests was continued, on the basis of which molecules leading to further development in preclinical studies will be selected. These are tests for antibody-dependent cell cytotoxicity (ADCC) of NK cells, inhibition of proliferation and migration of neoplastic cells. Cytotoxicity tests performed so far using model molecules suggest the ability of CD16axROR-1 molecules to activate native NK cells and kill cancer cells that differentially express ROR1. Preliminary data from the cytotoxicity assay indicate that the model molecule is more effective than one of the reference molecules at killing tumor cells. This potential will be confirmed by further tests carried out with the use of tumor cell lines, as well as material collected directly from oncology patients.

In order to assess the activity of molecules in conditions similar to clinical conditions, the project initiated a collaboration with the Institute of Immunology and Experimental Therapy of the Polish Academy of Sciences, which provides access to primary cancer cells from patients suffering from chronic lymphocytic leukemia (CLL). Cells derived from patients will be tested for expression of the

molecular target, and then used to validate the biological activity of CD16axROR-1 molecules in relation to the activity of reference molecules.

During the reported period, by signing an agreement with The Jackson Laboratory, the Company initiated a key stage in the preclinical development of CD16axROR-1 molecules, which is aimed at obtaining pharmacokinetic data, including determining the half-life of the molecule in the blood. Studies of the pharmacokinetic parameters of the molecules will be conducted in mice bearing the human FcRn receptor (neonatal Fc receptor, FcRn). This protein is present e.g. on the surface of blood vessel endothelial cells and determines the half-life of IgG antibodies and blood albumin. By using genetically modified mice, the Company will obtain data that better reflects the pharmacokinetics of the molecule in humans and will be essential for determining the future dosing schedule as well as planning the clinical development of CD16axROR-1 drug.

In the near future, project PB004 plans to further preclinical development of CD16axROR-1 molecules in vitro and in vivo. The goal is to conduct preclinical proof-of-concept studies in mouse tumor models in the second half of 2022. In addition, the validation of own CD16axROR-1 molecule is planned for the second half of 2022. Additionally, by monitoring the clinical trials of reference molecules, project PB004 can draw on experience in research design, patient selection, and compare the effectiveness of its own molecules with that of the reference molecules.

Aptamer-based therapeutic projects

Fig. 6: Aptamer-based projects

Project name	Therapeutic area	Indication	Product / active molecule
PB002 AptaPheresis	neurology/rare diseases	Neuromyelitis Optica (NMO)	biomolecular filter with aptamer
PB005 AptaMG	neurology/rare diseases	Myasthenia Gravis	biomolecular filter with aptamer
PB006 AptaMLN	oncology	melanoma	aptamer-drug conjugate

PB002 therapeutic project (AptaPheresis)

Aim of the project

The PB002 (AptaPheresis) project aims to develop a highly innovative targeted apheresis therapy for the treatment of patients suffering from Neuromyelitis Optica (NMO). NMO is a potential fatal neurological disease caused by auto-immune antibodies that target the spinal cord and optic nerves, leading to severe paralyses of limbs and blindness. It is characterised by varying severity of symptoms; periods of remission alter with exacerbations, which often lead to hospitalisation and a significant increase in treatment costs. Therapeutic options for NMO patients during exacerbation periods are non-selective and are associated with serious side effects. Therefore, there is still an unmet medical need for more efficient NMO treatments, with an improved safety profile and cost-efficient.

Under project PB002, Pure Biologics is developing a medical procedure in which auto-antibodies against aquaporin-4, a pathogenic factor in NMO, are selectively removed from patients' bloodstreams. PB002 is a medical device that will capture auto-antibodies using highly specific aptamers developed using proprietary PureApta technology. PB002 has the potential to significantly improve care of the estimated 300,000 NMO patients world-wide, while reducing treatment costs.

Financing

The project is co-financed by the National Centre for Research and Development (NCBR) under the Intelligent Development 2014-2020 programme. According to the co-financing agreement, the total cost of the project is PLN 14,282 thousand and the value of the grant is PLN 10,542 thousand. The Company intends to cover its own contribution of PLN 3,740 thousand from the conducted share issue.

Implementation and results of the project in the reported period

Another milestone in PB002 project is the production of a prototype medical device for the capture of anti-aquaporin-4 autoantibodies (AQP4) from plasma and its testing in pre-clinical in vivo studies in Q3 2022. Work on the prototype carried out in the last reporting period included, among others, modifying the aptamer sequence to improve its stability in human and animal serum. The first test

batch of the adsorber prototype was also produced. The prototype will be tested in ex vivo studies with human and animal plasma, and ultimately used in planned in vivo animal studies.

In order to increase the nucleolytic stability of the aptamer while maintaining high affinity for the molecular target, the model anti-AQP4 (rAb-X) autoantibody, the natural nucleotides in the aptamer sequence were replaced with their modified counterparts. A total of 32 aptamer variants were tested, of which two were selected with the best stability, while maintaining the molecular target binding properties. The selected molecules were stable at the level of about 96% in human serum and 88% in rat serum after 2 hours of incubation, which is sufficient to use them in the apheresis process.

Until now, the rabbit has been considered for preclinical in vivo studies in an animal model. However, it was not possible to obtain a modified aptamer that would be sufficiently stable in rabbit serum. Based on the results obtained in studies with rat serum, it was found that the selected variants have appropriate parameters and can be used to build an adsorber prototype for in vivo studies on a rat model. Consultations are ongoing to develop the technical conditions for performing selective plasmapheresis in the rat.

In preparation for the preclinical studies, the subcontractor produced the first batch of the adsorber prototype. The tests of sterilization, microbiological contamination, and tests for the presence of endotoxins were performed, and the stability of the bed was examined. The tests confirmed that the first batch of the adsorber is sterile and the aptamer bed is stable after the sterilization process. As expected, microbial contamination and endotoxin levels were below the detection threshold.

The continuation of works on the column prototyping using the selected aptamer variants is planned for the next reported period. Another batch of adsorber will be produced, which will be subjected to qualitative tests, including molecular target binding tests in a static and dynamic system, i.e. in conditions of buffer or plasma flow through the column. Based on the above experiments, the best candidate (lead molecule) will be selected for further work on the development of the prototype.

At the same time, in preparation for pre-clinical in vivo studies, consultations with research units are carried out, on the basis of which the study plan will be developed. Subsequently, a tendering procedure will be launched to select a subcontractor.

PB005 therapeutic project (AptaMG)

Aim of the project

The PB005 (AptaMG) project aims to develop a highly innovative, targeted apheresis-based therapy for the treatment of patients suffering from Myasthenia Gravis (MG). Myasthenia Gravis is an autoimmune disease caused by disturbances in neurotransmission in the neuromuscular junction. During the course of disease, patients experience exacerbations that severely weaken limb muscles, thus affecting their daily lives, as well as life-threatening myasthenic crises that cause respiratory failure. Exacerbation is regarded as a possible prodromal stage of a crisis and requires hospital treatment. One of the main factors responsible for disease symptoms is the complement system, and it is clinically proven that inhibition of complement 5 (C5) protein is beneficial for patients in exacerbation.

Pure Biologics under PB005 is developing a medical device that will capture C5 protein from the patients' blood, improving apheresis procedures currently used for patients with severe symptoms. The device will use highly specific aptamers for capturing C5 from blood, developed using Pure

Biologics' proprietary PureApta technology. PB005 has the potential to significantly improve care of the estimated 800,000 NMO patients world-wide, while reducing treatment costs.

Financing

The project is co-financed by the National Centre for Research and Development (NCBR) under the Intelligent Development 2014-2020 programme. According to the co-financing agreement, the total cost of the project is PLN 14,730 thousand and the value of the grant is PLN 10,775 thousand. The Company intends to cover its own contribution of PLN 3,958 thousand from the conducted share issue. The project covers 6 stages, including the production of a filter prototype, its optimisation and testing its safety in preclinical studies and in a clinical trial of a medical device. The cost eligibility period lasts until December 31, 2023.

Implementation and results of the project in the reported period

In Q1 2022, work was carried out to create a prototype of a medical device for the selective capture of the C5 protein from plasma. The prototype will be tested in ex vivo studies with human and animal plasma, and ultimately used in in vivo animal studies scheduled for Q4 2022. The optimized prototype should reduce the concentration of C5 protein by a minimum of 80%.

In the last reported period, tests for binding of the C5 protein to the buffer and to the plasma by the aptamer immobilized on the resin were continued. Measurements were made using the new, more accurate tools developed by the Company in the form of the ELISA test. The tests showed that as a result of the optimization work carried out, the binding efficiency of the molecular target under static conditions was improved to about 82-90%, depending on the experimental system used. The obtained results suggest that the selected molecules are characterized by appropriate parameters for the further development of the adsorber prototype.

In April 2022, at the Aptamers 2022 conference, the Company presented a scientific poster presenting selected results confirming that the obtained aptamers are characterized by high affinity and specificity for the molecular target of the C5 protein. The results suggest a high potential of selected molecules in the implementation of a novel therapeutic medical device based on aptamers for the treatment of myasthenia gravis.

Tests in a dynamic system, ie in conditions of buffer or plasma flow through the column, are planned for the next reporting period. The amount of bed, and hence aptamer, necessary to remove the C5 protein from a given volume of buffer or plasma will be determined experimentally. These measurements are essential to determine the conditions of a planned preclinical animal study.

In order to test the adsorber prototype in animal studies, it is also necessary to test whether the selected aptamers exhibit the so-called interspecies reactivity, i.e. whether they bind to native animal C5 protein. For the adsorber study, rat or rabbit models of myasthenia gravis are considered, therefore, it is planned to study aptamers cross-reactivity with rat and rabbit proteins.

In order to diversify the risk, the Company successfully completed an additional aptamer selection campaign for the molecular target, the C5 protein. As a result of the performed selection, 5 additional molecules with favorable binding parameters of the native human C5 protein were obtained. Subsequently, the sequences will be subject to the optimization process in order to obtain adequate stability in human and animal plasma for the planned ex vivo and in vivo tests on an animal model.

PB006 Proof-of-Concept for drug project (AptaMLN)

Aim of the project

The aim of the PB006 project is to develop a targeted chemotherapy, in the form of a drug-conjugated aptamer targeting IL-13Rα2, for safe and efficient treatment of melanoma. Traditional chemotherapeutics effectively kill cancer cells, but the doses needed to eradicate the tumour cause unacceptable side effects in patients. Immunotherapies in the form of monoclonal antibodies work well in subsets of patients. Unfortunately, in most patients suppression of tumour-killing immune cells in the tumour micro-environment hampers therapeutic efficacy of such therapies. PB006 will specifically recognize the molecular target of IL-13Rα2 displayed on the surface of tumour cells. After the receptor binds the conjugate, the entire complex will be taken-up by the cell, after which the drug will be released and kill the tumour cell. Thus, PB006 will allow targeted delivery of highly toxic molecules specifically to cancer cells, thereby by-passing immuno-suppression and reducing side-effects in comparison with conventional chemotherapies. To increase the chance of achieving therapeutic efficacy of PB006, a companion diagnostic test will be developed in parallel to identify patients whose tumour cells express IL-13Rα2. Cancer types eligible for PB006, based on reported expression of IL-13Rα2, includes melanoma, glioma, and colon cancer. PB006 therefore shows great potential, both therapeutically and commercially.

Financing

The PB006 project is a collaboration between Pure Biologics and the Polish Centre for Technology Development (PORT, Wroclaw, Poland) and is co-funded by the National Centre for Research and Development (NCBR). According to the co-financing agreement, the total cost of the project is PLN 2,354 thousand, and the amount of EU funding granted is PLN 2,072 thousand. The budget of the project stages implemented by the Company amounts to PLN 1,412 thousand (total cost), and the amount of funding granted is PLN 1,129 thousand. The Issuer intends to cover its own contribution to the project in the amount of PLN 282 thousand from the capital raised in the conducted share issues.

Implementation and results of the project in the reported period

In Q1 2022, PB006 project activities focused on two main tasks: confirming that protein IL-13Rα2 can be a molecular target for targeted PB006 therapy and obtaining IL-13Rα2-binding aptamer.

During the reported period, the last step of the IL-13Rα2 validation was successfully completed. The studies were aimed at confirming that after binding a specific antibody, IL-13Rα2 protein is internalized to the appropriate intracellular spaces, i.e. lysosomes. The internalization of the receptor into the lysosome is crucial for the mechanism of action of the developed conjugate and is necessary for the release of the toxin responsible for killing the cancer cell. Using a confocal microscope, the co-localization of IL-13Rα2 with the lysosome was confirmed, which means that after the binding of a specific antibody, IL-13Rα2 is taken from the cell surface into the vesicle. The results obtained during these studies will be used in the selection of the appropriate linker molecule by which the aptamer will bind the toxin.

In addition, in Q1 2022, potentially IL-13Rα2-binding oligonucleotides selected in campaign 5 were screened. A total of 44 molecules were selected from the NGS analysis. 31 oligonucleotides from the last selection campaign were tested in the previous reported period. The remaining 13 molecules were tested by several separate methods: biophysical, biochemical and novel cell-based methods. On the basis of the obtained results, it was not possible to select a molecule that would meet the required

protein IL-13Rα2 binding criteria. The results and conditions of the current selections are currently being analyzed in order to optimize subsequent selections.

On 22/02/2022, PORT informed Pure Biologics that it would not proceed with its stages of the project due to the project's Stage 2 rescheduling. This being the case, the Company sees an opportunity to further develop PB006 on its own, building on the work completed to date. Pure Biologics has accounted for all costs and received a grant for its work and there is no risk that funds will need to be returned due to PORT's decision. Pure Biologics will continue to develop PB006 and intends to cover the costs from its own budget, while seeking new funding opportunities.

The PB006 project is currently developing a strategy for the future selection of IL-13Rα2-binding aptamers. In order to select the best oligonucleotide library, the cytotoxicity and genotoxicity of the modification of nucleotides used in Pure Biologics, which have not been used in the project so far, are assessed. At the end of the study, from the pool of modifications ensuring higher stability of the molecules in the serum and stronger binding of aptamers to proteins, those showing an acceptable toxicity will be selected. In the next quarter, work will be continued on obtaining a stable aptamer that efficiently binds IL-13Rα2.

In 2022, the Company plans to intensify work aimed at selecting anti-IL-13Rα2 aptamers by implementing the conditions of greater selection pressure in the SELEX procedure, as well as alternative strategies for generating potential candidates for IL-13Rα2 aptamers based on next-generation sequencing and bioinformatics analyzes. During the work on the selection of the lead molecule, the Company intends to conduct an in vivo proof-of-concept experiment to verify the concept of melanoma cell death induction by anti-IL-13Rα2-based drugs by the end of 2022. In addition, the project will launch the development of a molecular test for accompanying diagnostics for patients with melanoma.

Collaborative science and technology projects

PB013 project (ALTERCAR)

Aim of the project

The aim of the project is to pilot the development of a new cell therapy using T lymphocytes with an introduced chimeric antigen receptor (CAR-T) against newly selected molecular targets overrepresented in selected leukemias and lymphomas. The Polish-Norwegian consortium will conduct research from the selection of new targets, through the selection of antibody fragments (scFv) that bind these targets and the development of the CAR receptor equipped with a selected binding molecule, to animal studies demonstrating the effectiveness of the new therapy, which will be used in patients resistant to standard treatment (Rituximab, CD19-CAR T).

Financing

The project is co-financed by the National Center for Research and Development (NCBR) as part of the "Applied Research" program financed by the Norwegian Financial Mechanism 2014-2021. The total value of the project for the consortium is PLN 6 655 thousand, and the granted amount of EU funding is PLN 6 573 thousand. The budget of the project stages implemented by the Company is PLN 413 thousand (total cost), and the amount of co-financing granted is PLN 330 thousand. The own contribution of the project in the amount of PLN 83 thousand is covered by the Company from the

capital obtained as part of the issued shares. The project has been implemented as part of the consortium since January 1, 2021, and the planned completion of the project is December 31, 2023.

The Consortium

The Consortium leader is the Medical University of Warsaw, where the team is led by Dr. Magdalena Winiarska, and the consortium, apart from Pure Biologics, also includes the University Hospital in Oslo - Oslo University Hospital, Institute for Cancer Research, Cancer Division, where Dr. Sébastien Wälchli is the leader.

Implementation and results of the project in the reported period

In Q1 2022, the previously selected fragments of scFv antibodies were validated. Validation for molecular target binding was performed using the ELISA test developed in Pure Biologics and flow cytometry, which allows to assess the binding of antigen present on the cell surface. For flow cytometric analysis, cell lines provided by project partners were used. Specific antigen binding was confirmed for 12 of the 20 scFv variants tested. Their sequences, along with antigen interaction data, were provided to project partners in order to generate the chimeric receptor (CAR) in T lymphocytes and test it for its ability to eliminate tumor cells expressing the molecular target. In the later stages of the project, Pure Biologics will participate with partners in the engineering of CAR receptors and potentially select antibodies to further molecular targets typed by the partners.

PB014 project (DualDrug)

Aim of the project

The aim of the project is to develop a human growth factor protein conjugate with two different cytostatic drug molecules. This type of therapeutic molecule, preferentially internalized by the cells of selected neoplasms, is designed to effectively eliminate these cells by virtue of the strong synergistic effect of two cytotoxic drugs. The cooperation with the University of Wrocław and the University Hospital in Oslo will allow the consortium members' expertise to be combined to develop a new drug candidate faster and more likely up to the stage of animal testing.

Financing

The project is co-financed by the National Center for Research and Development (NCBR) as part of the "Applied Research" program financed by the Norwegian Financial Mechanism 2014-2021. The total value of the project for the consortium is PLN 6 571 thousand, and the granted amount of EU funding is PLN 6 508 thousand. The budget of the project stages implemented by the Company is PLN 158 thousand (total cost), and the amount of co-financing granted is PLN 95 thousand. The own contribution of the project in the amount of PLN 63 thousand is covered by the Company from the capital obtained as part of the issued shares. The project has been implemented as part of the consortium since October,1 2021, and the planned completion of the project is September, 30 2023.

Implementation and results of the project in the reported period

In Q1 2022, the consortium partners continued work on the development of tests verifying the mechanisms of action of selected cytostatic drugs and the preparation of growth factor conjugates

with these drugs. The Issuer has started work on the preparation of vectors for the production of a growth factor on a medium scale in industrial conditions, in a bacterial system..

2. Operating events of the Company

Contract research

In the reported period, the Company completed commissioned research work in the field of protein R&D support for a client from France. Further orders are pending, and further works are being agreed and are the result of establishing permanent research cooperation with this client. The commissioned work for a client from UK/Croatia has also commenced..

Licenses and profit participation agreements

In February 2022, the Company signed an agreement guaranteeing the distribution of profits from the commercialization of the aptamer developed under the contract research order. The subject of the order is the development of an aptamer using the PureApta™ platform. The order is subject to a one-off payment (upfront) in the amount of PLN 214,000 in the event of success. Additionally, an agreement was signed with the client guaranteeing profit sharing, under which the Company is entitled to a 6% share in the client's net profits from commercialization of the therapeutic solution using the developed aptamer („success fee"). Commercialization may take place through the sale or licensing of a solution at every stage of its development. In the reported period, work was carried out in the first stage of the order, which was completed at the turn of April and May 2022.

Actions taken to create a new laboratory-office complex

As part of works on the creation of a new laboratory and office complex tailored to the technological needs and development strategy of the company, works related to the construction of a new complex are carried out. Agreements were signed with independent specialists in the construction, electrical, sanitary and automation industries. In line with their suggestions, a number of technological solutions were proposed to reduce investment costs while maintaining the established standards. The suggested solutions were verified in the pilot test rooms, thus reducing the risk of additional, costly modifications typical for the modification of the design in the final stages of construction.

Actions taken to secure current needs in the laboratory and research ares in connection with the growth of R&D works

In the reported period, in accordance with the adopted development plan, the laboratory area underwent a number of organizational and infrastructural improvements. Two flow cytometers have been added to the machine park, one of which has a spectral application, significantly increasing the research potential of the cell analysis laboratory.

The process of implementing quality documentation, planned for the whole year, aimed at standardizing and regulating operational, laboratory and research procedures, was also started. In Q1, procedures such as equipment supervision and rules for working with hazardous and infectious materials were successfully implemented. A dedicated warehouse and purchase module was also developed with a subcontractor in ERP type software, which is currently in the pilot testing phase. As a

result, the average delivery time was shortened, the number of positively considered complaints for the company increased, and the costs of execution and delivery of orders from the laboratory area were reduced.

In the reported period, the work environment was tested in terms of the most commonly used chemical agents and noise. The test was carried out by an accredited laboratory, and the obtained results confirm that the work in the laboratory is performed in safe conditions. Workstations equipped with screen monitors were also analyzed in terms of meeting legal requirements and ergonomic standards. Additional ergonomic equipment was made available to employees for permanent use, including sensorimotor pillows, standing workplaces with anti-fatigue mats, kneeling seats, and in the open space area, soundproofing headphones, whose task is to improve the comfort of work.

Actions taken in the area of building key scientific competences connected with entering into next phases of R&D projects

In Q1 2022, the Company began activities aimed at acquiring a highly qualified manager with medical education for the position of Chief Medical Officer from the European market, with experience in clinical drug development projects carried out in major international pharmaceutical companies. It is an important element in the implementation of the Pure Biologics strategy in the area of building key competences necessary at further stages of development of clinical trials projects and in the process of commercialization and acquiring business partners in the big pharma industry. In the process of acquiring a candidate for the position of Medical Director, the Company uses the support of a professional recruitment agency in the field of life science, specializing in creating business relations between experienced experts and managers, and pharmaceutical companies in Europe..

Contract with biotechnological assets broker

On February 2, 2022, Pure Biologics S.A. concluded an agreement with Destum Partners Inc., a reputable entity based in Charlotte, NC (USA), dealing with the search for partners and intermediation in asset purchase and sale transactions on the market of new drugs and therapies. The scope of the contract includes consulting and advisory services, including in the area of introducing the Company's products and / or projects to distributors and / or pharmaceutical companies, acquiring new projects at various stages of development, assistance in assessing and negotiating the terms of the transaction. Existing since 2006, Destum Partners has extensive experience in business development for biotechnology and pharmaceutical entities, and the company's portfolio includes, among others completed contracts with a total value exceeding USD 3 billion and cooperation with leading entities from among the largest pharmaceutical companies..

Events, conferences, partnering

In the reported period, the Company actively participated in the following events::

- February 7-11, 2022 – Biotechgate Digital Partnering;
- March 28-30, 2022 – BIO Europe Spring.

During the meetings arranged during these events, the Company presented a portfolio of its projects, in particular, aptamer- and antibody-based candidates for drugs and therapeutic products..

Additionally, after the balance sheet date, the Company presented the scientific results related to the ongoing projects: April 4-5, 2022, scientists from the Aptamer Group took part in the Aptamers 2022 conference, where they presented scientific posters about solutions in projects PB002 and PB005. This

conference brings together leading research groups and companies operating in the field of aptamers. Selected scientific materials are available on the Company's website.

Non-commercial activities within associations

On February 15, 2022, the Company joined the Warsaw Health Innovation Hub (WHIH) initiative as a partner. It is a joint project of the Medical Research Agency (ABM) and entities from the medicine, pharmacy and biotechnology sector, coordinated by the ABM Department of Innovation and Biotechnology Development, which aims primarily to support initiatives in the strategic areas of pharmaceutical innovation, medical technologies and medical devices and solutions information technology in health..

3. Corporate and organisational events of the Company

Execution of the second tranche of Incentive Programme

On February 18, 2021, after approval by the Supervisory Board, 80 transactions of the transfer of ownership rights to Program Participants (the Issuer's employees) 140 786 shares under the 2nd Tranche of the 1st Incentive Program were carried out by the Trustee of the Incentive Scheme, Mr. Filip Jeleń. As a result, Mr. F has had a change in the ownership of the total number of the Company's shares. The ownership of the Company's shares decreased from 17.68% to 11.44%, thus falling below the threshold of 15% of the total number of votes at the General Meeting of the Company.

Apointment of a new member of the Management Board

At the meeting on March 30, 2022, the Supervisory Board of the Company adopted a resolution to appoint Mr. Petrus Spee as a member of the Management Board on April 4, 2022, who also serves as the company's scientific director.

4. Analysis of the actual and potential impact of the COVID-19 pandemic on the Company's activities

In connection with the ongoing pandemic of the coronavirus causing the COVID-19 disease worldwide, as at the date of the report, the following factors have been identified that may temporarily extend the duration of individual research works under ongoing research and development projects and / or the Company's financial situation. In the case of prolonged restrictions and restrictions in the economies of the countries affected by the pandemic and the uncertainty about the development of the situation on the capital markets: (i) there may be delays in the supply of certain reagents from contractors operating or cooperating in the affected countries (especially China, USA, GB, Germany, France), (ii) the work and research tasks of some highly specialized external service recipients cooperating with the Company at various stages of the research may be delayed, delayed or impossible to contract due to staff constraints or inability to undertake obligations based on extremely high uncertainty, (iii) despite the measures and preventive solutions applied, it may be necessary to quarantine one or more employees working in research or laboratory teams.

In Q1 2022, the Company noticed slight and non-severe shortages in some of the ordered products and reagents, as well as delays in delivery times. The situation in the current quarter was already significantly better than in 2021 and similar to the situation in 2019 (before the start of the COVID-19 pandemic).

In its daily operations, the Company has also implemented increased health and safety rules, especially in the laboratory, as well as procedures defining the procedures to be followed in the event of an outbreak of COVID-19 among the Company's employees. At the end of 2021, the Company also purchased antigen tests for employees to detect the virus causing COVID-19 for self-home use - thanks to their use by employees, an increased and accelerated detection of infections was observed, which allowed for a very clear positive change in managing this risk and preventing the spread of the disease among employees.

The Company constantly monitors the development of the situation affecting the probability of the effects of potential risks. If their significance for the conducted activity increases, the Company will communicate the above-mentioned events in the form of applicable reports. Nevertheless, the Company expects that the preventive measures introduced and the changes in the epidemic situation will cause the impact of the COVID-19 pandemic to decline further in the coming quarters, becoming negligible within a year or two.

Analysis of the actual and potential impact of the conflit in Ukraine on the Company's activities

In the opinion of the Company's Management Board, the occurrence of an armed conflict in Ukraine will have an indirect and limited impact on the financial situation of Pure Biologics S.A. The company does not cooperate with entities registered in Ukraine, Russia and Belarus, does not provide services for or obtain supplies from contractors from the above-mentioned countries. The companies also do not deal with the risk related to the availability of employees from Ukraine, and sanctions imposed on private persons of citizens of Russia and Belarus, as well as financial institutions from the above-mentioned countries. In terms of cybersecurity, the Company did not record any incidents. All systems work efficiently and are subject not only to routine, but in the current situation also to increased testing and security.

However, the Company is subject to macroeconomic mechanisms and factors such as an increase in exchange rates, inflation or an increase in interest rates will have an impact on the results achieved by

the Company. The impact of these factors on the Company's financial result is presented in Note 30 "Financial Risk Management" to the Company's Separate Financial Statements for the financial year ended December 31, 2021.

However, the development of the situation is very dynamic and unpredictable. In connection with the above, the Management Board of the Company analyzes the situation related to the escalation of the armed conflict in Ukraine on an ongoing basis and does not rule out that any new conditions and changes may significantly affect the activities of Pure Biologics S.A. Possible disturbances are:

- an increase in the costs of conducting R&D works as a result of inflationary and remuneration pressure,
- interrupted or disturbed supply chains in, which may result in limitations in the availability of reagents, especially those imported from Asia,
- disruptions in the work continuity proces,
- disruptions in electricity supply, including an increase in energy costs,
- cyber attacks on IT resources causing data leakage,
- threats resulting from the availability of employees, in particular the outflow of foreign employees

VI. POSITION ON THE POSSIBILITY OF THE PUBLISHED PERFORMANCE FORECASTS FOR GIVEN YEAR IN THE LIGHT OF THE RESULTS PRESENTED IN THIS QUARTERLY REPORT

The company does not publish financial forecasts.

VII. INDICATION OF RELEVANT PROCEEDINGS CARRIED ON BEFORE A COURT, AN ARBITRATION BODY OR A PUBLIC ADMINISTRATION BODY

In the period covered by this report, the Company was not a party to any proceedings pending before a court, a body competent for arbitration proceedings or a public administration body regarding the Issuer's liabilities and receivables.

VIII INFORMATION ON THE CONCLUSION OF ONE OR MORE TRANSACTIONS WITH RELATED PARTIES, IF CONCLUDED ON OTHER THAN MARKET TERMS

In the period covered by the report, there were no transactions with related entities on terms other than market terms.

IX. DESCRIPTION OF THE ORGANIZATION OF THE GROUP, WITH INDICATION OF THE UNITS TO BE CONSOLIDATED

The company does not form a capital group.

X. INFORMATION ON GRANTING OF CREDIT OR LOAN GUARANTIEES OR GRANTING OF GUARANTEES BY THE ISSUER OR ITS SUBSIDIARY

In the period covered by the report, the Issuer did not grant any loans, credits or guarantees.

XI. ISSUER'S SHAREHOLDING STRUCTURE

On 18 February 2022, as a result of the sale of 140,786 Company shares, which resulted from the implementation of the second tranche of the Incentive Programme for Pure Biologics S.A. employees, there was a change in Mr Filip Jeleń's total shareholding in the Company. The shareholding decreased from 17.68% to 11.44%, thus falling below the threshold of 15% of the total number of votes at the Company's General Meeting.

The table below presents (in terms of numbers and percentages) information on the structure of the Company's share capital and the structure of the total number of votes at the General Meeting of Shareholders as at the date of publication of this report.

Table 1: Shareholding structure

Shareholder	Number of shares	Number of votes at AGM	Share in capital	Share of votes at AGM
Filip Jeleń	257 817	257 817	11,44%	11,44%
Aviva investors Poland TFI S.A.	170 464	170 464	7,56%	7,56%
Maciej Mazurek	160 104	160 104	7,10%	7,10%
Augebit FIZ*	153 220	153 220	6,80%	6,80%
Piotr Jakimowicz	146 576	146 576	6,50%	6,50%
Andrzej Trznadel	81 000	81 000	3,59%	3,59%
Other	1 284 819	1 284 819	57,00%	57,00%
Total	**2 254 000**	**2 254 000**	**100,00%**	**100,00%**

To the best of the Company's knowledge, as at the date of submitting the report, the managing and supervising persons held, directly or indirectly, the Company's shares in accordance with the table below:

Table 2: List of the Company's shares held by managing and supervising persons

Shareholder	Number of shares	Number of votes at AGM	Share in capital	Share of votes at AGM
Filip Jeleń (President of the MB)	257 817	257 817	11,44%	11,44%
Romuald Harwas (Vice-President of the MB)	3 205	3 205	0,14%	0,14%
Petrus Spee (Vice-President of the MB)	1 000	1 000	0,04%	0,04%
Tadeusz Wesołowski (Deputy Chairman of the SB)***	153 220	153 220	6,80%	6,80%
Andrzej Trznadel (Chairman of the SB)	81 000	81 000	3,59%	3,59%
Andrzej Kierzkowski – (Member of the SB)	26 221	26 221	1,16%	1,16%
Total	**522 463**	**522 463**	**23,18%**	**23,18%**

XII. INDICATION OF FACTORS WHICH, IN THE ISSUER'S OPINION, WILL INFLUENCE RESULTS ACHIEVED IN THE PERSPECTIVE OF AT LEAST THE FOLLOWING QUARTER

All significant factors that will affect the results achieved in the next quarter have been indicated and discussed in point IV and V of this report.

XIII. SIGNIFICANT EVENTS AFTER THE REPORTED PERIOD

After the period covered by this report, until the date of publication, there were no significant events influencing the activities of the Company.

XIV. MANAGEMENT BOARD'S STATEMENT ON THE INFORMATION CONTAINED IN THIS REPORT

The Management Board of Pure Biologics declares that, to the best of its knowledge, the abbreviated financial statements of the Company included in the report for the first quarter of 2022 and comparable data have been prepared in accordance with the provisions applicable to the Company, and that the information on the Company's operations in the reported period presents a true picture of the company's development and achievements. and the situation of Pure Biologics.

Filip Jan Jeleń	Romuald Apollo Harwas	Petrus Johannes Louis Spee
President of the Management Board	Vice-President of the Management Board	Vice-President of the Management Board