

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

VLADIMIR ZHUKOV, Individually and
on Behalf of All Others Similarly Situated,

Plaintiff,

v.

ASTRAZENECA PLC, PASCAL
SORIOT, MARC DUNOYER, and
MENELAS PANGALOS,

Defendants.

Civil Action No.

CLASS ACTION

COMPLAINT FOR VIOLATIONS OF
THE FEDERAL SECURITIES LAW

DEMAND FOR JURY TRIAL

Plaintiff Vladimir Zhukov (“Plaintiff”), individually and on behalf of all others similarly situated, by Plaintiff’s undersigned attorneys, for Plaintiff’s complaint against Defendants, alleges the following based upon personal knowledge as to Plaintiff and Plaintiff’s own acts, and information and belief as to all other matters, based upon, *inter alia*, the investigation conducted by and through Plaintiff’s attorneys, which included, among other things, a review of the Defendants’ public documents, conference calls and announcements made by Defendants, United States (“U.S.”) Securities and Exchange Commission (“SEC”) filings, wire and press releases published by and regarding AstraZeneca plc (“AstraZeneca” or the “Company”), analysts’ reports and advisories about the Company, and information readily obtainable on the Internet. Plaintiff believes that substantial additional evidentiary support will exist for the allegations set forth herein after a reasonable opportunity for discovery.

NATURE OF THE ACTION

1. This is a federal securities class action on behalf of a class consisting of all persons and entities other than Defendants that purchased or otherwise acquired AstraZeneca securities between May 21, 2020 and November 20, 2020, both dates inclusive (the “Class Period”), seeking

to recover damages caused by Defendants' violations of the federal securities laws and to pursue remedies under Sections 10(b) and 20(a) of the Securities Exchange Act of 1934 (the "Exchange Act") and Rule 10b-5 promulgated thereunder, against the Company and certain of its top officials.

2. AstraZeneca is one of the largest biopharmaceutical companies in the world. The Company is primarily known for its development of drugs to treat cancer, asthma, and other chronic conditions, and has not historically specialized in vaccine development.

3. In April 2020, the Company partnered with Oxford University to develop a potential recombinant adenovirus vaccine for COVID-19, later dubbed AZD1222. Oxford University's work on developing a COVID-19 vaccine began in January 2020, almost as soon as the virus was recognized globally. Volunteers for the first clinical trial were recruited and screened in March 2020, and a Phase 1 clinical trial was launched the following month.

4. Throughout the Class Period, Defendants made materially false and misleading statements regarding the Company's business, operations, and compliance policies. Specifically, Defendants made false and/or misleading statements and/or failed to disclose that: (i) initial clinical trials for AZD1222 had suffered from a critical manufacturing error, resulting in a substantial number of trial participants receiving half the designed dosage; (ii) clinical trials for AZD1222 consisted of a patchwork of disparate patient subgroups, each with subtly different treatments, undermining the validity and import of the conclusions that could be drawn from the clinical data across these disparate patient populations; (iii) certain clinical trial participants for AZD1222 had not received a second dose at the designated time points, but rather received the second dose up to several weeks after the dose had been scheduled to be delivered according to the original trial design; (iv) AstraZeneca had failed to include a substantial number of patients over 55 years of age in its clinical trials for AZD1222, despite this patient population being

particularly vulnerable to the effects of COVID-19 and thus a high priority target market for the drug; (v) AstraZeneca's clinical trials for AZD1222 had been hamstrung by widespread flaws in design, errors in execution, and a failure to properly coordinate and communicate with regulatory authorities and the general public; (vi) as a result of all the foregoing, the clinical trials for AZD1222 had not been conducted in accordance with industry best practices and acceptable standards and the data and conclusions that could be derived from the clinical trials was of limited utility; (vii) as a result of all the foregoing, AZD1222 was unlikely to be approved for commercial use in the U.S. in the short term, one of the largest potential markets for the drug; and (viii) as a result, the Company's public statements were materially false and misleading at all relevant times.

5. On November 23, 2020, AstraZeneca issued a release announcing the results of an interim analysis of its ongoing trial for AZD1222. Although the release claimed that the drug candidate had met its primary efficacy endpoints, the announcement immediately began to raise questions among analysts and industry experts. AstraZeneca disclosed that the interim analysis involved two smaller scale trials in disparate locales—the United Kingdom (“U.K.”) and Brazil—that, for unexplained reasons, employed two different dosing regimens.

6. On this news, AstraZeneca's American Depository Share (“ADS”) price fell nearly \$2.00 per share during the trading day on November 23, 2020, on extremely high trading volume of over 13 million ADSs traded.

7. To limit the fallout, AstraZeneca hastily put out statements defending its interim analysis and held conference calls with analysts covering the Company. However, the Company's responses raised more questions than answers and cast further doubt on the integrity of the trials' design, data, and conclusions. Most shockingly, AstraZeneca revealed that the half dosing regimen was not a part of the original trial design, but rather was forced upon the Company because of a

manufacturing error discovered early in the trial process. Specifically, AstraZeneca discovered that a manufacturer had underpredicted the dose of the vaccine by half in the U.K. trial.

8. Additional damaging revelations came to light. For example, Dr. Moncef Slaoui, the head of Operation Warp Speed, told reporters that the half-strength dose had not been initially tested in people over the age of 55, even though this population was the most vulnerable to COVID-19. He also stated that if AstraZeneca could not clearly explain the discrepancies in its trial results, the results would most likely “not be sufficient for approval” for commercial sale in the U.S. Moreover, certain trial participants received their second dose weeks later than originally planned. The trials also amalgamated a “bewildering array” of experimental groups and subgroups, each receiving subtly different treatments, and inexplicably excluded certain subgroups from the reported interim analysis. AstraZeneca further failed to timely provide data and information to the U.S. Food and Drug Administration (“FDA”) after the emergence of neurological symptoms in two clinical trial participants earlier in the year, which had resulted in a temporary halt to U.S. clinical trials.

9. Analysts and reporters widely criticized the faulty trial design and failure of AstraZeneca to be forthright with the public and investors, describing AstraZeneca’s interim results as a “mess,” riddled with “irregularities and omissions,” and the product of “cherry-picked . . . data” and “very shaky science.” For example, on November 25, 2020, *Wired* issued a comprehensive report on AstraZeneca’s botched trial results entitled “The AstraZeneca Covid Vaccine Data Isn’t Up to Snuff.”

10. As negative news reports continued to reveal previously undisclosed problems and flaws in AstraZeneca’s clinical trials for AZD1222, AstraZeneca’s ADS price fell to \$52.60 per

share by market close on November 25, 2020, a 5% decline over three trading days in response to adverse news on abnormally high trading volume.

11. As a result of Defendants' wrongful acts and omissions, and the precipitous decline in the market value of the Company's securities, Plaintiff and other Class members have suffered significant losses and damages.

JURISDICTION AND VENUE

12. The claims asserted herein arise under and pursuant to Sections 10(b) and 20(a) of the Exchange Act (15 U.S.C. §§ 78j(b) and 78t(a)) and Rule 10b-5 promulgated thereunder by the SEC (17 C.F.R. § 240.10b-5).

13. This Court has jurisdiction over the subject matter of this action pursuant to 28 U.S.C. § 1331 and Section 27 of the Exchange Act.

14. Venue is proper in this Judicial District pursuant to Section 27 of the Exchange Act (15 U.S.C. § 78aa) and 28 U.S.C. § 1391(b). The acts and transactions giving rise to the violations of law complained of occurred in part in this Judicial District, including the dissemination of false and misleading statements into this Judicial District. AstraZeneca's sponsored ADSs traded in this Judicial District on the New York Stock Exchange ("NYSE"), as well as on the Nasdaq Global Select Market ("NASDAQ") after the Company transferred the U.S.-listing of its ADSs on September 24, 2020.

15. In connection with the acts alleged in this complaint, Defendants, directly or indirectly, used the means and instrumentalities of interstate commerce, including, but not limited to, the mails, interstate telephone communications, and the facilities of the national securities markets.

PARTIES

16. Plaintiff, as set forth in the attached Certification, acquired AstraZeneca securities at artificially inflated prices during the Class Period and was damaged upon the revelation of the alleged corrective disclosures.

17. Defendant AstraZeneca is a multinational biopharmaceutical company. AstraZeneca shares traded on the NYSE and the NASDAQ under ticker symbol “AZN” during the Class Period, and each AstraZeneca ADS represents one half of an ordinary share.

18. Defendant Pascal Soriot (“Soriot”) served as AstraZeneca’s Chief Executive Officer (“CEO”) and a director of the Company at all relevant times.

19. Defendant Marc Dunoyer (“Dunoyer”) served as AstraZeneca’s Chief Financial Officer and a director of the Company at all relevant times.

20. Defendant Menelas Pangalos (“Pangalos”) served as AstraZeneca’s Executive Vice President of Biopharmaceuticals Research & Development at all relevant times.

21. Defendants Soriot, Dunoyer, and Pangalos are referred to herein as the “Individual Defendants.” During the Class Period, the Individual Defendants ran the Company as hands-on managers overseeing AstraZeneca’s operations and finances and made the materially false and misleading statements described herein. The Individual Defendants had intimate knowledge about core aspects of AstraZeneca’s financial and business operations, including the development of the Company’s COVID-19 vaccine as detailed herein. They were also intimately involved in deciding which disclosures would be made by AstraZeneca regarding the vaccine’s ongoing clinical trials.

SUBSTANTIVE ALLEGATIONS

Background

22. AstraZeneca is one of the largest biopharmaceutical companies in the world. The Company is headquartered in Cambridge, England, and it maintains its North American

headquarters in Wilmington, Delaware, a global research and development center in Gaithersburg, Maryland, and a primary commercial and manufacturing hub in Boston, Massachusetts. AstraZeneca is primarily known for its development of drugs to treat cancer, asthma, and other chronic conditions, and has not historically specialized in vaccine development.

23. In April 2020, AstraZeneca partnered with Oxford University to develop a potential recombinant adenovirus vaccine for COVID-19, later dubbed AZD1222. Oxford University's work on developing a COVID-19 vaccine began in January 2020, almost as soon as the virus was recognized globally. Volunteers for the first clinical trial were recruited and screened in March 2020, and a Phase 1 clinical trial was launched the following month.

24. On April 30, 2020, AstraZeneca announced its partnership with Oxford University, with Defendant Soriot hailing the agreement: "This collaboration brings together the University of Oxford's world-class expertise in vaccinology and AstraZeneca's global development, manufacturing and distribution capabilities." Notably, at the time, AstraZeneca did not release a full breakdown of the trial protocols to be employed at the outset of these clinical trials, as had its competitors, such as Pfizer and Moderna.

25. AstraZeneca's vaccine candidate was met with great optimism by investors and governments around the world. Unlike certain other leading vaccine candidates, AZD1222 is not based on novel mRNA technology, but rather on more tried and tested vaccine approaches. AZD1222 is also relatively cheap and easy to store and distribute as compared to mRNA vaccine candidates, as it does not require extremely cold temperatures to maintain vaccine integrity. In May 2020, the U.S. made what was at the time its largest investment in COVID-19 vaccine development, awarding AstraZeneca up to \$1.2 billion for the development and manufacturing of the vaccine in exchange for 300 million doses.

Materially False and Misleading Statements Issued During the Class Period

26. The Class Period starts on May 21, 2020, when AstraZeneca issued a release announcing that it had received substantial government commitments for the development of AZD1222. That release stated, in relevant part:

AstraZeneca advances response to global COVID-19 challenge as it receives first commitments for Oxford's potential new vaccine

Company working on a number of agreements in parallel to ensure broad and equitable supply of the vaccine throughout the world at no profit during the pandemic

First agreements to supply at least 400 million doses; Company has total capacity sourced for one billion doses through 2020 and into 2021; continues to increase capacity further

More than \$1bn US BARDA investment to support development and production of the vaccine

AstraZeneca is advancing its ongoing response to address the unprecedented challenges of COVID-19, collaborating with a number of countries and multilateral organisations to make the University of Oxford's vaccine widely accessible around the world in an equitable manner.

The Company has concluded the first agreements for at least 400 million doses and has secured total manufacturing capacity for one billion doses so far and will begin first deliveries in September 2020. AstraZeneca aims to conclude further agreements supported by several parallel supply chains, which will expand capacity further over the next months to ensure the delivery of a globally accessible vaccine.

AstraZeneca today received support of more than \$1bn from the US Biomedical Advanced Research and Development Authority (BARDA) for the development, production and delivery of the vaccine, starting in the fall. The development programme includes a Phase III clinical trial with 30,000 participants and a paediatric trial.

In addition, the Company is engaging with international organisations such as the Coalition for Epidemic Preparedness Innovations (CEPI), Gavi the Vaccine Alliance and the World Health Organisation (WHO), for the fair allocation and distribution of the vaccine around the world. AstraZeneca is also in discussions with governments around the world to increase access. Furthermore, AstraZeneca is in discussions with the Serum Institute of India and other potential partners to increase production and distribution.

AstraZeneca recently joined forces with the UK Government to support Oxford University's vaccine and has progressed rapidly in its efforts to expand access around the world. The Company will supply the UK starting in September and is thankful for the Government's commitment and overall work on vaccines.

[Defendant] Soriot . . . said: "This pandemic is a global tragedy and it is a challenge for all of humanity. We need to defeat the virus together or it will continue to inflict huge personal suffering and leave long-lasting economic and social scars in every country around the world. We are so proud to be collaborating with Oxford University to turn their ground-breaking work into a medicine that can be produced on a global scale. We would like to thank the US and UK governments for their substantial support to accelerate the development and production of the vaccine. We will do everything in our power to make this vaccine quickly and widely available."

AstraZeneca has now finalised its licence agreement with Oxford University for the recombinant adenovirus vaccine. The licensing of the vaccine, formerly ChAdOx1 nCoV-19 and now known as AZD1222, follows the recent global development and distribution agreement with the University's Jenner Institute and the Oxford Vaccine Group. AstraZeneca has also agreed to support the establishment of a joint research centre at Oxford University for pandemic preparedness research.

A Phase I/II clinical trial of AZD1222 began last month to assess safety, immunogenicity and efficacy in over 1,000 healthy volunteers aged 18 to 55 years across several trial centres in southern England. Data from the trial is expected shortly which, if positive, would lead to late-stage trials in a number of countries. AstraZeneca recognises that the vaccine may not work but is committed to progressing the clinical program with speed and scaling up manufacturing at risk.

The Company's comprehensive pandemic response also includes rapid mobilisation of AstraZeneca's global research efforts to discover novel coronavirus-neutralising antibodies to prevent and treat progression of the COVID-19 disease, with the aim of reaching clinical trials in the next three to five months. Additionally, the Company has quickly moved into testing of new and existing medicines to treat the infection, including CALAVI and ACCORD trials underway for *Calquence* (acalabrutinib) and DARE-19 trial for Farxiga (dapagliflozin) in COVID-19 patients.

27. On June 4, 2020, AstraZeneca issued a release announcing a \$750 million agreement with the Coalition for Epidemic Preparedness Innovations and the Gavi Vaccine Alliance for 300 million doses of AZD1222, as well as a licensing agreement with the Serum Institute of India to supply one billion doses for low and middle-income countries. The release

claimed that clinical trials for AZD1222 (at the time known as ChAdOx1) had been preceding without any significant issues, stating that “[v]accines made from the ChAdOx1 virus have been given to more than 320 people to date and have been shown to be safe and well tolerated, although they can cause temporary side effects such as a temperature, influenza-like symptoms, headache or a sore arm.”

28. On June 13, 2020, AstraZeneca issued a release announcing an agreement with Europe’s Inclusive Vaccines Alliance to supply up to 400 million doses of AZD1222. The release also highlighted a “Phase II/III UK trial of AZD1222 in about 10,000 adult volunteers” launched by Oxford University in May 2020.

29. On July 20, 2020, AstraZeneca issued a release providing interim results for ongoing AZD1222 clinical trials. The release stated that AZD1222 had exhibited a promising immune system response in patients with no notable adverse reactions. That release stated, in relevant part:

Interim data showed strong antibody and T-cell responses

Interim results from the ongoing Phase I/II COV001 trial, led by Oxford University, showed AZD1222 was tolerated and generated robust immune responses against the SARS-CoV-2 virus in all evaluated participants.

COV001 is a blinded, multi-centre, randomised controlled Phase I/II trial with 1,077 healthy adult participants, aged 18-55 years. It assessed a single dose of AZD1222 against a comparator meningococcal conjugate vaccine, MenACWY. Ten participants also received two doses of AZD1222 one month apart.

The results published in *The Lancet* confirmed a single dose of AZD1222 resulted in a four-fold increase in antibodies to the SARS-CoV-2 virus spike protein in 95% of participants one month after injection. In all participants, a T-cell response was induced, peaking by day 14, and maintained two months after injection.

Neutralising activity against SARS-CoV-2 (as assessed by the MNA80 assay) was seen in 91% of participants one month after vaccination and in 100% of participants who received a second dose. The levels of neutralising antibodies seen in participants receiving either one or two doses were in a similar range to those seen

in convalescent COVID-19 patients. Strong correlations were observed across neutralisation assays.

The early safety responses confirmed that transient local and systemic reactions were common in the AZD1222 group and were comparable to previous trials and other adenoviral vector vaccines. They included temporary injection site pain and tenderness, mild-to-moderate headache, fatigue, chills, feverishness, malaise and muscle ache. No serious adverse events were reported with AZD1222, and reactions were lessened with the use of prophylactic paracetamol, a pain killer, and occurred less frequently after a second dose.

Professor Andrew Pollard, Chief investigator of the Oxford Vaccine Trial at Oxford University and co-author of the trial, said: “The interim Phase I/II data for our coronavirus vaccine shows that the vaccine did not lead to any unexpected reactions and had a similar safety profile to previous vaccines of this type. The immune responses observed following vaccination are in line with what we expect will be associated with protection against the SARS-CoV-2 virus, although we must continue with our rigorous clinical trial programme to confirm this. We saw the strongest immune response in participants who received two doses of the vaccine, indicating that this might be a good strategy for vaccination.”

[Defendant] Pangalos . . . said: “We are encouraged by the Phase I/II interim data showing AZD1222 was capable of generating a rapid antibody and T-cell response against SARS-CoV-2. While there is more work to be done, today’s data increases our confidence that the vaccine will work and allows us to continue our plans to manufacture the vaccine at scale for broad and equitable access around the world.”

Late-stage Phase II/III trials are currently underway in the UK, Brazil and South Africa and are due to start in the US. Trials will determine how well the vaccine will protect from the COVID-19 disease and measure safety and immune responses in different age ranges and at various doses.

(Footnotes omitted.)

30. On July 30, 2020, AstraZeneca filed its financial report for the six months ended June 30, 2020 on Form 6-K with the SEC. The Form 6-K highlighted AstraZeneca’s development of AZD1222, stating, in relevant part:

AZD1222 (SARS-CoV-2 vaccine)

During the period, AstraZeneca advanced its ongoing response to address COVID-19 including licence, development and distribution agreements with the University of Oxford for the recombinant adenovirus vaccine, AZD1222.

The Phase I/II COV001 trial, launched in April 2020 in the UK with more than 1,000 participants, is ongoing. Initial data was reviewed in May 2020 by a Data Safety Monitoring Board and the UK Medicines and Healthcare products Regulatory Agency, resulting in the advancement to the COV002 Phase II/III trial in the UK, with over 10,000 participants.

In July 2020, results from the COV001 trial were published in *The Lancet*, showing that AZD1222 was tolerated and generated robust immune responses against the SARS-CoV-2 virus in evaluated participants. Neutralising activity against SARS-CoV-2 (as assessed by the MNA80 assay) was seen in 91% of participants (32/35) one month after vaccination and in 100% (10/10) of participants who received a second dose. In all evaluated participants, a T-cell response was induced, peaking by day 14, and maintained two months after injection. The levels of neutralising antibodies seen in participants receiving either one or two doses were in a similar range to those seen in convalescent COVID-19 patients. Data from these assays correlated positively with antibody levels to the SARS-CoV-2 spike protein, as measured by Enzyme-Linked Immunosorbent Assays data on the other participants.

COV002 has launched and has recruited almost 9,000 participants in the UK; late-stage development has begun in Brazil and South Africa. As part of the announced agreement with BARDA, the Company anticipates the launch of a Phase III clinical trial with c.30,000 participants in the US in the third quarter of this year.

31. Also on July 30, 2020, AstraZeneca hosted a conference call with analysts and investors led by the Individual Defendants to discuss the Company's second quarter 2020 earnings results. In his prepared remarks, Defendant Pangalos praised AstraZeneca's efforts to develop AZD1222 to date, stating, in relevant part:

We're really proud to be at the forefront and highly active in the pursuit of tackling the COVID-19 global health crisis.

Last week, as many of you know, we published data in *Lancet* for our Phase I/II COV001 trial as part of our collaboration with Oxford University showing that the vaccine AZD1222 was tolerated and generated robust immune response in terms of both neutralizing antibodies and T cells. Late-stage trials are currently ongoing in the U.K., in Brazil, in South Africa and are about to start in the United States.

32. On August 14, 2020, AstraZeneca issued a release stating that the Company had finalized an agreement with the European Commission to supply 400 million doses of AZD1222. The release also stated, in relevant part:

[Defendant] Soriot . . . said: “This first vaccine agreement with the European Commission will ensure that millions of Europeans have access to the AZD1222 vaccine following its approval. With production in our European supply chain soon to be started, we hope to make the vaccine available widely and rapidly, with the first doses to be delivered by the end of 2020. I would like to thank the entire European Commission, and especially the Commissioner for Health and Food Safety, Stella Kyriakides, for their swift response in ensuring Europeans may soon be protected with a vaccine against this deadly virus, enabling our global society and economy to rebuild.”

In July 2020, interim results from the ongoing Phase I/II COV001 trial were published in *The Lancet* and showed AZD1222 was tolerated and generated robust immune responses against the SARS-CoV-2 virus in all evaluated participants. Clinical development of AZD1222 is progressing globally with late-stage Phase II/III trials ongoing in the UK and Brazil, a Phase I/II trial in South Africa, and trials planned in the US, Japan and Russia. Results from the late-stage trials are anticipated later this year, depending on the rate of infection within the clinical trial communities.

33. On August 31, 2020, AstraZeneca issued a release claiming that the Company was committed to “the highest safety standards” and adherence to “the highest scientific and clinical standards” in its development of AZD1222. The release quoted Defendant Soriot, who claimed that AstraZeneca was developing AZD1222 “without cutting corners” and was following the “clear and stringent efficacy and safety standards” set by regulators. Specifically, the release stated, in relevant part:

Company reiterates core values to “follow the science” and “put patients first”

AstraZeneca is today issuing a commitment to the highest safety standards and to broad and equitable access around the world for its COVID-19 vaccine AZD1222.

At the heart of AstraZeneca’s core values is to “follow the science” and adhere to the highest scientific and clinical standards, making the safety and efficacy of the vaccine of paramount importance. The Company’s submissions for market authorisation will meet the stringent requirements established by regulators everywhere around the world.

To this end, AstraZeneca is implementing a clinical development program that will enroll in excess of 50,000 volunteers, including 30,000 in the US, in Latin America, Asia, Europe, Russia and Africa that will provide data for ethnically diverse populations.

The Company also has a core value to “put patients first” and will continue to work with governments and other organisations towards broad and equitable global access to the vaccine, scaling up manufacturing with independent parallel supply chains around the world to produce billions of doses to a consistent and high standard of safety and efficacy.

[Defendant] Soriot . . . said: “In recent weeks we have seen an increasing number of questions around the safety and availability of vaccines to fight this terrible COVID-19 pandemic and I want to reiterate my commitment that we are putting science and the interest of society at the heart of our work. We are moving quickly but without cutting corners, and regulators have clear and stringent efficacy and safety standards for the approval of any new medicine, and that includes this potential COVID-19 vaccine. We will remain true to our values as we continue our efforts to bring this vaccine broadly and equitably to billions of people around world.”

In July 2020, interim results from the ongoing Phase I/II COV001 trial were published in *The Lancet* and showed AZD1222 was tolerated and generated robust immune responses against the SARS-CoV-2 virus in all evaluated participants.

AstraZeneca continues to engage with governments, multilateral organisations and partners around the world to ensure broad and equitable access to the vaccine, should clinical trials prove successful. Recent supply announcements with Russia, South Korea, Japan, China, Latin America and Brazil take the global supply capacity towards three billion doses of the vaccine.

34. Also on August 31, 2020, AstraZeneca issued a release announcing that the Company was expanding U.S. clinical trials for AZD1222 into Phase III. The release noted that AstraZeneca “today issued a commitment to the highest safety standards and to broad and equitable access, reiterating its core values to ‘follow the science’ and ‘put patients first.’”

35. On September 8, 2020, Defendant Soriot signed a “pledge” together with eight other biopharmaceutical CEOs. According to this pledge, AstraZeneca and Defendant Soriot promised that the Company’s COVID-19 vaccine development would adhere to the highest manufacturing and clinical standards and “uphold the integrity of the scientific process.” The widely publicized pledge stated, in relevant part:

Biopharma leaders unite to stand with science

Nine CEOs sign historic pledge to continue to make the safety and well-being of vaccinated individuals the top priority in development of the first COVID-19 vaccines

The CEOs of AstraZeneca [and other biopharmaceutical companies] . . . today announced a historic pledge, outlining a united commitment to uphold the integrity of the scientific process as they work towards potential global regulatory filings and approvals of the first COVID-19 vaccines.

All nine CEOs signed the following pledge:

We, the undersigned biopharmaceutical companies, want to make clear our on-going commitment to developing and testing potential vaccines for COVID-19 in accordance with high ethical standards and sound scientific principles.

The safety and efficacy of vaccines, including any potential vaccine for COVID-19, is reviewed and determined by expert regulatory agencies around the world, such as the [FDA]. FDA has established clear guidance for the development of COVID-19 vaccines and clear criteria for their potential authorization or approval in the US. FDA's guidance and criteria are based on the scientific and medical principles necessary to clearly demonstrate the safety and efficacy of potential COVID-19 vaccines. More specifically, the agency requires that scientific evidence for regulatory approval must come from large, high quality clinical trials that are randomized and observer-blinded, with an expectation of appropriately designed studies with significant numbers of participants across diverse populations.

Following guidance from expert regulatory authorities such as FDA regarding the development of COVID-19 vaccines, consistent with existing standards and practices, and in the interest of public health, we pledge to:

- *Always make the safety and well-being of vaccinated individuals our top priority.*
- *Continue to adhere to high scientific and ethical standards regarding the conduct of clinical trials and the rigor of manufacturing processes.*
- *Only submit for approval or emergency use authorization after demonstrating safety and efficacy through a Phase 3 clinical study that is designed and conducted to meet requirements of expert regulatory authorities such as FDA.*
- *Work to ensure a sufficient supply and range of vaccine options, including those suitable for global access.*

We believe this pledge will help ensure public confidence in the rigorous scientific and regulatory process by which COVID-19 vaccines are evaluated and may ultimately be approved.

Together, these nine companies have collectively developed more than 70 novel vaccines that have helped to eradicate some of the world's most complex and deadly public health threats, underscoring their experience in clinical development and regulatory rigor, as well as their longstanding commitments to patient safety and public health.

36. On November 5, 2020, AstraZeneca filed its financial report for the nine months ended September 30, 2020 on Form 6-K with the SEC. The Form 6-K highlighted AstraZeneca's development of AZD1222, stating, in relevant part:

AZD1222 (SARS-CoV-2 vaccine)

During the period, the University of Oxford and AstraZeneca continued the recruitment of participants into the global clinical trials of the recombinant adenovirus vaccine, AZD1222, reaching c.23,000 participants across trials in the UK, Brazil, South Africa and the US.

In October 2020, the EMA announced that the CHMP had started a rolling review of data for AZD1222. A rolling review is one of the regulatory tools that the EMA uses to flexibly progress the assessment of a promising medicine or vaccine during a public-health emergency. AZD1222 was the first potential COVID-19 vaccine to be evaluated in the EU under these arrangements.

In September 2020, a voluntary pause to vaccination in the global trials was triggered following an unexplained illness in one of the participants receiving the vaccine in the UK Phase II/III trial. The standard review process for trial-safety events involves the examination of safety data by independent monitoring committees. The recommendations from the committees were shared with international regulators. The US FDA asked for additional information, issuing a "clinical hold" to the US Phase III trial during its review. All regulatory authorities subsequently confirmed that the trials were safe to resume, and enrolment has recommenced. It is commonplace that, in large-scale trials, some participants will become unwell, and every unexplained case has to be independently evaluated to ensure careful assessment of safety.

Data on immunogenicity and safety of in older adults was presented at IDWeek showing AZD1222 has an acceptable tolerability profile and is immunogenic in adults above 18 years of age, including older adults. Stronger immune responses were shown after a second dose given one month apart, across all adult age ranges.

Local and systemic reactions were lower in older adults than younger adults (<55 years) and reactions were lessened after the second dose.

37. Also on November 5, 2020, AstraZeneca hosted a conference call with analysts and investors led by the Individual Defendants to discuss the Company's third quarter 2020 earnings results. In his prepared remarks, Defendant Soriot stated: "The efforts against the COVID-19 pandemic include advancing the vaccine candidate and more importantly initiating Phase III trials for our long-acting antibody combination, which is incredibly promising."

38. Similarly, Defendant Pangalos stated: "We continue to lead across multiple fronts in the global response to the COVID-19 pandemic. Progress has been made with our vaccine, AZD1222, and we have now resumed dosing in all our trials globally, alongside entering a rolling regulatory review in Europe." Later in response to an analyst's question regarding the AZD1222 regulatory approval process, Defendant Pangalos stated that "there's nothing from the interactions that we've had with either the MA or the MHRA that is giving us pause that if we demonstrate efficacy and safety in the data set that we have in the studies that are ongoing across Brazil, U.K. and Africa that we won't be able to get an approval."

39. The statements referenced in ¶¶ 26-38 were materially false and misleading because Defendants made false and/or misleading statements, as well as failed to disclose material adverse facts about the Company's business, operations, and compliance policies. Specifically, Defendants made false and/or misleading statements and/or failed to disclose that: (i) initial clinical trials for AZD1222 had suffered from a critical manufacturing error, resulting in a substantial number of trial participants receiving half the designed dosage; (ii) clinical trials for AZD1222 consisted of a patchwork of disparate patient subgroups, each with subtly different treatments, undermining the validity and import of the conclusions that could be drawn from the clinical data across these disparate patient populations; (iii) certain clinical trial participants for

AZD1222 had not received a second dose at the designated time points, but rather received the second dose up to several weeks after the dose had been scheduled to be delivered according to the original trial design; (iv) AstraZeneca had failed to include a substantial number of patients over 55 years of age in its clinical trials for AZD1222, despite this patient population being particularly vulnerable to the effects of COVID-19 and thus a high priority target market for the drug; (v) AstraZeneca's clinical trials for AZD1222 had been hamstrung by widespread flaws in design, errors in execution, and a failure to properly coordinate and communicate with regulatory authorities and the general public; (vi) as a result of all the foregoing, the clinical trials for AZD1222 had not been conducted in accordance with industry best practices and acceptable standards and the data and conclusions that could be derived from the clinical trials was of limited utility; (vii) as a result of all the foregoing, AZD1222 was unlikely to be approved for commercial use in the United States in the short term, one of the largest potential markets for the drug; and (viii) as a result, the Company's public statements were materially false and misleading at all relevant times.

The Truth Begins to Emerge

40. On November 23, 2020, AstraZeneca issued a release announcing the results of an interim analysis of its ongoing trial for AZD1222. Although the release claimed that the drug candidate had met its primary efficacy endpoints, the announcement immediately began to raise questions among analysts and industry experts. AstraZeneca disclosed that the interim analysis involved two smaller scale trials in disparate locales—the U.K. and Brazil—that, for unexplained reasons, employed two different dosing regimens. One clinical trial provided patients a half dose of AZD1222 followed by a full dose, while the other trial provided two full doses. Counterintuitively, AstraZeneca claimed that the half dosing regimen was substantially more

effective at preventing COVID-19 at 90% efficacy than the full dosing regimen, which had achieved just 62% efficacy. AstraZeneca highlighted the blended “average efficacy of 70%” among the two trials.

41. The unexplained discrepancies, omissions, and the need for multiple trials in separate locales raised red flags for investors and distinguished AstraZeneca’s trial procedures from those of other biopharmaceutical companies, such as Pfizer and Moderna, that had recently released interim results for their own COVID-19 vaccine candidates. As questions surrounding AstraZeneca’s announcement grew, the price of AstraZeneca ADSs declined nearly \$2 per ADS during the trading day on November 23, 2020, on extremely high trading volume of over 13 million ADSs traded.

42. To limit the fallout, AstraZeneca hastily put out statements defending its interim analysis and held conference calls with analysts covering the Company. However, the Company’s responses raised more questions than answers and cast further doubt on the integrity of the trials’ design, data, and conclusions. Most shockingly, AstraZeneca revealed that the half dosing regimen was not a part of the original trial design, but rather was forced upon the Company because of a manufacturing error discovered early in the trial process. Specifically, AstraZeneca discovered that a manufacturer had underpredicted the dose of the vaccine by half in the U.K. trial.

43. Additional damaging revelations came to light. For example, Dr. Moncef Slaoui, the head of Operation Warp Speed, told reporters that the half-strength dose had not been initially tested in people over the age of 55, even though this population was the most vulnerable to COVID-19. He also stated that if AstraZeneca could not clearly explain the discrepancies in its trial results, the results would most likely “not be sufficient for approval” for commercial sale in the U.S. Moreover, certain trial participants received their second dose weeks later than originally

planned. The trials also amalgamated a “bewildering array” of experimental groups and subgroups, each receiving subtly different treatments, and inexplicably excluded certain subgroups from the reported interim analysis. AstraZeneca further failed to timely provide data and information to the FDA after the emergence of neurological symptoms in two clinical trial participants earlier in the year, which had resulted in a temporary halt to U.S. clinical trials.

44. Analysts and reporters widely criticized the faulty trial design and failure of AstraZeneca to be forthright with the public and investors, describing AstraZeneca’s interim results as a “mess,” riddled with “irregularities and omissions,” and the product of “cherry-picked . . . data” and “very shaky science.” For example, on November 25, 2020, *Wired* issued a comprehensive report on AstraZeneca’s botched trial results entitled “The AstraZeneca Covid Vaccine Data Isn’t Up to Snuff.” The report stated, in relevant part:

The problems start with the fact that Monday’s announcement did not present results from a single, large-scale, Phase 3 clinical trial, as was the case for earlier bulletins about the BNT-Pfizer and Moderna vaccines. Instead, Oxford-AstraZeneca’s data came out of two separate studies: one in the UK that began in May, and another in Brazil, which got started at the end of June. These two studies were substantially different from one another: They didn’t have standardized dosing schemes across the trials, for one thing, nor did they provide the same “control” injections to volunteers who were not getting the experimental Covid vaccine. The fact that they may have had to combine data from two trials in order to get a strong enough result raises the first red flag.

Consider that leading vaccine makers – including AstraZeneca – issued a scientific-rigor-and-integrity pledge back in September, in which they promised to submit their products for approval or emergency use authorization only “after demonstrating safety and efficacy through a Phase 3 clinical study that is designed and conducted to meet requirements of expert regulatory authorities such as FDA.” Note the wording here: These companies did not suggest that they might claim to have demonstrated efficacy through multiple, distinct clinical studies, combined together to get enough data. They said they would use a Phase 3 study – as in, *one big one*. Yet AstraZeneca has already applied on the basis of this data for approval in Canada, and has plans to do the same in Britain, Europe and Brazil. The company also says it will use the data to apply for emergency use authorization in the US.

The [FDA]'s guidance for Covid-19 vaccines does allow for emergency use authorization based on interim analyses, but the same document says this must be supported by a minimum level of vaccine efficacy “for a placebo-controlled efficacy trial.” Again: it refers to a trial. That is exactly what BNT-Pfizer and Moderna did. Both released the FDA-approved blueprints for their trials – called trial protocols – weeks ahead of time, with details of the calculations and statistical rules that they’d use to determine when to perform an interim analysis and how much certainty could be attached to those results. When BNT-Pfizer’s discussions with the FDA led to changes in this plan, BNT-Pfizer explained why, and released an updated protocol. That’s scientific rigor, and it matters a lot. When a vaccine-maker specifies the rules of the game before the results start coming in, we can check their work and be confident in what they tell us at the end. We can make sure they haven’t cherry-picked the data.

* * *

The Oxford-AstraZeneca story is very different, though. Presumably, neither of the two trials from which they combined data could have provided a clear answer on the vaccine’s efficacy on its own. To make things worse, Oxford-AstraZeneca reported only the results for certain subgroups of people within each one. (For perspective on this: The two subgroups chosen leave out perhaps half the people in the Brazilian trial.) Meanwhile, one of their key claims is that giving half a dose of the vaccine on the first injection, followed by a standard dose on the second one, led to better outcomes – but neither of these trials had been designed to test this hypothesis. In fact, it’s since emerged that the half-dose/full-dose option started out as a mistake, and one that was only caught when some people in the study didn’t have the usual high rate of adverse effects.

There were other dosing issues, too, that haven’t been explained even though dosing is the centerpiece of the release. There are many different regimens in these trials – the UK study has more than two dozen arms, meaning the volunteers were divided into that many groups according to age and how much of the vaccine would be administered and when. The doses are measured by the number of altered viral particles they contain, and the developers decided that the standard dose would be 5×10^{10} viral particles. But for many of those arms in the UK trial – as well as everyone who got the vaccine in the Brazilian trial – publicly available trial information shows that the standard dose could be between 3.5 and 6.5×10^{10} viral particles. The lower end of that range isn’t far off from a half-dose.

* * *

But wait, more red flags! Last week, Oxford-AstraZeneca published some results from earlier in the development of the UK trial. That paper included a trial protocol for the UK study, attached as an appendix. Deep in that document, and apparently overlooked by reporters and commentators, was an eyebrow-raising suggestion: Under a section marked “Interim and primary analyses of the primary outcome,”

the trialists outline a plan to combine and analyze data from four clinical trials (only half of which are Phase 3), carried out in different ways on three different continents. The plan, they wrote, was to pull out results for people across these four trials, and then pool them together for what's called a meta-analysis.

The appendix doesn't say when this became the plan. We don't even know if the Oxford-AstraZeneca team followed it. In fact, it's impossible to know, at this point, just how many analyses these researchers have run, and on which data. That's a scientific red flag with flashing lights. (Again it's useful to compare this work to the BNT-Pfizer and Moderna trials, where the analyses were clearly spelled out ahead of time for everyone to see.) All we know for sure is that on Monday, Oxford-AstraZeneca announced results of a different interim analysis that included only volunteers from the two trials in the UK and Brazil.

There are other problems, too. In the release, Oxford-AstraZeneca reports that two of the dosing regimens "demonstrated efficacy." Presumably, none of the others did, but they didn't give specifics. Of the only two regimens they reported, one (the mistaken first half-dose, followed by a full dose at least a month later) came in at 90 percent, and the other (two standard doses at least a month apart) achieved only 62 percent efficacy. You'll see reports that the vaccine had 70 percent efficacy, on average; but that's un-knowable, because we only have numbers on these two regimens, as opposed to everyone in the trials – and how they arrived at those percentages isn't explained. As far as we know, some of this analysis could hinge on data from just a few sick people. That means the findings could be a coincidence, or they could be biased by other factors. For example, it has since been revealed that the people who received an initial half-dose – and for whom the vaccine was said to have 90-percent efficacy – included no one over the age of 55. That was not the case for the standard-dosing group, however, where the reported efficacy was 62 percent. This demographic difference could be more important than the change to the size of the first dose.

That's not the end of the problems. Overall, the Oxford-AstraZeneca trials appear to include relatively few participants over the age of 55, even though this group is especially vulnerable to Covid-19. (People over 55 were not originally eligible to join the Brazilian trial at all.) Compare that to BNT-Pfizer's trial, where 41 percent of the volunteers were over 55. The Oxford-AstraZeneca vaccine also seems to produce relatively high rates of adverse events.

45. As later summarized by *The New York Times*, "a pattern of communication blunders by AstraZeneca . . . has damaged the company's relationship with regulators, raised doubts about whether its vaccine will stand up to intense public and scientific scrutiny and . . . slowed the vaccine's development." The articles quoted Dr. Eric Topol, a clinical trial expert at Scripps

Research in San Diego, who stated: ““If they just were upfront on safety, on efficacy, on dosing, on everything, from the get-go, they’d be in such a better position. But what they’ve done now is diminish credibility, and I don’t know how they’re going to regain that.”” Given the variety of issues impacting the development of AZD1222, one analyst with SVB Leerink concluded: “We believe that this product will never be licensed in the U.S.” Moreover, Defendants’ failure to deal openly and honestly with investors and the general public has not only undermined confidence in AZD1222, but may have eroded public trust in the COVID-19 vaccine development process more generally.

46. As negative news reports continued to reveal previously undisclosed problems and flaws in AstraZeneca’s clinical trials for AZD1222, the price of AstraZeneca ADSs fell to \$52.60 per share by market close on November 25, 2020, a 5% decline over three trading days in response to adverse news on abnormally high trading volume.

47. As a result of Defendants’ wrongful acts and omissions, and the precipitous decline in the market value of the Company’s securities, Plaintiff and other Class members have suffered significant losses and damages.

NO SAFE HARBOR

48. Defendants’ “Safe Harbor” warnings accompanying AstraZeneca’s reportedly forward-looking statements issued during the Class Period were ineffective to shield those statements from liability. Because most, if not all, the false and misleading statements related to existing facts or conditions, the Safe Harbor has no applicability. To the extent that known trends should have been included in the Company’s financial reports prepared in accordance with Generally Accepted Accounting Principles, they are excluded from the protection of the statutory Safe Harbor. 15 U.S.C. §78u-5(b)(2)(A).

49. The Defendants are also liable for any false or misleading forward-looking statements pleaded because, at the time each forward-looking statement was made, the speaker knew the forward-looking statement was false or misleading and the forward-looking statement was authorized and/or approved by an executive officer and/or director of AstraZeneca who knew that the forward-looking statement was false. In addition, the forward-looking statements were contradicted by existing, undisclosed material facts that were required to be disclosed so that the forward-looking statements would not be misleading. Finally, most of the purported “Safe Harbor” warnings were themselves misleading because they warned of “risks” that had already materialized or failed to provide any meaningful disclosures of the relevant risks.

ADDITIONAL SCIENTER ALLEGATIONS

50. As alleged herein, Defendants acted with scienter in that they knew that the public documents and statements issued or disseminated in the name of the Company were materially false and misleading; knew that such statements or documents would be issued or disseminated to the investing public; and knowingly and substantially participated or acquiesced in the issuance or dissemination of such statements or documents and actions intended to manipulate the market price of AstraZeneca securities as primary violations of the federal securities laws. Defendants, by virtue of their receipt of information reflecting the true facts regarding AstraZeneca, their control over, and/or receipt or modification of AstraZeneca’s allegedly materially misleading misstatements and/or their associations with the Company which made them privy to confidential proprietary information concerning AstraZeneca, participated in the fraudulent scheme alleged herein.

51. Notably, the adverse developments at issue impacted one of AstraZeneca’s most important and high-profile drug candidates, AZD1222. Governments, media, and the general public around the world were closely watching Defendants’ progress in the development of

AZD1222, and the Individual Defendants repeatedly held themselves out to investors as the employees most knowledgeable on the subject and stated that they had significant visibility into progress on the drug candidate's development. For example, on September 8, 2020, Defendant Soriot personally signed a personal "pledge" to "ensure public confidence in the rigorous scientific and regulatory process by which COVID-19 vaccines are evaluated and may ultimately be approved." As such, the Individual Defendants knew or were reckless in not knowing of the undisclosed facts detailed herein.

LOSS CAUSATION

52. During the Class Period, as detailed herein, Defendants engaged in a scheme to deceive the market and a course of conduct that artificially inflated the price of AstraZeneca securities and operated as a fraud or deceit on purchasers of AstraZeneca securities. As detailed above, when the truth about AstraZeneca's misconduct was revealed over time, the value of the Company's securities declined precipitously as the prior artificial inflation no longer propped up the price of the securities. The declines in the price of AstraZeneca securities were the direct result of the nature and extent of Defendants' fraud finally being revealed to investors and the market. The timing and magnitude of the share price declines negate any inference that the losses suffered by Plaintiff and other members of the Class were caused by changed market conditions, macroeconomic or industry factors or Company specific facts unrelated to the Defendants' fraudulent conduct. The economic loss, *i.e.*, damages, suffered by Plaintiff and other Class members, was a direct result of Defendants' fraudulent scheme to artificially inflate the price of the Company's securities and the subsequent significant decline in the value of the Company's securities when Defendants' prior misrepresentations and other fraudulent conduct were revealed.

53. At all relevant times, Defendants' materially false and misleading statements or omissions alleged herein directly or proximately caused the damages suffered by the Plaintiff and

other Class members. Those statements were materially false and misleading through their failure to disclose a true and accurate picture of AstraZeneca's business, operations, and financial condition, as alleged herein. Throughout the Class Period, Defendants issued materially false and misleading statements and omitted material facts necessary to make Defendants' statements not false or misleading, causing the price of AstraZeneca's securities to be artificially inflated. Plaintiff and other Class members purchased AstraZeneca securities at artificially inflated prices, causing them to suffer damages as complained of herein.

PLAINTIFF'S CLASS ACTION ALLEGATIONS

54. This is a class action on behalf of all those who purchased or otherwise acquired AstraZeneca securities during the Class Period and who were damaged thereby (the "Class"). Excluded from the Class are Defendants and their families, the officers and directors of the Company, at all relevant times, members of their immediate families and their legal representatives, heirs, successors or assigns, and any entity in which Defendants have or had a controlling interest.

55. Common questions of law and fact predominate and include: (a) whether Defendants violated the Exchange Act; (b) whether Defendants omitted and/or misrepresented material facts; (c) whether Defendants knew or recklessly disregarded that their statements were false; (d) whether the price of AstraZeneca securities was artificially inflated during the Class Period; and (e) the extent of and appropriate measure of damages.

56. The members of the Class are so numerous that joinder of all members is impracticable. Throughout the Class Period, AstraZeneca securities were actively traded on the NYSE and NASDAQ. Upon information and belief, AstraZeneca securities are held by hundreds or thousands of individuals located geographically throughout the country.

57. Plaintiff's claims are typical of those of the Class. Prosecution of individual actions would create a risk of inconsistent adjudications. Plaintiff will adequately protect the interests of the Class. A class action is superior to other available methods for the fair and efficient adjudication of this controversy.

58. At all relevant times, the market for AstraZeneca securities was an efficient market for the following reasons, among others:

(a) AstraZeneca securities met the requirements for listing and were listed and actively traded on the NYSE and later the NASDAQ during the Class Period, both of which are highly efficient and automated markets;

(b) according to the Company's Form 20-F filed March 3, 2020, there were over 1.3 billion AstraZeneca ordinary shares outstanding as of December 31, 2019, demonstrating a very active and broad market for the AstraZeneca ADSs referencing those ordinary shares;

(c) as a regulated issuer, AstraZeneca filed periodic public reports with the SEC;

(d) AstraZeneca regularly communicated with public investors via established market communication mechanisms, including the regular dissemination of releases on national circuits of major newswire services, the Internet, and other wide-ranging public disclosures; and

(e) unexpected material news about AstraZeneca was rapidly reflected in and incorporated into the Company's AstraZeneca securities prices during the Class Period.

59. As a result of the foregoing, the market for AstraZeneca securities promptly digested current information regarding AstraZeneca from publicly available sources and reflected such information in AstraZeneca's securities price. Under these circumstances, all purchasers of

AstraZeneca securities during the Class Period suffered similar injury through their purchase of AstraZeneca securities at artificially inflated prices, and a presumption of reliance applies.

60. Alternatively, Plaintiff and the members of the Class are entitled to the presumption of reliance established by the Supreme Court in *Affiliated Ute Citizens of the State of Utah v. United States*, 406 U.S. 128, 92 S. Ct. 2430 (1972), as Defendants omitted material information in their Class Period statements in violation of a duty to disclose such information, as detailed above.

COUNT I

(Violations of Section 10(b) of the Exchange Act and Rule 10b-5 Promulgated Thereunder Against All Defendants)

61. Plaintiff repeats and re-alleges each and every allegation contained above as if fully set forth herein.

62. During the Class Period, Defendants disseminated or approved the false or misleading statements specified above, which they knew or recklessly disregarded were misleading in that they contained misrepresentations and failed to disclose material facts necessary in order to make the statements made, in light of the circumstances under which they were made, not misleading.

63. Defendants violated Section 10(b) of the Exchange Act and Rule 10b-5 promulgated thereunder in that they, directly and indirectly, by the use of the means or instrumentality of interstate commerce, or the mails or facility of a national securities exchange:

(a) Employed devices, schemes and artifices to defraud;

(b) Made untrue statements of material fact or omitted to state material facts necessary in order to make the statements made, in light of the circumstances under which they were made, not misleading; or

(c) Engaged in acts, practices and a course of business that operated as a fraud or deceit upon Plaintiff and others similarly situated in connection with their purchases of AstraZeneca securities during the Class Period.

64. Plaintiff and the Class have suffered damages in that, in reliance on the integrity of the market, they paid artificially inflated prices for AstraZeneca securities. Plaintiff and the Class would not have purchased AstraZeneca securities at the prices they paid, or at all, if they had been aware that the market prices had been artificially and falsely inflated by Defendants' misleading statements.

65. By virtue of the foregoing, Defendants have violated Section 10(b) of the Exchange Act, and Rule 10b-5 promulgated thereunder.

66. As a direct and proximate result of Defendants' wrongful conduct, Plaintiff and the other members of the Class suffered damages in connection with their purchases of AstraZeneca securities during the Class Period.

COUNT II

(Violations of Section 20(a) of the Exchange Act Against the Individual Defendants)

67. Plaintiff repeats and re-alleges each and every allegation contained in the foregoing paragraphs as if fully set forth herein.

68. During the Class Period, the Individual Defendants acted as controlling persons of AstraZeneca within the meaning of Section 20(a) of the Exchange Act. By virtue of their share ownership, executive and Board positions and ADSs ownership, and their culpable participation, as alleged above, the Individual Defendants had the power to influence and control and did, directly or indirectly, influence and control the decision making of the Company, including the

content and dissemination of the various statements that Plaintiff contends were false and misleading as detailed herein.

69. The Individual Defendants were provided with or had unlimited access to the Company's internal reports, releases, public filings, and other statements alleged by Plaintiff to be misleading prior to or shortly after these statements were issued, and had the ability to prevent the issuance of the statements or cause them to be corrected. In particular, the Individual Defendants had direct involvement in and responsibility over the day-to-day operations of the Company and, therefore, are presumed to have had the power to control or influence the particular transactions giving rise to the securities violations as alleged herein.

70. By reason of such wrongful conduct, the Individual Defendants are liable pursuant to Section 20(a) of the Exchange Act.

71. As a direct and proximate result of these Defendants' wrongful conduct, Plaintiff and the other members of the Class suffered damages in connection with their purchases of the Company's securities during the Class Period.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff demands judgment against Defendants as follows:

- A. Determining that the instant action may be maintained as a class action under Rule 23 of the Federal Rules of Civil Procedure, and certifying Plaintiff as the Class representative;
- B. Requiring Defendants to pay damages sustained by Plaintiff and the Class by reason of the acts and transactions alleged herein;
- C. Awarding Plaintiff and the other members of the Class prejudgment and post-judgment interest, as well as their reasonable attorneys' fees, expert fees and other costs; and
- D. Awarding such other and further relief as this Court may deem just and proper.

DEMAND FOR TRIAL BY JURY

Plaintiff hereby demands a trial by jury.

Dated: January 29, 2021

Respectfully submitted,

POMERANTZ LLP

/s/ Jeremy A. Lieberman
Jeremy A. Lieberman
J. Alexander Hood II
James M. LoPiano
600 Third Avenue
New York, New York 10016
Telephone: (212) 661-1100
Facsimile: (212) 661-8665
jalieberman@pomlaw.com
ahood@pomlaw.com
jlopiano@pomlaw.com

POMERANTZ LLP

Patrick V. Dahlstrom
10 South La Salle Street, Suite 3505
Chicago, Illinois 60603
Telephone: (312) 377-1181
Facsimile: (312) 377-1184
pdahlstrom@pomlaw.com

**BRONSTEIN, GEWIRTZ &
GROSSMAN, LLC**

Peretz Bronstein
60 East 42nd Street, Suite 4600
New York, New York 10165
Telephone: (212) 697-6484
Facsimile: (212) 697-7296
peretz@bgandg.com

Attorneys for Plaintiff

Wednesday, January 27, 2021

AstraZeneca (AZN)

CERTIFICATION PURSUANT TO FEDERAL SECURITIES LAWS

1. I make this declaration pursuant to Section 27(a)(2) of the Securities Act of 1933 ("Securities Act") and/or Section 21D(a)(2) of the Securities Exchange Act of 1934 ("Exchange Act") as amended by the Private Securities Litigation Reform Act of 1995.
2. I have reviewed a Complaint against AstraZeneca PLC ("AstraZeneca" or the "Company") and authorize the filing of a comparable complaint on my behalf.
3. I did not purchase or acquire AstraZeneca securities at the direction of plaintiffs counsel, or in order to participate in any private action arising under the Securities Act or Exchange Act.
4. I am willing to serve as a representative party on behalf of a Class of investors who purchased or otherwise acquired AstraZeneca securities during the class period, including providing testimony at deposition and trial, if necessary. I understand that the Court has the authority to select the most adequate lead plaintiff in this action.
5. To the best of my current knowledge, the attached sheet lists all of my transactions in AstraZeneca securities during the Class Period as specified in the Complaint.
6. During the three-year period preceding the date on which this Certification is signed, I have not sought to serve as a representative party on behalf of a class under the federal securities laws.
7. I agree not to accept any payment for serving as a representative party on behalf of the class as set forth in the Complaint, beyond my pro rata share of any recovery, except such reasonable costs and expenses directly relating to the representation of the class as ordered or approved by the Court.
8. I declare under penalty of perjury that the foregoing is true and correct.

Name

Print Name

Vladimir Zhukov

Signature



AstraZeneca Plc (AZN)

Zhukov, Vladimir

List of Purchases and Sales

Transaction Type	Date	Number of Shares/Unit	Price Per Share/Unit
Purchase	7/20/2020	3,380	\$60.2213
Purchase	7/22/2020	13	\$56.5100