OncoMed Pharmaceuticals Inc
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Subject Company: OncoMed Pharmaceuticals, Inc.

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Denise Scots - Knight – CEO Richard Jones – CFO Alastair Mackinnon - CMO January 2019 IMPROVING OUTCOMES FOR PATIENTS IN RARE DISEASES

DISCLAIMER 1 Mereo BioPharma Group plc No Offer or Solicitation This communication is not intended to and does not constitute an offer to sell or the solicitation of an offer to subscribe f or or buy or an invitation to purchase or subscribe for any securities or the solicitation of any vote in any jurisdiction pursuant to the proposed transactions or otherwise, nor shall there be any sale, issuance or transfer of securities in any ju ris diction, in each case in contravention of applicable law. No offer of securities shall be made except by means of a prospectus meeting the requirements of Section 10 of the Securities Act and applicable European or UK, as appropriate, regulations. Subject to certain exceptions to be approve d b y the relevant regulators or certain facts to be ascertained, the public offer will not be made directly or indirectly, in or into any jurisdiction where to do so would const itu te a violation of the laws of such jurisdiction, or by use of the mails or by any means or instrumentality (including without limitation, facsimile transmission, telephone and the internet) of interstate or foreign commerce, or any facility of a national securities exchange, of any such jurisdiction. Additional Information Important Additional Information Will be Filed with the SEC Mereo will file with the SEC a Registration Statement on Form F - 4 containing the proxy statement/prospectus of OncoMed that also constitutes a prospectus of Mereo (the " proxy statement/prospectus ") and other documents concerning the proposed merger with the SEC. BEFORE MAKING ANY VOTING DECISION, INVESTORS AND STOCKHOLDERS ARE URGED TO CAREFULLY READ THE PROXY STATEMENT/PROSPECTUS, AND OTHER RELEVANT DOCUMENTS TO BE FIL ED WITH THE SEC, IN THEIR ENTIRETY WHEN THEY BECOME AVAILABLE AND ANY OTHER DOCUMENTS FILED BY EACH OF MEREO AND ONCOMED WITH TH E S EC IN CONNECTION WITH THE PROPOSED MERGER OR INCORPORATED BY REFERENCE THEREIN BECAUSE THEY WILL CONTAIN IMPORTANT INFORMATION ABOUT MEREO, ONCOMED, THE PROPOSED TRANSACTIONS AND RELATED MA TTERS . Investors and stockholders will be able to obtain free copies of the proxy statement/prospectus and other documents filed with the SEC by the parties through the website maintained by the SEC at www.sec.gov. In addition, investors and stockholders will be able to obtain free copies of the proxy statement/prospectus and other documents filed with the SEC on Mereo ' s website at www.mereobiopharma.com (for documents filed with the SEC by Mereo) or on OncoMed ' s website at www.oncomed.com (for documents filed with the SEC by OncoMed). Participants in the Solicitation Mereo , Oncomed and their respective directors, executive officers and certain employees may be deemed to be participants in the solicitation o f proxies from the stockholders of Mereo and OncoMed , respectively in connection with the proposed merger. Stockholders may obtain information regarding the names, affiliations and interests of OncoMed ' s directors and officers in OncoMed ' s Annual Report on Form 10 - K for the fiscal year ended December 31 , 2017 , which was filed with the SEC on March 8 , 2018 , and its definitive proxy statement on Schedule 14 A for the 2018 annual meeting of stockholders, which was filed with the SEC on April 27 , 2018 . To the extent the holdings of OncoMed ' s securities by the Company ' s directors and executive officers have changed since the amounts set forth in OncoMed ' s proxy statement for its 2018 annual meeting of stockholders, such changes have been or will be reflected on Statements of Change in Ownership on Form 4 filed with the SEC. Information regarding the names, affiliations and interests of Mereo ' s directors and officers is contained in Mereo ' s Annual Report for the fiscal year ended December 31 , 2017 and can be obtained free of charge from the sources indicated above. Additional information regarding the interests of such individu als in the proposed merger will be included in the proxy statement/prospectus relating to the proposed merger when it is filed with the SEC. These documents (when available) may be obtained free of charge from the SEC ' s website at www.sec.gov, OncoMed ' s website at www.oncomed.com and Mereo ' s website at www.mereobiopharma.com.

FORWARD LOOKING STATEMENTS 2 Mereo BioPharma Group plc Forward - Looking Statements This communication contains " forward - looking statements " . All statements other than statements of historical fact contained in this report are forward - looking statements within the meaning of Section 27 A of the United States Securities Act of 1933 , as amended (the " Securities Act "), and Section 21 E of the United States Securities Exchange Act of 1934 , as amended (the " Exchange Act "). Forward - looking statements usually relate to future events and anticipated revenues, earnings, cash flows or other aspects of our operations or operating results. Forward - looking statements are often identified by the words " believe, " " expect, " " anticipate, " " plan, " " intend, " " foresee, " " should, " " could, " " may, " " estimate, " " outlook " and similar expressions, including the negative thereof. The absence of these words, however, does not mean that the statements are not f orw ard - looking. These forward - looking statements are based on our current expectations, beliefs and assumptions concerning future developments and business conditions and their potenti al effect on us. While management believes that these forward - looking statements are reasonable as and when made, there can be no assurance that future developments affecting us will be those that we anticipate. Factors that could cause actual results to differ materially from those in the forward - looking statements include failure to obt ain applicable stockholder approvals in a timely manner or otherwise; failure to satisfy other closing conditions to the proposed transaction; failure to realize anticipated benefits o f t he proposed transaction; risks relating to unanticipated costs, liabilities or delays of the transaction; failure or delays in research and development programs; unanticipated changes relat ing to competitive factors in the companies ' industry; risks relating to expectations regarding the capitalization, resources and ownership structure of the combined organizations; the availabili ty of sufficient resources for combined company operations and to conduct or continue planned clinical development programs; the outcome of any legal proceedings related to the merger; ris ks related to the ability to correctly estimate operating expenses and expenses associated with the merger; risks related to the ability to project future cash utilization and reserve s n eeded for contingent future liabilities and business operations; risks related to the changes in market prices of the shares of OncoMed ' s common stock or Mereo ' s ordinary shares relative to the exchange ratio; ability to hire and retain key personnel; the potential impact of announcement or consummation of the proposed transaction on relationships with third parties; changes in law or regulations affecting the companies; international, national or local economic, social or political conditions that could adversely affect the companies and their business; cond iti ons in the credit markets; risks associated with assumptions the parties make in connection with the parties ' critical accounting estimates and other judgments. All of our forward - looking statements involve risks and uncertainties (some of which are significant or beyond our control) and assumptions that could cause actual results to differ materially from our historical experience and our present expectations or projections. You should carefully consider the foregoing facto rs and the other risks and uncertainties that affect the parties ' businesses, including those described in OncoMed ' s Annual Report on Form 10 - K, Quarterly Reports on Form 10 - Q, Current Reports on Form 8 - K and other documents filed from time to time by OncoMed and Mereo ' s with the United States Securities and Exchange Commission (the " SEC ") and those described in Mereo ' s annual reports, relevant reports and other documents published from time to time by Mereo. We wish to caution you not to place undue reliance on any forward - looking statements, whic h speak only as of the date hereof. We undertake no obligation to publicly update or revise any of our forward - looking statements after the date they are made, whether as a result of new information, future events or otherwise, except to the extent required by law.

COMBINATION OF MEREO AND ONCOMED

KEY TRANSACTION TERMS 4 Upfront Stock Consideration • Issuance of new Mereo shares (in the form of newly registered ADRs) to OncoMed shareholders • Ownership split on completion 75 % Mereo / 25 % OncoMed shareholders (1) • Consideration represents a total value of $ 57 million and a 34 % premium to OncoMed ' s total market cap as of market close on 4 Dec 2018 Contingent Value Rights • TIGIT: Issuance of additional Mereo ADRs if OncoMed's partner Celgene exercises its opt in right on the TIGIT program before 31 Dec 2019 • Value to OncoMed shareholders will represent 100% of net Celgene milestone payment actually received – $35m in Celgene contract • Number of Mereo ADRs to be issued calculated based on prevailing Mereo share price following milestone announcement (2) • NAVI: Cash payment of 70% of the net proceeds of any milestones received by Mereo in relation to NAVI for 5 years following complet ion • Subject to a cap of approximately $80 million (1) Based on the total number of Mereo ordinary shares currently outstanding and subject to an adjustment mechanism based on targ et OncoMed cash balance of $ 38 million at closing (2) New ADRs to be issued at completion or pursuant to the TIGIT CVRs will be subject to a total dilution cap such that they do n ot represent more than 66.7 % of Mereo ' s issued share capital prior to completion (or equivalently, 40 % of the enlarged share capital) Combined company will operate as Mereo BioPharma Management & Governance • Mereo ' s CEO, Denise Scots - Knight, and existing management team will lead combined company • Board of directors will include 8 existing Mereo board members (including chair) and 2 new members from OncoMed • London, UK headquarters and US operational base in Redwood City, California Approvals & Closing • Transaction has been unanimously approved by the Board of Directors of each company • Expected closing in H 1 2019 , subject to OncoMed shareholder approval

STRATEGIC RATIONALE FOR THE COMBINATION 5 • Three phase 2 readouts in core orphan products in 2019 (Mereo ’ s BPS - 804 and MPH - 966) • Potential partnerships of Mereo ’ s BCT - 197 and BGS - 649 programs • Potential partnership of OncoMed ’ s navicixizumab • Ongoing Celgene collaboration with an option to license OncoMed ’ s etigilimab • Extends Mereo’s operational runway into 2020 • Pro - forma combined cash balance of $115.5 million as of 30 September 2018 • Opportunity to further extend through partnering or etigilimab option exercise • Increased liquidity for shareholders • More diversified, global shareholder base • US institutional specialist healthcare investors • Two new biopharma industry - experienced independent non - executive directors • Combined expertise in product development and regulatory affairs • UK headquarters in London • US operational base in Redwood City, California Combined portfolio of seven assets with near - term value catalysts Strong combined cash position US and UK stock market listing Enhanced team, capabilities and infrastructure

Dr. Peter Fellner Chairman Richard Jones Executive Director CFO MANAGEMENT & GOVERNANCE 6 John Richard Head of Corporate Development Richard Jones Chief Financial Officer Dr. Denise Scots - Knight Chief Executive Officer Wills Hughes - Wilson Head of Patient Access & Commercial Planning Charles Sermon General Counsel Dr. Alastair MacKinnon Chief Medical Officer Industry Leading Management Expertise Enlarged Group Board of Directors Executive Select Experience Dr. Denise Scots - Knight Executive Director CEO and Co - Founder Dr. Anders Ekblom Non – Executive Director Dr. Frank Armstrong Non – Executive Director Peter Bains Non – Executive Director Kunal Kashyap Non – Executive Director Paul Blackburn Non – Executive Director Deepa R. Pakianathan Non – Executive Director Michael Wyzga Non – Executive Director + Mereo board will be expanded to include two of OncoMed’s directors

NEXT STEPS 7 • Filing with the SEC of a Registration Statement on Form F - 4 for Mereo • Proxy statement of OncoMed (to be included in Mereo Form F - 4) • OncoMed shareholder meeting Targeting completion in H1 2019

OVERVIEW OF THE ENLARGED MEREO

9 CORPORATE AND COMMERCIAL STRATEGY Bone/ Musculoskeletal Respiratory Endocrine BPS - 804 Setrusumab BGS - 649 * Leflutrozole MPH - 966 Alvelestat BCT - 197 * Acumapimod * Plan to partner for development and commercialization Potential new products Potential new products Key in House Expertise • Development • Regulatory Focus on priority pathways • CMC • Medical affairs • Patient access • Commercial • Pricing & reimbursement • Corporate development Mereo BioPharma Group plc The core strategy of the combined business will remain focused on orphan diseases Potential new products >1000 patients High unmet need Core Rare Disease Strategy Oncology Maximize Value from Legacy Programs NAVI * Navicixizumab TIGIT Etigilimab

Mereo BioPharma Group plc 10 Product Candidate Indication Phase 1 Phase 2a Phase 2b Last Milestone Next Anticipated Milestones BPS - 804 (setrusumab) Osteogenesis Imperfecta Phase 2b enrolled MPH - 966 (alvelestat) Severe Alpha - 1 Antitrypsin Deficiency Positive Phase 2 data in bronchiectasis Phase 2 trial top - line data in severe AATD in 4Q 2019 BCT - 197 (acumapimod) Acute Exacerbations of COPD Positive Phase 2 data Enter into strategic relationship for further clinical development BGS - 649 (leflutrozole) Hypogonadotropic Hypogonadism in Obese Men Phase 2 b extension study – topline data Enter into strategic relationship for further clinical development MEREO'S CURRENT PRODUCT PIPELINE Top - line data from open label arm of Phase 2b trial in adults in 1H 2019 and commence pediatric Phase 3 study in Europe and Canada in 2019

Mereo BioPharma Group plc 11 OVERVIEW OF ONCOMED OncoMed Overview • Clinical stage biopharmaceutical company focused on discovering and developing novel anti - cancer therapeutics • Headquartered in Redwood City, California • Currently has three therapeutic candidates in clinical development (Phase 1/1b) • Extensive experience in administrative, regulatory and clinical project management • Established partnership with Celgene Corp • Net cash of $70.9 million as of 30 Sep 2018 Product Candidate Pre - Clinical Phase 1A Phase 1B Current Status Navicixizumab (NAVI) • Phase 1B clinical trial under way Etigilimab (anti - TIGIT) • Phase 1a and 1b underway • Potential to realize $35m milestone from Celgene GITRL - Fc Trimer (GITRL) • Phase 1a data due in 2019 Phase 1 Phase 1A Phase 1A • Navicixizumab (“NAVI”): bispecific monoclonal antibody that targets and inhibits both Delta - like ligand 4 and vascular endothelial growth factor • Etigilimab (“anti - TIGIT”): antibody that targets the T - cell immunoreceptor with immunoglobulin and ITIM domains (TIGIT), an inhibitory receptor that is thought to stop T - cells from attacking tumor cells • GITRL - Fc (“GITRL”): member of the tumor necrosis factor family of ligands and functions to activate the co - stimulatory receptor GITR to enhance T - cell modulated immune responses Key Product Overview & Pipeline

Mereo BioPharma Group plc 12 2018 2019 2020 2021 BPS - 804 MPH - 966 BGS - 649 BCT - 197 Additional Products MEREO'S UPCOMING KEY MILESTONES Pediatric Pivotal 12 month fracture Phase II Option : Commercial partnering Commercial partnering New product opportunities Adult HRPqCT data 6 m 12 m Extension Phase II POC Study Phase 3 planning

COMBINED GROUP CASH RUNWAY FURTHER EXTENDED INTO 2020 13 Key go forward funding priorities Mereo R&D spend on these programs $7.9m in in 1H18 Funding commitment ends in 2018 Trials ended/ending BCT - 197 Phase 2: Completed BGS - 649 Phase 2b: completes this year NAVI Phase 1B Etigilimab (anti - TIGIT) Phase 1A GITRL - Fc Trimer Key ongoing studies BPS - 804 Adult Phase 2b MPH - 966 Phase 2 proof of concept Combined proforma net cash at Sept 30, 2018 was $115.5m Post merger, additional funding expected via partnering opportunities for the non - rare disease products Mereo BioPharma Group plc Funding commitment ends in 2019 Key planned study BPS - 804 Paediatric Phase 3 study

BPS - 804 SETRUSUMAB (ACQUIRED FROM NOVARTIS IN 2015)

OSTEOGENESIS IMPERFECTA A SEVERE GENETIC BONE DISEASE 15 Mereo BioPharma Group plc

Mereo BioPharma Group plc OSTEOGENESIS IMPERFECTA (OI) 16 An orphan genetic chronic bone disorder characterised by fragile bones that break easily 6.2 OI cases per 100,000 population in the US 1 10 OI cases per 100,000 population in the EU 2 Prevalence: 85% - 90% linked to a gene mutation that produces abnormal type 1 collagen 1, 2 72% - 77% of total OI population 3 Symptoms • Frequent bone fractures and brittle teeth • Early hearing loss • Respiratory problems Historically 83 patients received BPS - 804. In OI patients, statistically significant improvement in lumbar spine BMD and increase in biomarkers of bone building and reduction of biomarkers of bone resorption shown OI types I, III and IV occur in 1) Based on Osteogenesis Imperfecta Foundation estimates 2) Based on Orphanet estimates 3) Shapiro J (2014) Osteogenesis Imperfecta: A Translational Approach to Brittle Bone Disease. Academic Press. Chapter 2: p15 - 22 No FDA or EMA approved therapies in OI

OI TREATMENT: DRUGS USED – NONE FDA OR EMA APPROVED FOR OI Bisphosphonates Alendronate, risedronate, pamidronate, zoledronate, etc. Approved for treatment of adult osteoporosis Synthetic analogues of pyrophosphate Inhibit bone resorption Can be given orally or intravenously, depending on compound PTH analogue Teriparatide (Forteo ®) Increases number + activity of osteoblasts Increases bone turnover Usefulness in OI not clear Black box warning due to potential risk of osteosarcoma RANKL Inhibitor • Denosumab (Prolia ®) • Inhibits bone resorption 17

BPS - 804 ADULT PHASE 2B STUDY 18 Revised estimated enrolment: Trial arms: Study duration: 112 OI Patients Types I, III and IV 6 months open label data H1 2019 with 12 months H2 2019 Top line data from three blinded arms by the end of 2019 Three different monthly dosing regimens of BPS - 804 Open label arm at top monthly dose 52 Weeks Analysis at 26 and 52 weeks Primary endpoints Trabecular volumetric BMD by HRpQCT versus baseline at 12 months Change in bone strength using finite element analysis Secondary endpoints • Trabecular volumetric BMD by HRpQCT at 6 months • BMD by DXA scans at 6 and 12 months • HRpQCT parameters • Bone biomarkers • PRO and quality of life Mereo BioPharma Group plc

BPS - 804 – PEDIATRIC PHASE 3 STUDY 19 Estimated enrolment: 24 patients 5 - 18 years Total Study duration ~160 Severe OI Patients Types I, III and IV Initiation in 2019 first in EU and Canada Patients on bisphosphonate therapy One month dose finding – 3 doses versus placebo Additional 128 patients Randomised 1:1 placebo to selected dose 52 Weeks Primary endpoints Fracture rate versus placebo at 12 months Secondary endpoints • Trabecular volumetric BMD by HRpQCT • BMD by DXA scans 12 months • All HRpQCT parameters • Bone biomarkers • PRO and quality of life Mereo BioPharma Group plc

BRITTLE MOUSE MODEL – TREATMENT WITH BPS - 804 20 Mature Brtl control Mature Brtl treated Mature WT Control Mature WT Treated Mereo Biopharma Group plc

THE OFLEY STUDY AND HRPQCT 21 Bone Microarchitecture Assessed by HR - pQCT as Predictor of Fracture Risk in Postmenopausal Women Sornay - Rendu et al JBMR March 09 2017 • Prospective study investigating the prediction of fracture (Fx) by bone microarchitecture assessed by HR - pQCT in postmenopausal women • HR - pQCT used to measure microarchitecture at the distal radius and tibia in 589 women (mean 68 years old) • During 9 year follow up 135 women sustained a fracture including 81 women with a major osteoporotic fracture • After adjusting for age women who had fractures had significantly lower total and trabecular volumetric densities (vBMD) at both sites as determined by HRpQCT • OI patients have fewer and thinner trabeculae and increased cortical porosity

HRPQCT SCANS OF PATIENTS WITH OI AND CONTROLS 22 Mereo Biopharma Group plc

BPS - 804 REGULATORY UPDATE 23 Orphan drug status EU and US PIP agreed with EMA Admitted to the Adaptive Pathway and PRIME in the EU • Ongoing interactive dialogue with EMA and HTA’s • Real world evidence/registries Plan to engage with the FDA on extending the pediatric Phase 3 trial to sites in the United States Will initiate the study in EU and Canada • Validation of HRpQCT in the pediatric study • Once validated, the use of HRpQCT data may be sufficient to support submission of a CMA to the EMA for the treatment of adults with OI in the EU • CMC plan under review with the regulators Mereo BioPharma Group plc

MPH - 966 (formerly AZD - 9668) ALVELESTAT (ACQUIRED FROM ASTRA ZENECA IN 2017)

Mereo BioPharma Group plc ALPHA - 1 ANTITRYPSIN DEFICIENCY (AATD) An orphan genetic disorder that results in pulmonary disease North America ~ 50,000 Europe ~60,000 Estimated prevalence of target patients (PiZZ and Nulls) Symptoms: • Age 20 - 50 - wheeze and reduced exercise tolerance • PiZZ and Null adults develop early onset emphysema • Some mutations can cause cirrhosis in children • Reduced life expectancy Current treatment is weekly IV alpha 1 antitrypsin protein – annual cost up to $150k ~9000 patients MPH - 966 in 1000 patients in 4 COPD studies and a cystic fibrosis and bronchiectasis study (positive) Genetic mutation produces deficiency through abnormal folding of the protein or zero production of the protein Mutations in SERPPINA1 gene chromosome 14 Only homozygotes (ZZ's) and Nulls have severe disease 25 Francisco et al (2012) Rare alpha - 1 - antitrypsin variants: are they really so rare? Therapeutic Advances in Respiratory Disease J anuary 30 Luisetti et al (2004) 1 - Antitrypsin deficiency · 1: Epidemiology of 1 - antitrypsin deficiency Thorax 59:164 - 169

Mereo BioPharma Group plc RESTORING THE BALANCE IN ALPHA - 1 LUNG DISEASE WITH NEUTROPHIL ELASTASE INHIBITOR - ALVELESTAT 26 Elastase Anti - Elastase Alpha - 1 antitrypsin Alvelestat

CT IMAGES SHOWING THE LUNG OF AN ALPHA - 1 ANTITRYPSIN DEFICIENT PATIENT 15 Normal lung AATD lung Mereo Biopharma Group plc

MPH - 966 – RELEVANT CLINICAL STUDIES TO - DATE Cystic Fibrosis • Total of 56 patients in one study • 27 patients treated for 4 weeks with 60mg BD • Statistically significant reduction in the biomarker urine desmosine Bronchiectasis • Total of 38 patients in one study • 22 patients treated for 4 weeks with 60mg BD • Statistically significant improvement in FEV1 and clinically meaningful improvement in SVC (slow vital capacity) 28 • In addition total of 970 patients across four COPD studies

MPH - 966 – PROOF OF CONCEPT PHASE 2 STUDY • Three - arm study with two different dosing arms versus placebo • Planned enrollment - 165 patients completed • Treatment duration - 12 weeks • FPI in November 2018 Primary Endpoint • Desmosine - biomarker shown to have correlation with lung density by CT scan 1 Proposed Patient Population • CT scan - emphysema • Confirmed genotype (PiZZ or Null) • FEV1>25% 29 1) A biomarker in KAMADA's RAPID study. Ref: Ma S, Lin YY, Cantor JO, et al. The effect of alpha - 1 proteinase inhibitor on bioma rkers of elastin degradation in alpha - 1 antitrypsin deficiency: An analysis of the RAPID/RAPID Extension trials. Chronic Obstr Pulm Dis. 2017; 4(1): 34 - 44. Mereo BioPharma Group plc

BCT - 197 ACUMAPIMOD (ACQUIRED FROM NOVARTIS IN 2015)

Mereo BioPharma Group plc ACUTE EXACERBATIONS OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE (AE COPD) 31 16m COPD cases diagnosed in the US 1 13m COPD cases estimated in the EU 2 Prevalence: >1.5m Hospital visits per year 3 COPD includes chronic bronchitis, emphysema and some forms of bronchiectasis Symptoms AECOPD - patients with COPD experience a sustained increase in cough, sputum production or dyspnoea Each episode poses significant risk to the patient, including hospitalisation and an increased risk of death 62.5% of all hospital admissions related to COPD are AECOPD patients 4 1) National Heart, Lung and Blood Institute (accessed in Nov 2017) 2) COPD Coalition 3) Mannino et al (2002) MMWR Surveill Summ 51: p1 - 6 4) Wier et al (2011) AHRQ, HCUP, Statistical Brief #106 p1 - 11

32 PRIMARY ENDPOINT (CHANGE IN FEV1 FROM BASELINE TO DAY 7 WITHIN THE TREATMENT GROUP) Primary endpoint met on an ITT basis for both high and low dose regimens (p= 0.012, p ≤ 0.001) versus no significant change from baseline (p=0.102) for Standard of Care plus placebo POSITIVE CLINICAL AND HEALTH ECONOMIC OUTCOMES SUPPORTED BY OTHER SECONDARY MEASURES Statistically significant reduction of more than 50% (p ≤ 0.027 to 0.05) in the number of clinical treatment failures compared to standard of care plus placebo as measured by the number of re hospitalisations for the treatment of COPD at days 90 through 150 SAFETY BCT - 197 was reported to be safe and well tolerated with adverse events in line with expectations for this patient population BCT - 197 MET THE PRIMARY END - POINT IN THE PHASE 2 TRIAL TOTAL OF 282 PATIENTS Mereo BioPharma Group plc

BCT - 197 RESULTED IN A SIGNIFICANT REDUCTION IN THE INFLAMMATORY MARKERS HSCRP AND FIBRINOGEN IN THE FIRST 14 DAYS DURING THE INDEX EXACERBATIO N 33 • Dose – dependent, statistically significant reductions in key inflammatory markers hsCRP and fibrinogen • Suppression of hsCRP maintained through the 26 - week observation period Mereo Biopharma Group plc P - values compared to placebo *= <0.05 **=<0.02 ***=<0.01 P - values compared to placebo *= <0.05 NS= p>0.05

BGS - 649 LEFLUTROZOLE (ACQUIRED FROM NOVARTIS IN 2015)

HYPOGONADOTROPIC HYPOGONADISM (HH) IN OBESE MEN 35 A highly prevalent clinical syndrome that results from inadequate levels of testosterone 35.5 % Adult males in the US are obese 1 21.9 % Adult males in the EU are obese 1 Prevalence: 15.8 % HH prevalence in obese men 2 12 million* obese men with HH in the US and the EU Symptoms: • Reduced or loss of libido • Erectile dysfunction • Fatigue • Impaired physical endurance and strength • Loss of vitality/motivation Low current treatment rates <13% in the US and lower in Europe 3 Androgel average annual pricing is approximately $7,000 per year (market leader) 1) Based on 2016 WHO estimates 2) Hofstra et al (2008) Netherlands J. Med, 66 p103 - 109 3) Update on Hypogonadism and Testosterone Replacement Therapy (2011) Chapter in Practicing Clinical Exchange p1 - 15 *estimate Mereo BioPharma Group plc

HYPOGONADOTROPIC HYPOGONADISM – TREATMENT LANDSCAPE 36 TOPICAL TESTOSTERONE Black box warning – secondary exposure to testosterone Suppression of LH and FSH (loss of fertility) Potential for supra physiological levels of testosterone – cardiovascular Daily application – messy to apply Mereo BioPharma Group plc TESTOSTERONE INJECTABLES AND PATCHES Black box warning – pulmonary oil micro embolism and anaphylaxis shock Suppression of LH and FSH (loss of fertility) Not flexible for dose reversal Not self applied plus needle phobia ORAL TESOSTERONE In studies levels of supra physiological levels of testosterone beyond FDA limits Suppression of LH and FSH (loss of fertility) Twice/once daily tablet Patient preferred oral option with no risk of transference x BGS - 649 – ORAL and OBSERVED TO RESTORE THE PATIENT ' S OWN TESTOSTERONE Once/week tablet which in clinical studies to - date has normalised testosterone levels with no observations of supra physiological levels and with normalisation of LH and FSH (fertility) TAK 448 – kisspeptin agonist (terminated) OTHER APPROACHES

BGS - 649 MET THE PRIMARY END POINT IN THE PHASE 2B TRIAL TOTAL OF 271 PATIENTS 37 • PRIMARY ENDPOINT : normalisation of testosterone @ 24 wk in > 75 % subjects Met at all three doses p< 0.001 versus placebo No patient > 1500 ng/dl at any time point, in the treatment groups • SECONDARY ENDPOINT : normalisation of testosterone @ 24 wk in > 90 % subjects met in top two doses (p< 0.001) with 88 % of subjects on low dose LS Mean change from baseline in testosterone – ITT population (MMRM) Mereo Biopharma Group plc

38 BGS - 649 MET THE SECONDARY END POINTS IN THE PHASE 2B TRIAL Total of 271 patients LS Mean change from baseline in FSH in ITT population (MMRM) LS Mean change from baseline in LH in ITT population (MMRM) SECONDARY ENDPOINTS Change in fertility hormones (LH and FSH) from baseline at 24 weeks met by all three doses p<0.001 versus placebo EXPLORATORY ENDPOINTS Improvement in total motile sperm count across all three doses versus placebo with statistical significance attained for high dose Positive trend on reduction of fatigue in the exploratory patient reported outcomes (PROs) at 8 - 12 weeks treatment PHASE 2 B EXTENSION STUDY (143 patients) No doses met lower bound (95 % CI) of pre - specified safety criterion of a > 3 % reduction in lumbar spine, hip or femoral neck BMD after 48 weeks. No shift into osteopenia or osteoporosis, no development of new osteopenia. Efficacy data consistent with Phase 2 B: • all three doses normalised testosterone in 75 % of patients • all three doses normalised testosterone in 90 % of patients • all three doses increased LH and FSH Safety Reported to be safe and well tolerated during the study. Increased incidence of elevated haematocrit levels was noted and in the higher doses small increases in blood pressure, both consistent with increasing testosterone levels Mereo Biopharma Group plc

1H 2018 MEREO FINANCIAL RESULTS

FINANCIAL HIGHLIGHTS 40 Mereo BioPharma Group plc £126 million* R&D spend in 1H 2018 £ 10.9 million Cash and short term deposits and short term investments at June 30 2018: £36.9 million* £ 7.1 million Funded through to key clinical milestones *(gross including debt facility) (£3.8m on non - GAAP adjusted basis) (£10.5m on non - GAAP adjusted basis) Admin Expenses in 1 H 2018 Total financing raised since launch *unaudited balances excludes FY'17R&D tax credit £8.2m Novartis convertible debt balance at June 30 2018 £2.3 million • £ 15 m (gross) placing completed in April 2017 • £20m debt facility agreed in August, 2017 fully drawn as at December 31, 2017

APPENDIX

ROBUST INTELLECTUAL PROPERTY PORTFOLIO 2017 2019 2021 2023 2025 2027 2029 2031 2033 2035 2037 Compound per se – granted in all major territories Data/Marketing Exclusivity depending on MA date SPC/Term Extension Compound per se – granted in all major territories BCT - 197 MPH - 966 BPS - 804 Antibody and use – granted in all major territories 1 Data & Marketing Exclusivity - EUROPE SPC/Term Extension 42 1 Orphan Drug Exclusivity - US - EUROPE - US 1. Assuming accelerated approval/adaptive pathway 2. Alternative SPC extension Mereo BioPharma Group plc IP significantly expanded with orphan drug status in US and EU Extended IP protection with additional salt/polymorph patent Additional formulation and methods of use filed Data/Marketing Exclusivity depending on MA date Medical use - granted in all major territories 2 SPC/Term Extension SPC/Term Extension Data/Marketing Exclusivity depending on MA date Formulations and Medical Use – granted in all major territories SPC/Term Extension Extended IP protection with additional medical use patent BGS - 649 Novel salt/polymorph – granted in all major territories 2 SPC/Term Extension

43 Transaction Mereo Entitlement NVS/AZ Entitlement Licence of product in territory or worldwide Majority percent of licensing income (upfront, milestones and royalties) Share of licensing income (upfront, milestones and royalties) Commercialisation by Mereo (territory or worldwide) Product sales Ascending tiered r oyalties typical for Phase 2 products and in the case of AZ cash milestones on sales Sale of Mereo subsidiary Proceeds from sale Buyer steps into Mereo’s shoes re (i) royalties and any milestones on any products directly commercialised by Buyer (ii) sharing any licensing income Sale of Mereo Group Exit for shareholders (NVS and AZ equity) Buyer steps into Mereo’s shoes re (i) royalties and/or milestones on any products directly commercialised by Buyer (ii) sharing any licensing income Option to acquire MPH966 outright Equity and cash milestones including successful POC study and initiation of pivotal study GUIDANCE ON TERMS OF PRODUCT ACQUISITION AND LICENSE AGREEMENTS Mereo BioPharma Group plc CONFIDENTIAL

Clinically meaningful data Clear clinical & regulatory strategy Clinical trials to reach value creating milestone Optionality around further value creation Indication with unmet medical need Sourced from large pharma companies Scientific rationale & robust data package Favourable competitive landscape ROBUST PRODUCT CANDIDATE SELECTION CRITERIA 44 Selection Criteria Mereo BioPharma Group plc

Mereo BioPharma Group plc BPS - 804 (OI) 45 Completed clinical studies to date: • 83 patients have received BPS - 804 • Statistically significant improvement in BMD and bone biomarkers in OI patients (P1NP, P1CP, BSAP and OC) • Down regulation of bone resorption biomarker CTX - 1 in OI patients • Well tolerated in the target population Day 141 BPS - 804 Placebo Parameter N Ratio geometric mean to baseline P value N Ratio geometric mean to baseline P value Bone mineral density 9 1.04 0.038* 4 1.01 0.138 Fully human monoclonal antibody designed to inhibit sclerostin Bone Biomarkers: Procollagen I N - terminal propeptide (P1NP), procollagen C terminal propeptide (P1CP) , bone - specific alkaline phosphatase (BSAP), osteocalcin (OC), Carboxy - terminal telopeptide (CTX - 1) * Statistical significance Note: Trial performed on 14 patients, 9 received BPS - 804 and 5 received placebo Novartis data: Statistically significant increase in BMD in OI patients Type I, III, IV

RANGE OF SEVERITY IN OI 46

NON - PHARMACOLOGICAL TREATMENTS • Metal rod insertion (not plates!) into long bones (since 1940s) 47 • Spinal fusion for scoliosis • Physiotherapy to strenghten muscles, improve motility • Physical aids (crutches, wheelchairs, splints, …) • Community support

48 SETRUSUMAB: MECHANISM OF ACTION • In the absence of sclerostin, Wnt activates Dishevelled through LRP 5/6/Frizzled • The intracellular pathways upregulate target gene expression, osteoblast differentiation, proliferation & survival, leading to increased bone formation • Sclerostin (secreted by osteocytes) inhibits this process • Setrusumab blocks the inhibition by sclerostin, allowing the original pathway to proceed

Mereo BioPharma Group plc 49 49 BPS - 804: Statistical significant benefit for markers of bone mineralization * Statistical significance Day 43 BPS - 804 Reference Parameter N Geometric mean to baseline P value N Geometric mean to baseline P value PINP 9 1.84 <0.001* 5 1.06 0.651 PICP 9 1.53 0.003* 5 1.05 0.6 BSAP 9 1.59 <0.001* 5 0.87 0.582 OC 9 1.44 0.012* 5 0.86 0.436

Mereo BioPharma Group plc BPS - 804 (OI) - HISTORIC DATA 50 Completed clinical studies to date: • 83 patients have received BPS - 804 • Statistically significant improvement in BMD and bone biomarkers in OI patients (P1NP, P1CP, BSAP and OC) • Down regulation of bone resorption biomarker CTX - 1 in OI patients • Well tolerated in the target population Day 141 BPS - 804 Placebo Parameter N Ratio geometric mean to baseline P value N Ratio geometric mean to baseline P value Bone mineral density 9 1.04 0.038* 4 1.01 0.138 Fully human monoclonal antibody designed to inhibit sclerostin Bone Biomarkers: Procollagen I N - terminal propeptide (P1NP), procollagen C terminal propeptide (P1CP) , bone - specific alkaline phosphatase (BSAP), osteocalcin (OC), Carboxy - terminal telopeptide (CTX - 1) * Statistical significance Note: Trial performed on 14 patients, 9 received BPS - 804 and 5 received placebo Novartis data: Statistically significant increase in BMD in OI patients Type I, III, IV

ALPHA 1 ANTITRYPSIN DEFICIENCY CURRENT TREATMENT • Routine COPD medications • Augmentation therapy: - Plasma derived alpha 1 anti trypsin - Weekly one hour IV infusion - Approval based on restoration of A1AT to a threshold level NOT clinical outcome data - Cost $150k pa - ~9,000 patients treated • Surgery – lung volume reduction surgery or transplant 51 1 Brode et al Alpha - 1 antitrypsin deficiency: a commonly overlooked cause of lung disease. CMAJ, September 4, 2012, 184(12)

LONG TERM AUGMENTATION AND SHORT TERM TREATMENT WITH AZD - 9668 – IMPACT ON DESMOSINE RAPID study - 2 years of augmentation in AATD patients • Reduced loss of lung density: - Total lung capacity (TLC) - 1.45g/l/year vs - 2.19 g/l/year (P=0.03) • Post hoc analysis demonstrated correlation in change in desmosine vs lung density (reduced desmosine – less loss of lung density) -15 -10 -5 0 5 10 15 AZD d28 A1P1 3 mos A1P1 12 mos A1P1 24 mos % Change in Plasma Desmosine Change in Median Plasma Desmosine AZD6998 - alvelestat (CF and BE combined) compared to A1P1 Augmentation (RAPID Study) Active Pbo Data from RAPID study 52

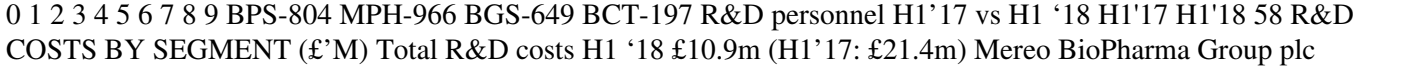
BCT197 REDUCED THE PERCENTAGE OF PATIENTS WHO SUFFERED A SUBSEQU ENT EXACERBATION IN FREQUENT EXACERBATORS 53 • Effect on moderate/severe exacerbations best seen in patients with >= 2 exacerbations / year • Patient population with highest unmet need Mereo Biopharma Group plc 47% 40% 25% 53% 60% 75 % 0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100% PLACEBO LDR HDR Mod / severe exacerbation Mild or no event

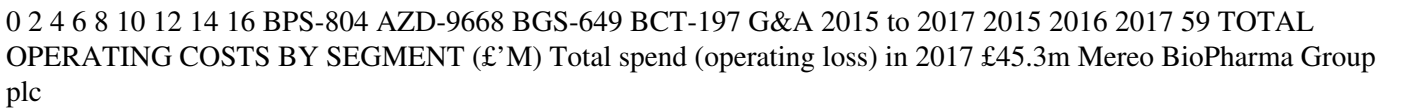
BCT - 197: IMPROVEMENT IN FEV1 54 Completed clinical studies to date: • 310 subjects have received BCT - 197 • Dosed at 75mg x 2 – AUC over exacerbation period (14 days) shows a statistically significant improvement in FEV1 vs placebo and prednisolone (P=0.0198 and 0.0102) • Well tolerated in the target population Clinically meaningful improvement in FEV 1 (> 100 ml) over exacerbation period p38 MAPK inhibitor Mereo BioPharma Group plc

Mereo BioPharma Group plc BGS - 649 (HH): HPT FEEDBACK LOOP PROCESS 55

H1 2018 FINANCIAL RESULTS

57 Mereo BioPharma Group plc SUMMARY OF FINANCIAL RESULTS FOR THE SIX MONTHS ENDED JUNE, 30 2018 H1’18 H1’18 £’000 Share based payments £’000 Fx £’000 One off legal costs £’000 H1’2018 Non - GAAP £’000 H1’2017 Non - GAAP £’000 Development costs (10,864) 337 - (10,527) (20,823) Admin expenses (7,102) 1,080 2,235 (3,787) (2,982) Operating loss (17,966) (14,314) (23,805) Finance charge (1,386) 87 (1,299) 199 Loss before tax (19,352) (15,613) (23,606) Tax 2,365 2,365 4,546 Net Loss (16,988) 1,417 87 2,235 (13,249) (19,060) EPS 24 pence 19 pence 28 pence Net cash resources 36, 912* 56,575 * Excludes FY ‘17 R&D tax credit due of £8.2m


0 1 2 3 4 5 6 7 8 9 BPS-804 MPH-966 BGS-649 BCT-197 R&D personnel H1’17 vs H1 ‘18 H1'17 H1'18 58 R&D COSTS BY SEGMENT (£’M) Total R&D costs H1 ‘18 £10.9m (H1’17: £21.4m) Mereo BioPharma Group plc


0 2 4 6 8 10 12 14 16 BPS-804 AZD-9668 BGS-649 BCT-197 G&A 2015 to 2017 2015 2016 2017 59 TOTAL OPERATING COSTS BY SEGMENT (£'M) Total spend (operating loss) in 2017 £45.3m Mereo BioPharma Group plc

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