



# DO-2: Next generation MET inhibitor

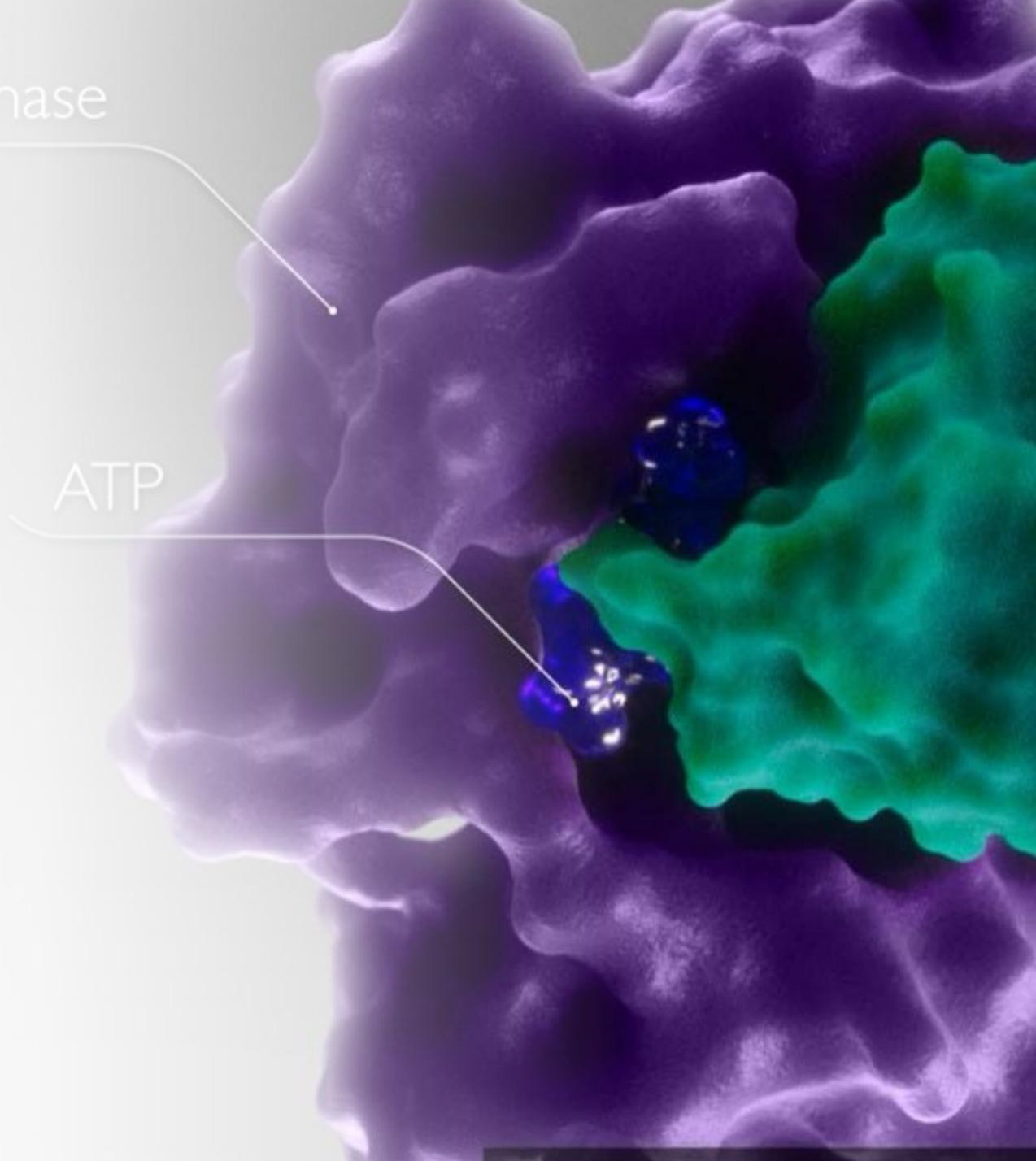
For improved treatment of lung  
cancer patients

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Deuter<sup>o</sup>ncology

MET Kinase

ATP



# Who we are

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- Founded in Q4 '20 in Belgium
  - Dr Perera originated the initial idea for the use of deuteration as a means to modulate the metabolic properties of the parent drug
- Seed and Series A investments of ~€8M + non dilutive ~€0.5
- Investors include Newton Biocapital (lead investor), Noshag & InVestsud
- Significant know-how on high-efficiency deuteration
- Exclusive global licence from Johnson and Johnson

# Our value proposition

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Potential 'Best-in-class' targeted MET kinase inhibitor with better safety profile to maintain or extend clinical benefit and allow combination therapy with a range of SOC.



DO-2 Phase 1 (started in 2023) is boding well to determine optimal dose. Convincing signs of clinical benefit; well tolerated with no incidences of drug related peripheral edema or liver enzyme elevations seen with competitors; no DLT observed.



CMC under control; kg batch in place; scale up is validated; 24 month stability data



IP exclusivity until 2035 – ww rights under parent patent  
Novel applications relating to composition of matter and dosing regimen in preparation

# Seasoned team to make this happen



**Timothy Perera, PhD.**  
**Founder/CEO**



**Els Hubloux**  
**Chief Financial Officer**



**Prof Jaap Verweij**  
**Chief Medical officer**



**Florence Wastelin M.Sc. MBA.**  
**Clinical Operations**



**Hilde Windels MBA.**  
**Corporate Development**

## 30 y Pharma Experience

OCTIMET CSO/CEO  
 Global Discovery Leader  
 Lung Disease Area at J&J.  
 Discovery leader/project  
 champion for 4 clinical stage  
 agents including approved  
 FGFR inhibitor Balversa  
 (erdafitinib)

## 25 y Life Sciences Experience

Corporate and Venture Capital  
 experience including Pronota,  
 Capricorn Venture Partners, QBIC  
 Venture Partners, Newton Biocapital  
 Venture Partners. Executive roles  
 included CFO, VC fund partner  
 positions.  
 Experienced board member held  
 various board positions in medtech  
 and biotech companies.

## 35 y Clinical Development

Prof Emeritus Erasmus Medical  
 Oncology  
 Managing Director at The  
 Cancer Drug Development  
 Forum (CDDF)

## 20 y at GSK Biologicals

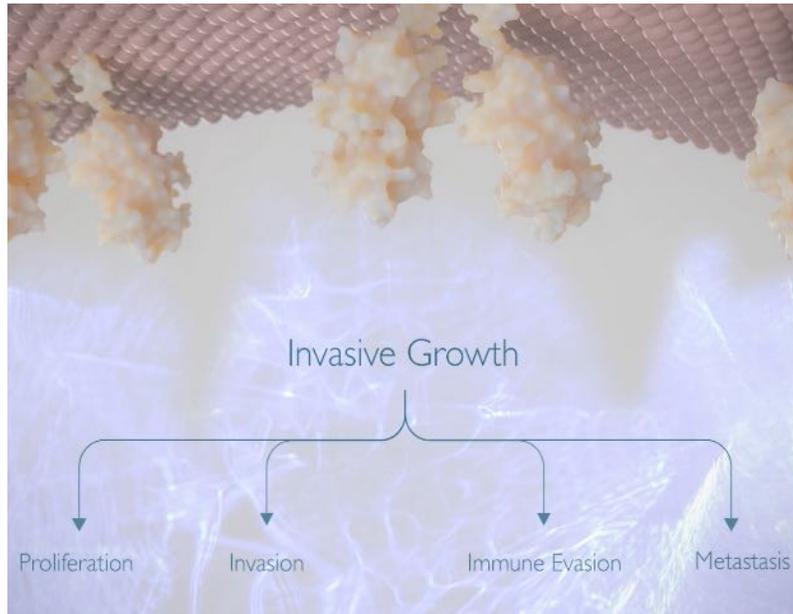
Leading teams across global  
 projects and leading Clinical  
 Operations department for  
 the development of  
 immunotherapeutics against  
 cancer.

## 25 y Biotech Experience

Including Devgen, Biocartis and  
 med. and small size biotech  
 companies. Executive roles  
 included CFO, co-CEO and CEO  
 positions.  
 Board member in 4 public and  
 1 private company.

**Additional support from external partners in targeted outsourced activities.**

# MET, a clinically validated drug target



- MET is expressed in normal tissues including vascular endothelial cells
- MET dysregulation is associated with a poor prognosis in a range of cancers
- **Clinical activity proven for class**
  - Only in 2<sup>nd</sup> line (in EU) patients with non-small cell lung cancer (NSCLC) harbouring exon14 skipping (METex14) mutations.

|                    |             |                 |
|--------------------|-------------|-----------------|
| <u>Capmatinib</u>  | Novartis    | <u>Approved</u> |
| <u>Tepotinib</u>   | Merck       | <u>Approved</u> |
| <u>Savolitinib</u> | AstraZeneca | Approved        |

Oncogenic driver when wild type receptor is overexpressed due to

- MET amplification
- MET mutation (ex 14 skipping)

~2 to 5 % of advanced NSCLC

- **Yet, significant toxicities are seen**
  - high daily doses (500-800mg) frequently leading to dose interruptions and reductions.
  - impacting Quality of Life and clinical benefit.

# Peripheral edema and liver toxicity are frequently observed with approved agents



Figure - available from: [Thoracic Cancer](#)

1 Number of patients : 313 (cohorts A+C) from registration trial VISION (JAMA Oncol. 2023;9(9):1260-1266,doi:10.1001/jamaoncol.2023.1962)

2 Number of patients : 364 (all cohorts) from registration trial GEOMETRY (N Engl J Med 2020;383:944-957, DOI: 10.1056/NEJMoa2002787)

3 [https://ec.europa.eu/health/documents/community-register/2022/20220216154592/anx\\_154592\\_en.pdf](https://ec.europa.eu/health/documents/community-register/2022/20220216154592/anx_154592_en.pdf)

4 [https://www.accessdata.fda.gov/drugsatfda\\_docs/nda/2021/214096Orig1s000MultidisciplineR.pdf](https://www.accessdata.fda.gov/drugsatfda_docs/nda/2021/214096Orig1s000MultidisciplineR.pdf)

5 [https://ec.europa.eu/health/documents/community-register/2022/20220620155859/anx\\_155859\\_en.pdf](https://ec.europa.eu/health/documents/community-register/2022/20220620155859/anx_155859_en.pdf)

6 [https://www.accessdata.fda.gov/drugsatfda\\_docs/nda/2020/213591Orig1s000MultidisciplineR.pdf](https://www.accessdata.fda.gov/drugsatfda_docs/nda/2020/213591Orig1s000MultidisciplineR.pdf)

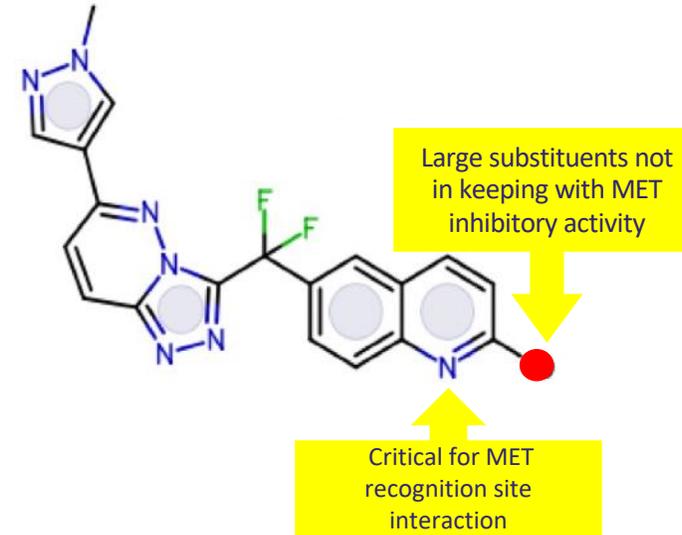
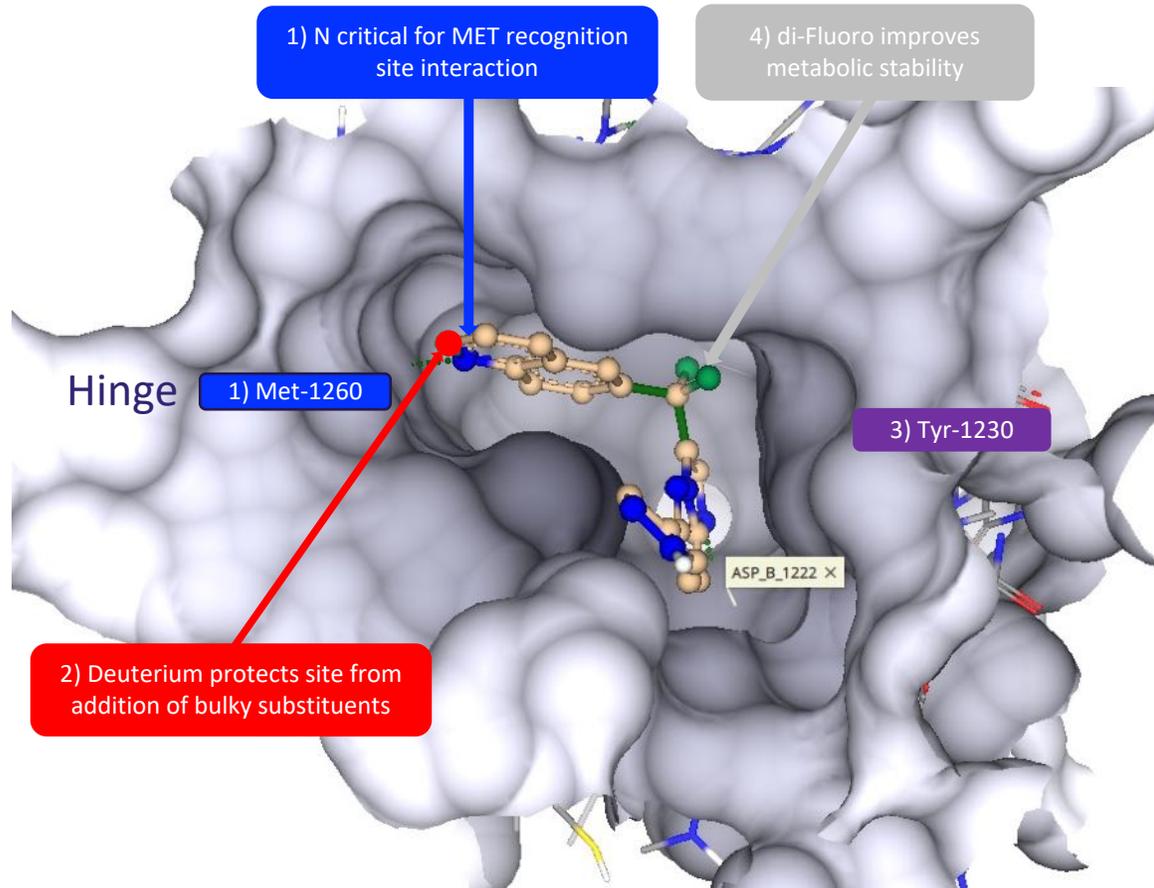
## Peripheral edema

- 67% of tepotinib<sup>1</sup> and 51% of capmatinib<sup>2</sup> treated patients endure some degree of edema
- Median time to onset of edema 9 weeks<sup>3</sup>
- Peripheral edema; observed in the pre-clinical tox study<sup>4</sup> with tepotinib.
- **NOT observed with DO-2**

## Liver enzyme elevations

- seen in 48% of tepotinib<sup>3</sup> and 46% of capamatinib<sup>2</sup> treated patients
- Liver toxicity; observed in the pre-clinical tox study<sup>4</sup> with tepotinib and capmatinib<sup>6</sup>.
- **NOT observed with DO-2**
- Tox profile of approved agents comparable to SOC (Chemo/Immunotherapy)
- **Not reimbursed in many countries... Belgium, France**

# DO-2 designed to fit into the ATP binding pocket of the MET kinase



Surface of the ATP binding pocket of MET kinase

- 1) Critical recognition site at Met-1160 that is bound by the N of the quinoline
- 2) Position adjacent to critical N is liable to oxidation by Aldehyde oxidase. Bulky substitutions at this site are not tolerated. Deuterium protects metabolism at this site.
- 3) Parallel alignment of Tyr 1230 and DO-2 leads to strong interaction resulting in selectivity and a slow off rate
- 4) di-fluoro substituents significantly improves metabolic stability

# Metabolism of chemical scaffold of selective Type 1B MET kinase inhibitors...



Nitrogen (★) => critical for binding to MET

Aldehyde Oxidase 1 replaces the Hydrogen\* by a bulky Oxygen which prevents binding to intended target

- Reducing exposure to active parent drug
- Requiring higher daily doses

Most abundant circulating metabolite(s) of parent drug with no/negligible pharmacological activity for:

- Capmatinib<sup>1</sup>. = 50% inactive metabolite(s)
- Tepotinib<sup>2</sup>. = 65% inactive metabolite(s)
- Savolitinib<sup>3</sup>. = 88% inactive metabolite(s)
- DO-2 = 10% inactive metabolite

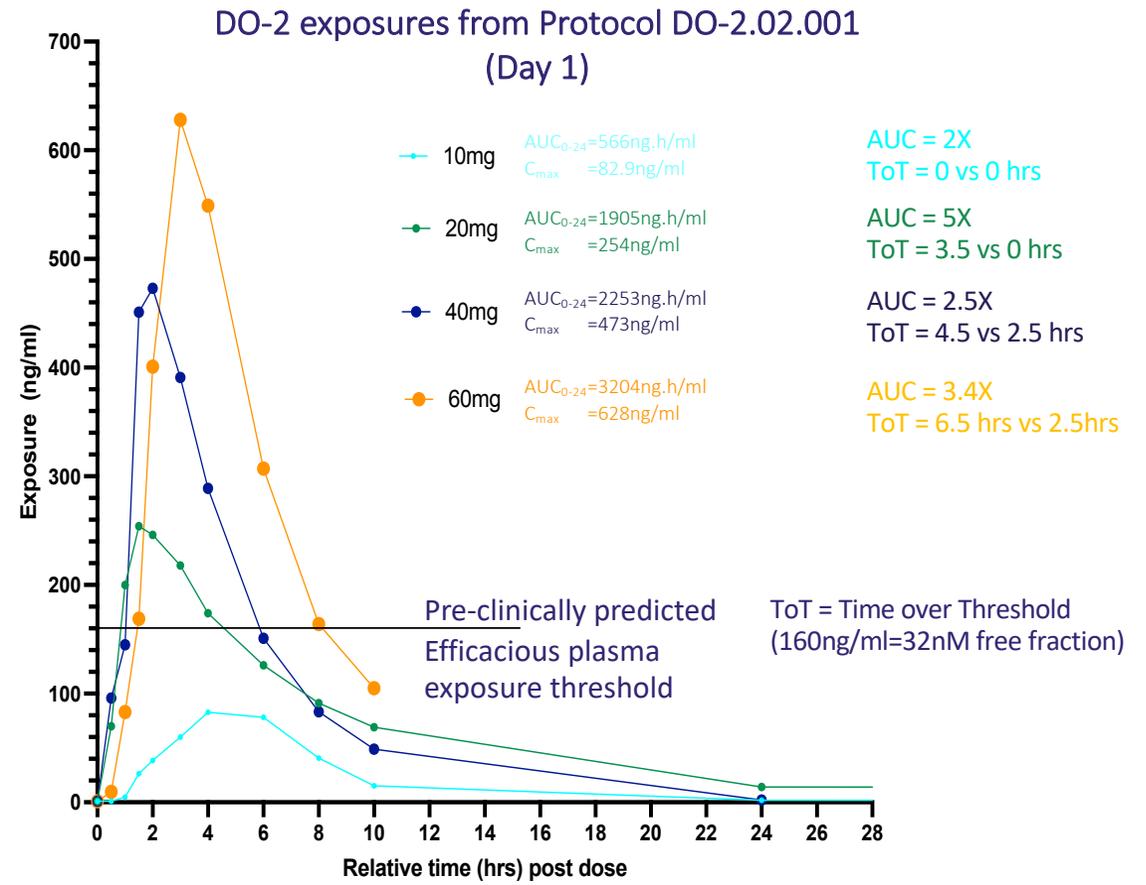
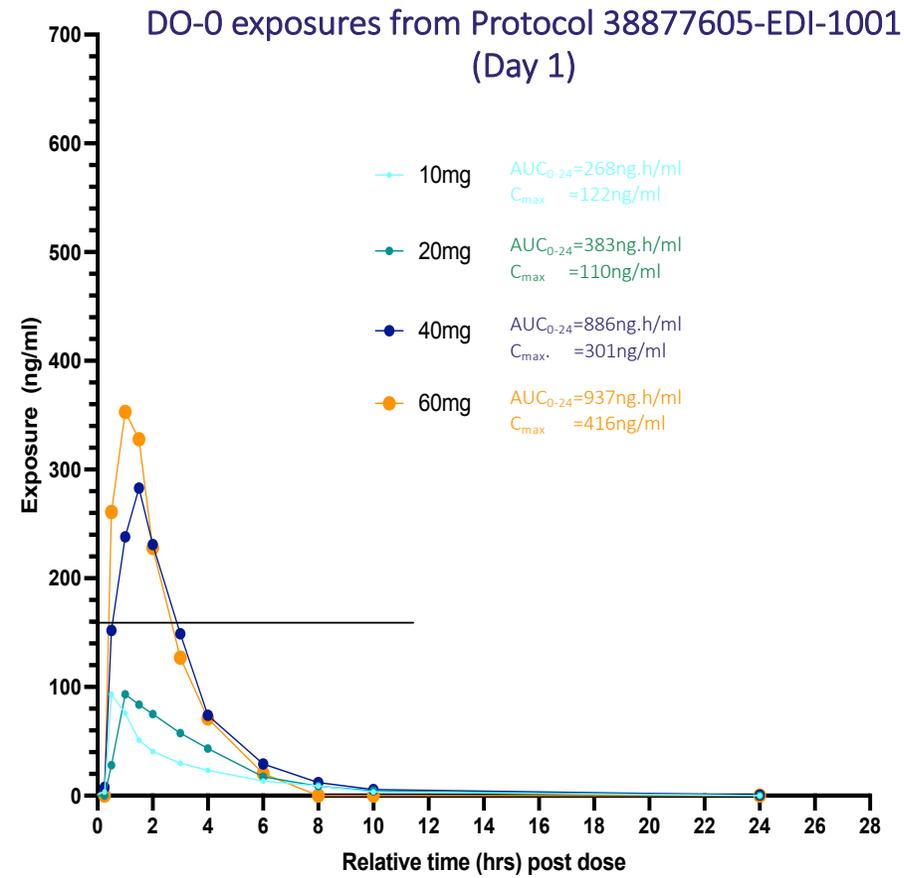
....lead to adverse events

1) Glaenzel et al, Drug Metab Dispos 48:873–885, October 2020 : 2) Xiong et al CPT Pharmacometrics Syst. Pharmacol. 2021;10:428 : 3) Miah et al, Clin Pharmacol Drug Dev. 2023 Apr;12(4):424-435



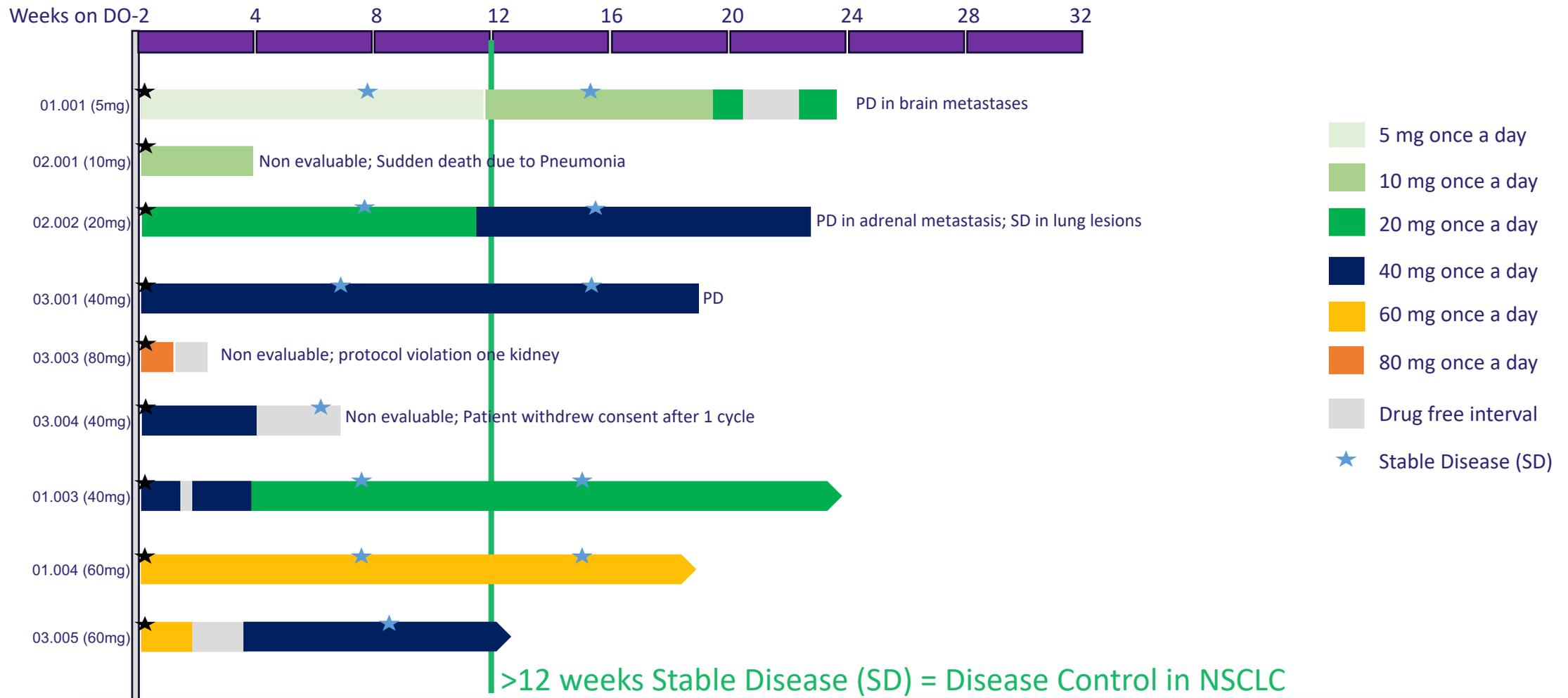
# Hypothesis validation: Significantly improve active (parent) drug exposures in the clinic

Clinical exposures of deuterated version (DO-2) are ~2.5 to 5-fold higher than with the non-deuterated version (DO-0). DO-2 maintains efficacious levels (ToT) for longer, achieving target inhibition levels.



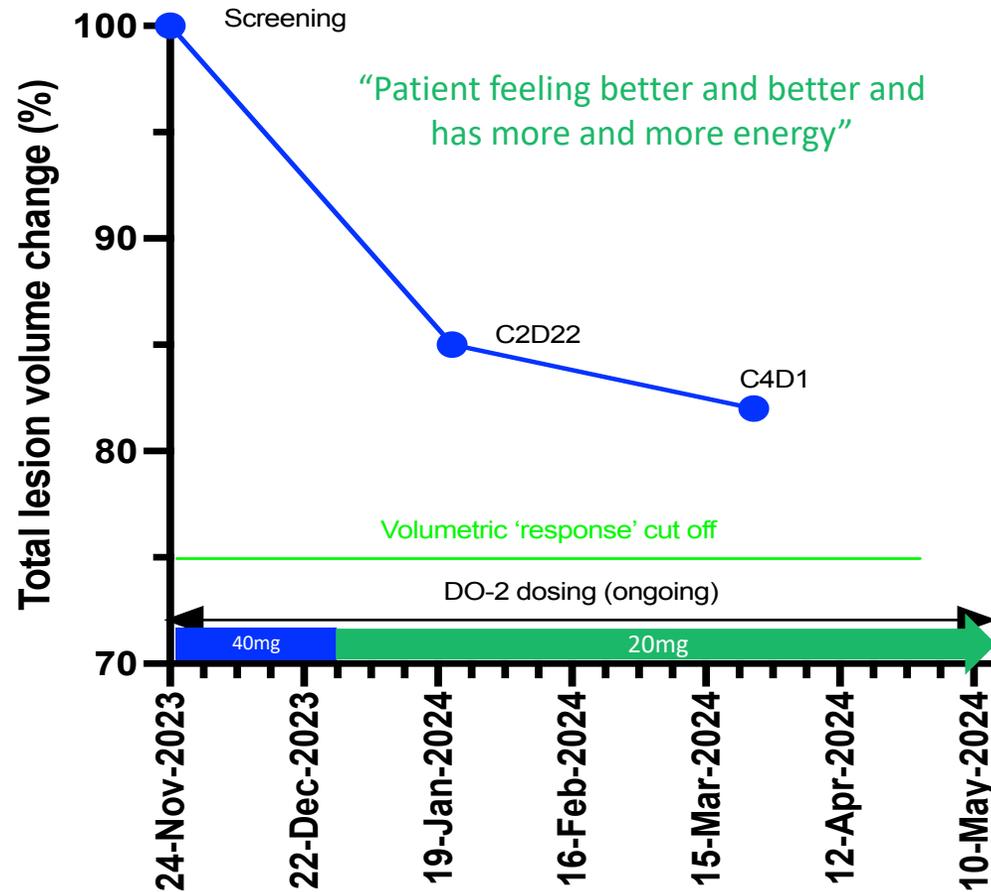
# Prolonged stable disease in majority of patients

## 100% Disease control rate (6/6 evaluable patients)

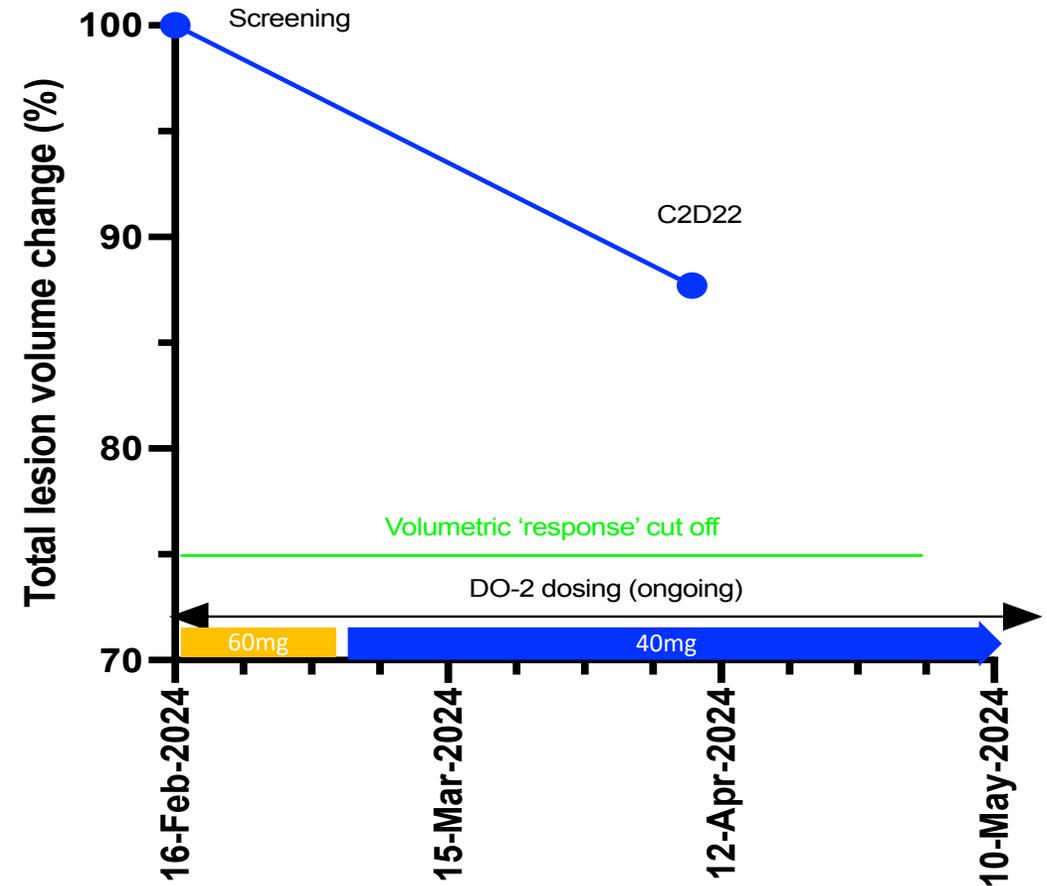


# Significant clinical benefit reported for several patients Correlating with volume reductions seen with 3D analyses

### Patient 01.003 (40 then 20mg)



### Patient 03.005 (60 then 40mg)





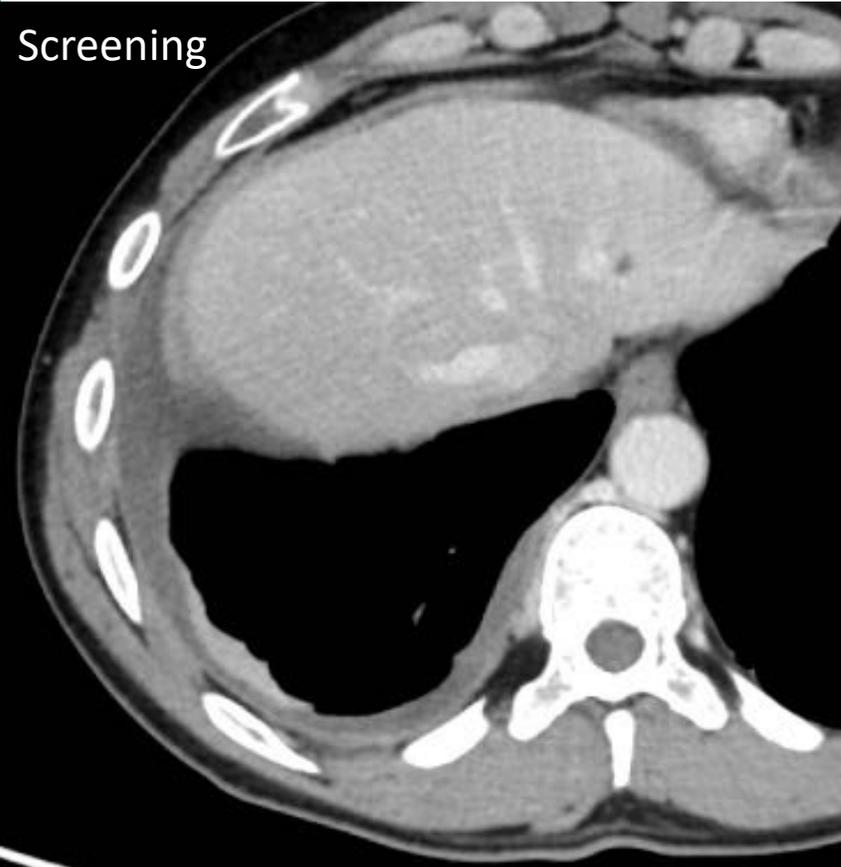
# Complete resolution of pleural effusion

Patient 01-004

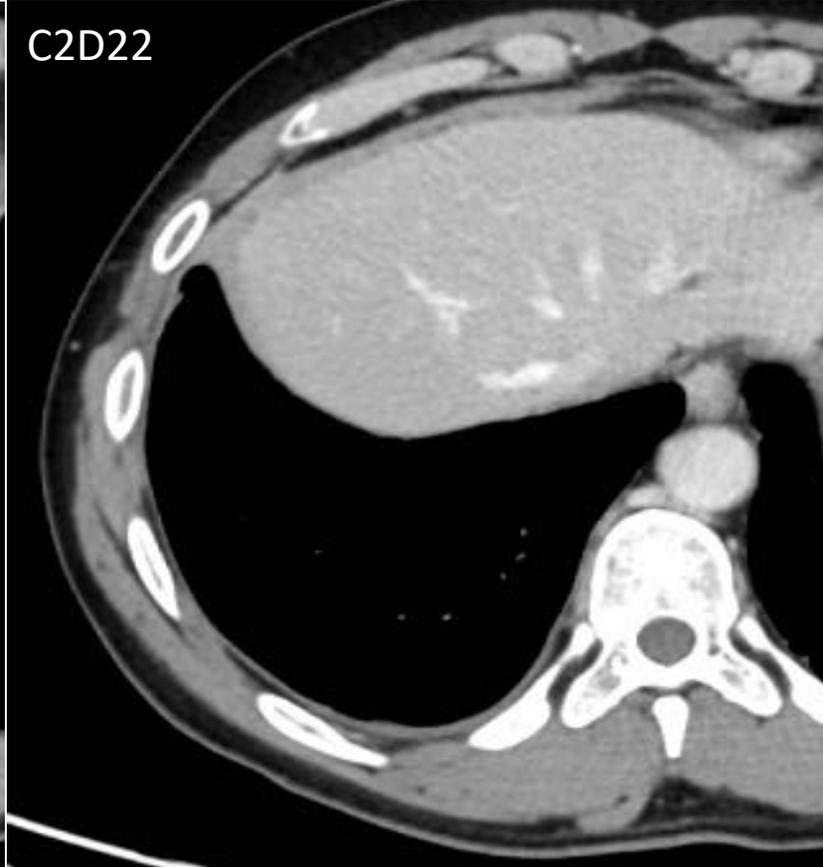
“Reduction in chest pain reported at day 8; complete absence of chest pain; after 2 cycles; pleural fluid reported to be absent after 3 cycles.



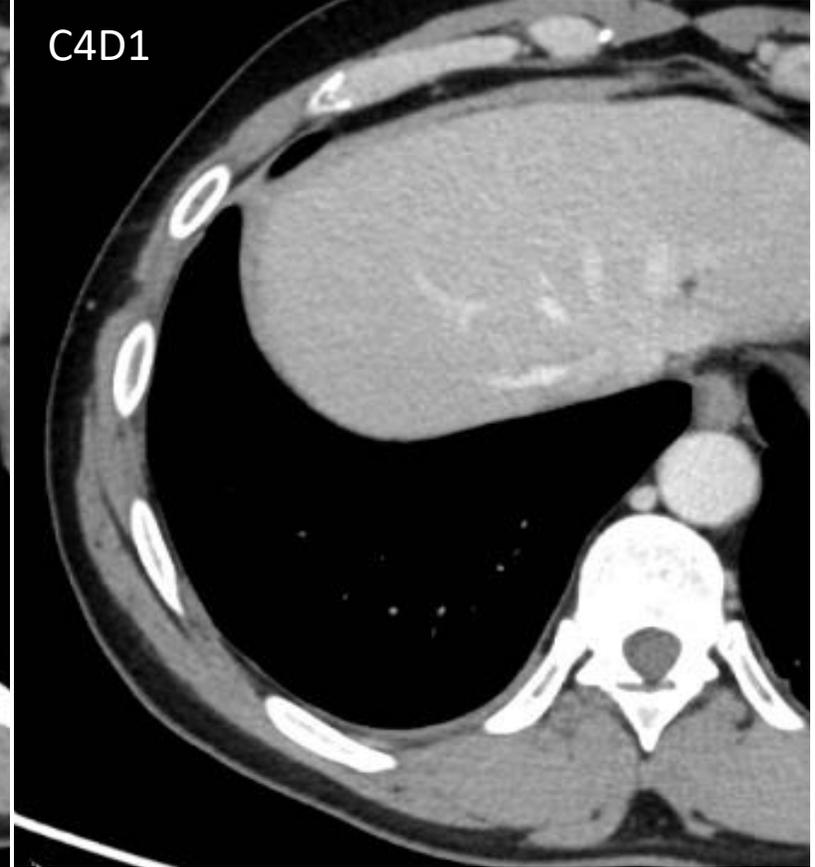
Screening



C2D22



C4D1



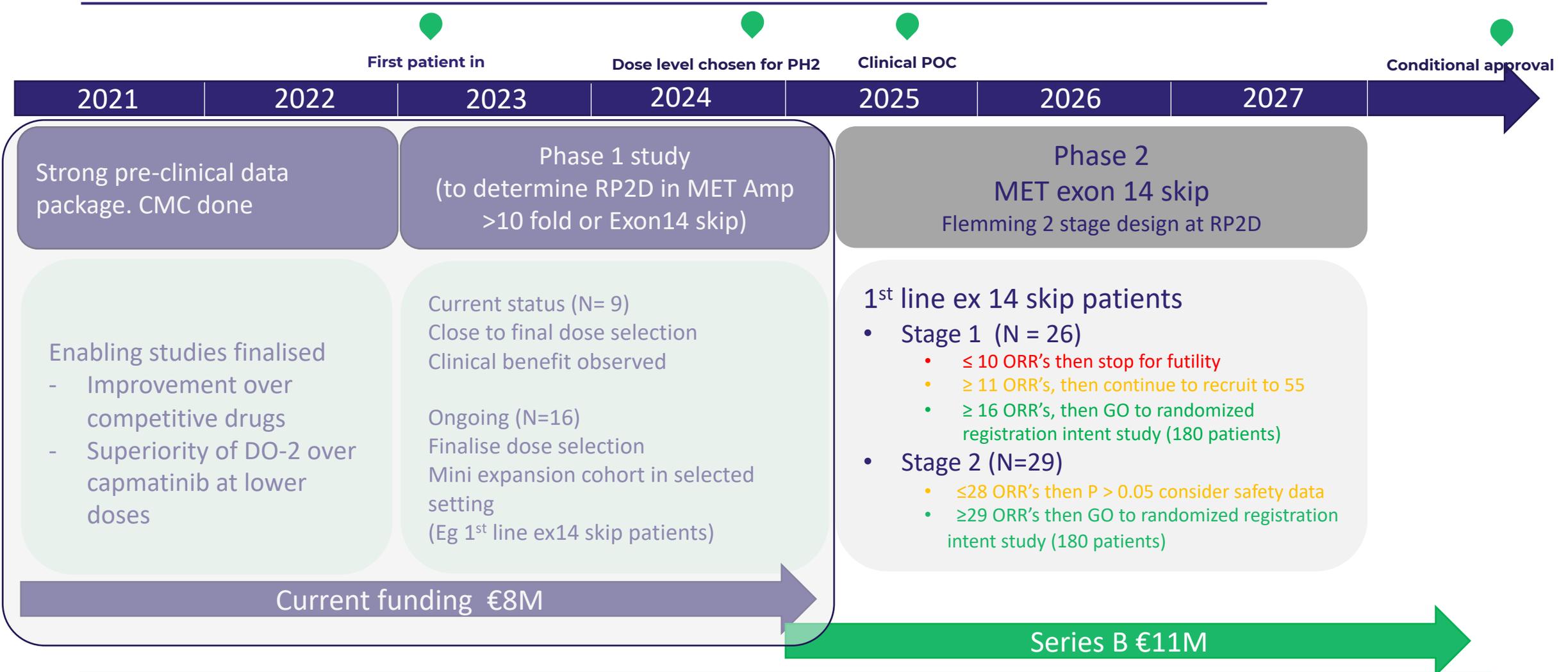
“The extent of the right pleural effusion at **C2D22** is **completely resorbed**. There are only some residual pleural and intrafissural thickening/atelectasis, which are **virtually resolved at C4D1**”.

# Large market potential

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- Current MET inhibitors only approved in the METex14 skip mutation positive setting (~3% of NSCLC)
  - Representing a potential market of >\$1B (Novartis projected peak sales of \$1.5B)
- Much larger currently 'unmet medical needs' await a well tolerated MET inhibitor
  - Monotherapy in MET mutant settings
    - MET amplified NSCLC, gastric cancer, ovarian cancer
    - MET amplification/fusions in glioblastomas
    - MET amplification in gastroesophageal cancers
  - Combination settings
    - Intrinsic/acquired resistance to immune checkpoint inhibitors in a range of cancers
    - Acquired resistance to EGFR, kras, Alk, Ros... inhibitors in NSCLC
    - Acquired resistance to EGFR inhibitors in colon and head & neck cancers...

# Development plan (overview)



# Take home messages

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- Improvement over competitive drugs already demonstrated in pre-clinical studies with convincing data.
  - Superiority of DO-2 over main competitors at much lower doses.
  - Large therapeutic window
- Phase 1 study boding well for validation of improved safety at efficacious dose levels
  - No peripheral edema or liver enzyme elevations.
  - No other adverse events of note
  - PK/PD results promising - DO-2 exposure predicted to be fully efficacious already achieved
  - Early signs of clinical benefit observed
    - weight gain, alleviation of pain, reduction and total clearance of pleural effusion, tumor shrinkage.
- Compound and drug product manufacture optimized with long shelf life.
- Significant, rapidly growing market with sub-optimal competitive agents, yet with blockbuster potential.

Looking for €11M Series B investment to generate Phase 2 efficacy data

Thank you for your attention

Dr Timothy Perera

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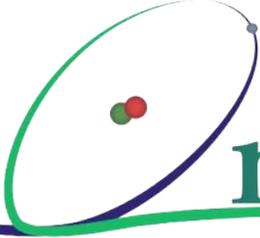
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