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Update on the mesdopetam project and plans towards Phase III

Webcast on August 22, 2023

Gunnar Olsson, CEO

Nicholas Waters, EVP and Head of R&D

Mesdopetam - a great opportunity in an area of large unmet needs

Anti-dyskinetic and anti-parkinsonian effects coupled with a good safety/tolerability profile	Dose for Phase III program defined	Excellent IP situation	Great opportunities for Life Cycle Management to expand market
• Significant differentiation vs. available treatments	• 7.5 mg b.i.d.	• Potential for exclusivity into the early 2040s	• Optimization of levodopa treatment without driving dyskinesia • Prevention of levodopa-induced dyskinesia • Parkinson disease psychosis • Tardive dyskinesia

Key opinion leader view on the potential of mesdopetam

"I think the mesdopetam data package is one of the most compelling available in the symptomatic treatment of Parkinson's. Mesdopetam has the rare ability to both improve dyskinesias and improve parkinsonism and, at the same time, appears to be well tolerated. I expect it will have both clinical utility and commercial success"

Karl Kieburtz, MD, MPH, Professor in Neurology, Former chairman of the Peripheral and Central Nervous System US FDA Advisory Committee; chairman of the Scientific Evaluation Committee for the Cooperative Studies Program, Veterans Administration, and the National Institute of Neurologic Disorders and Stroke.

What is the basis for the great potential of mesdopetam?

Clinical data package
– safety and efficacy

- The full analysis of the Phase IIb study data
- The three Phase I studies run by Ipsen
- The previously reported Phase I, Ib and IIa studies run by IRLAB

Precedent regulatory approval of treatment for PD LIDs in alignment
with mesdopetam study results

Strong IP position

Agenda for the webcast presentation

- Mesdopetam Phase IIb data
- Three mesdopetam phase I studies performed by Ipsen
- Differentiation and commercial positioning
- Regulatory precedent in PD-LIDs
- Way forward
- Q&A session

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Mesdopetam – an effective first-in-class candidate for treatment of LIDs in people living with Parkinson´s disease

Key results from the Phase IIb study of mesdopetam in PD-LIDs (IRL790C005)

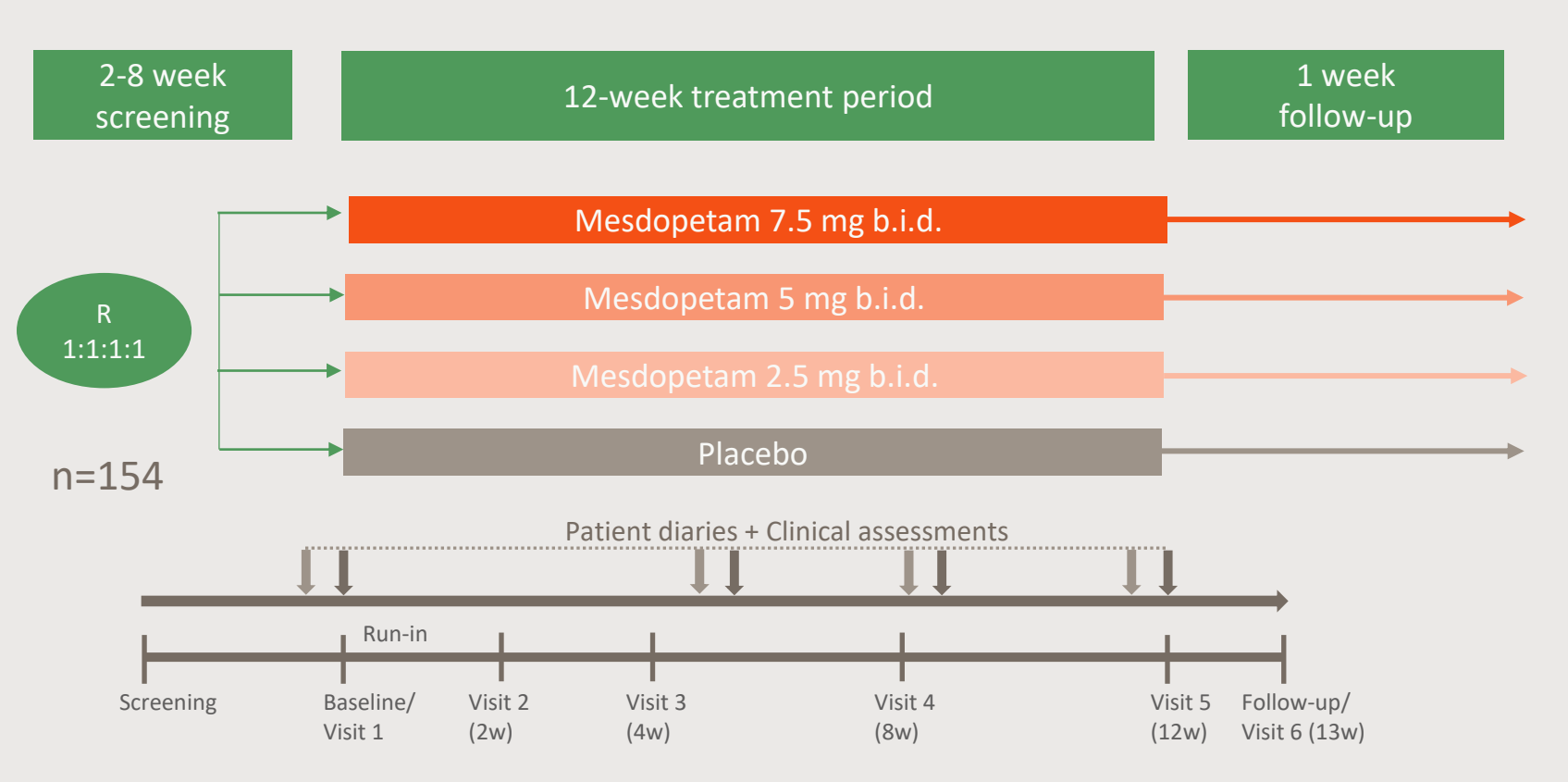
Phase IIb study is a randomized double-blinded study with three dose-arms and placebo

Key inclusion criteria:

- ≥30 and ≤79 years of age
- Minimal 2h of levodopa-induced "ON-time with troublesome dyskinesia" daily
- Functional impact of dyskinesias
- Stable regimen of anti-Parkinson medications

Dose adjustment in the study:

- One down titration of dose allowed between visit 2 and visit 3



Objectives of the Phase IIb (dose-finding) study

Phase IIb study of mesdopetam in PD-LIDs (IRL790C005)

Overall objective

- To investigate dose response in order to select dose for Phase III

Primary efficacy objective/measure

- To demonstrate the effects of adjunctive treatment with IRL790 (mesdopetam) on daily time spent in “good ON” in patients with Parkinson's disease (as assessed by Hauser diaries)

Secondary objectives & outcome measures

- To evaluate the effects of mesdopetam as compared to placebo on levodopa-induced dyskinesia assessed with:
  - Sum score of parts 1, 3 and 4 of the modified Unified Dyskinesia Rating Scale (UDysRS)
  - MDS-UPDRS part 2 (Motor aspects of Experiences of Daily Living, M-EDL) and part 4 questions 4.1 (Time spent with dyskinesias) and 4.2 (Functional impact of dyskinesias)
  - Daily hours of “OFF”-time as assessed with patient home diaries
  - Daily hours of total “ON”-time as assessed with patient home diaries
  - Daily hours of “ON”-time with troublesome dyskinesia as assessed with patient home diaries
  - Severity of levodopa induced on-phase dyskinesia and the severity of overall PD symptoms assessed with the Clinician's Global Impression of Severity (CGI-S)
- To evaluate the safety of mesdopetam given twice daily during 84 consecutive days as assessed by safety observations

Phase IIb study analysis sets and statistical methods

Full Analysis Set (FAS)

- The Full Analysis Set (FAS) consisted of all randomized and treated patients who received one or more doses and who provided post-baseline data independent of the actual dose taken during the study.

Protocol-compliant adjusted dose set (PS)

- The protocol-compliant adjusted dose set (PS) consisted of patients who were compliant to the study protocol including documented compliance to the dosing regimen in the study, with adjustment to the actual dose received.

Statistics

- Data was analyzed based on least squares mean (LS mean) differences vs. placebo using a mixed models for repeated measures (MMRM)
- for the Full Analysis Set (FAS) based on randomized dose, and;
- In the protocol compliant subjects with adjustment to actual dose received (PS). To adjust for variability in sleep time, Hauser diary data were also scaled to 16 hours of awake time in the PS.

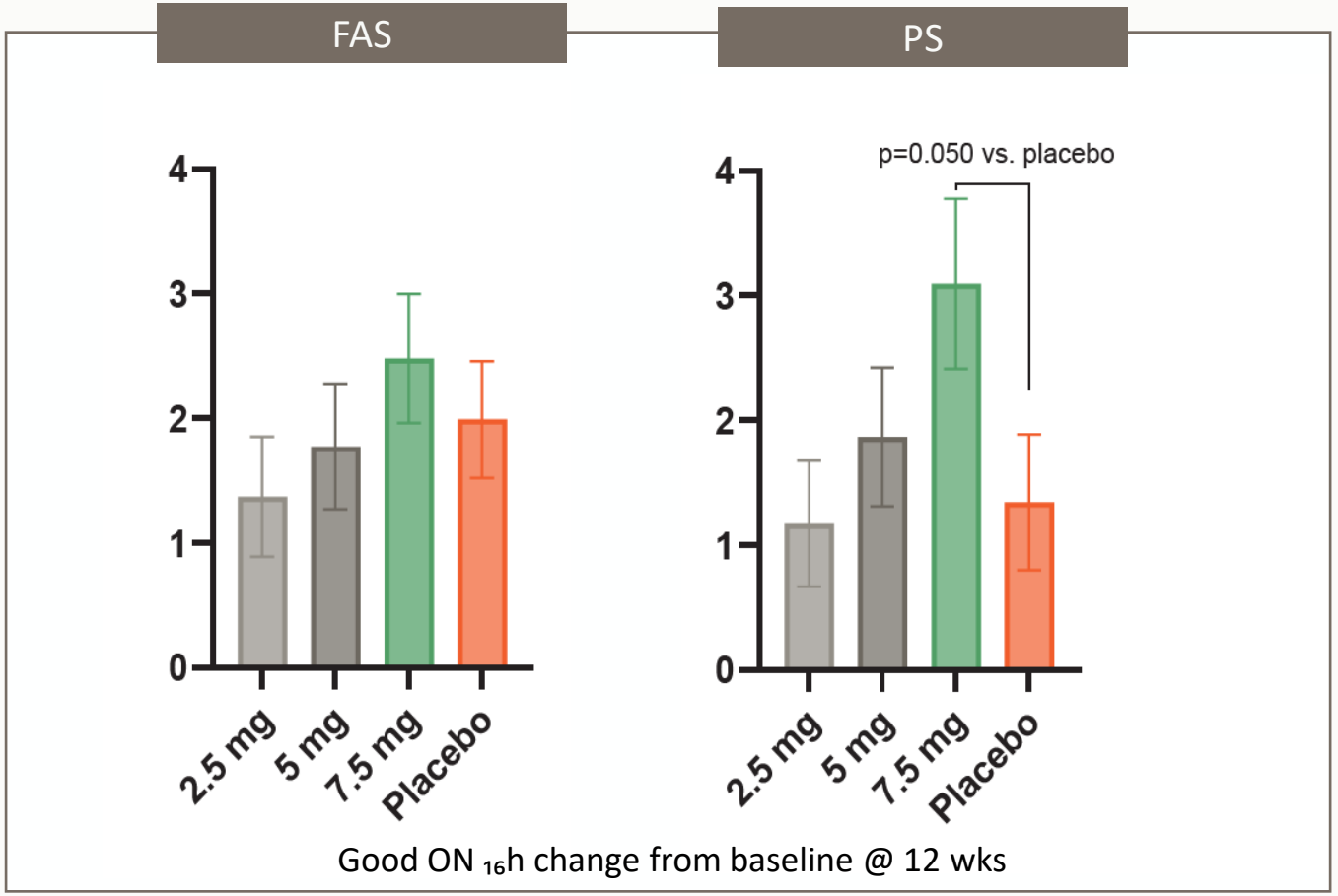
Dose-dependent improvement in “good ON”-time by mesdopetam

Full Analysis Set (FAS)

- Dose-response pattern in mesdopetam groups
- Apparently large plc response

Protocol-compliant adjusted dose set (PS)

- Dose-dependent improvement in “good ON” scaled to 16 h awake time
- Clinically meaningful improvement 1.75 hours vs placebo at 7.5 mg b.i.d.



Significant anti-dyskinetic effect by mesdopetam

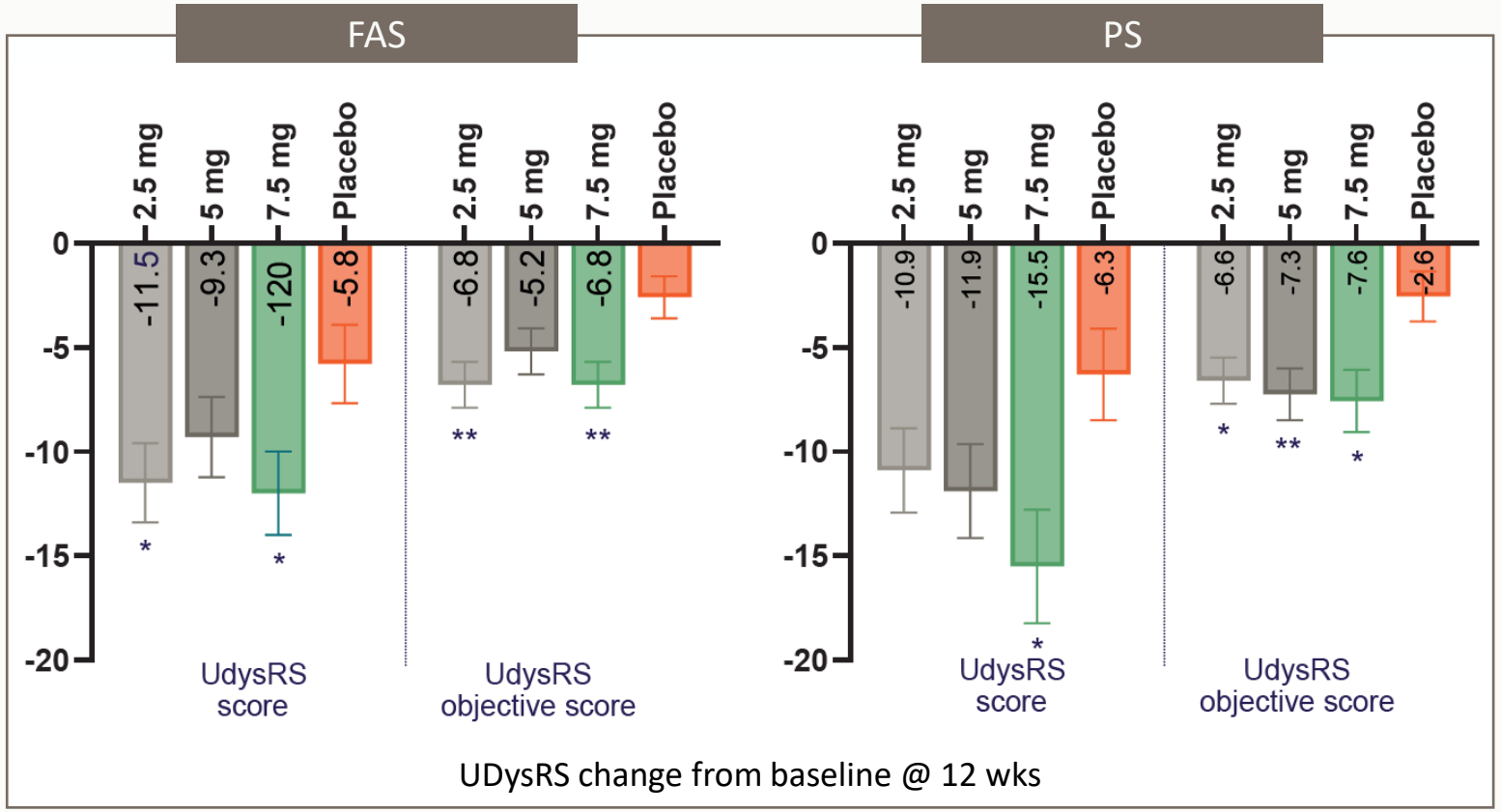
UDysRS (parts 1+3+4) and objective score (3+4)

Full Analysis Set (FAS)

- Anti-dyskinetic effects across all doses on the UDysRS (1+3+4)
- Physicians rating (part 3+4) also shows similar pattern

Protocol-compliant adjusted dose set (PS)

- Dose-dependent improvement in UDysRS
- Large and clinically meaningful effect at 7.5 mg b.i.d.



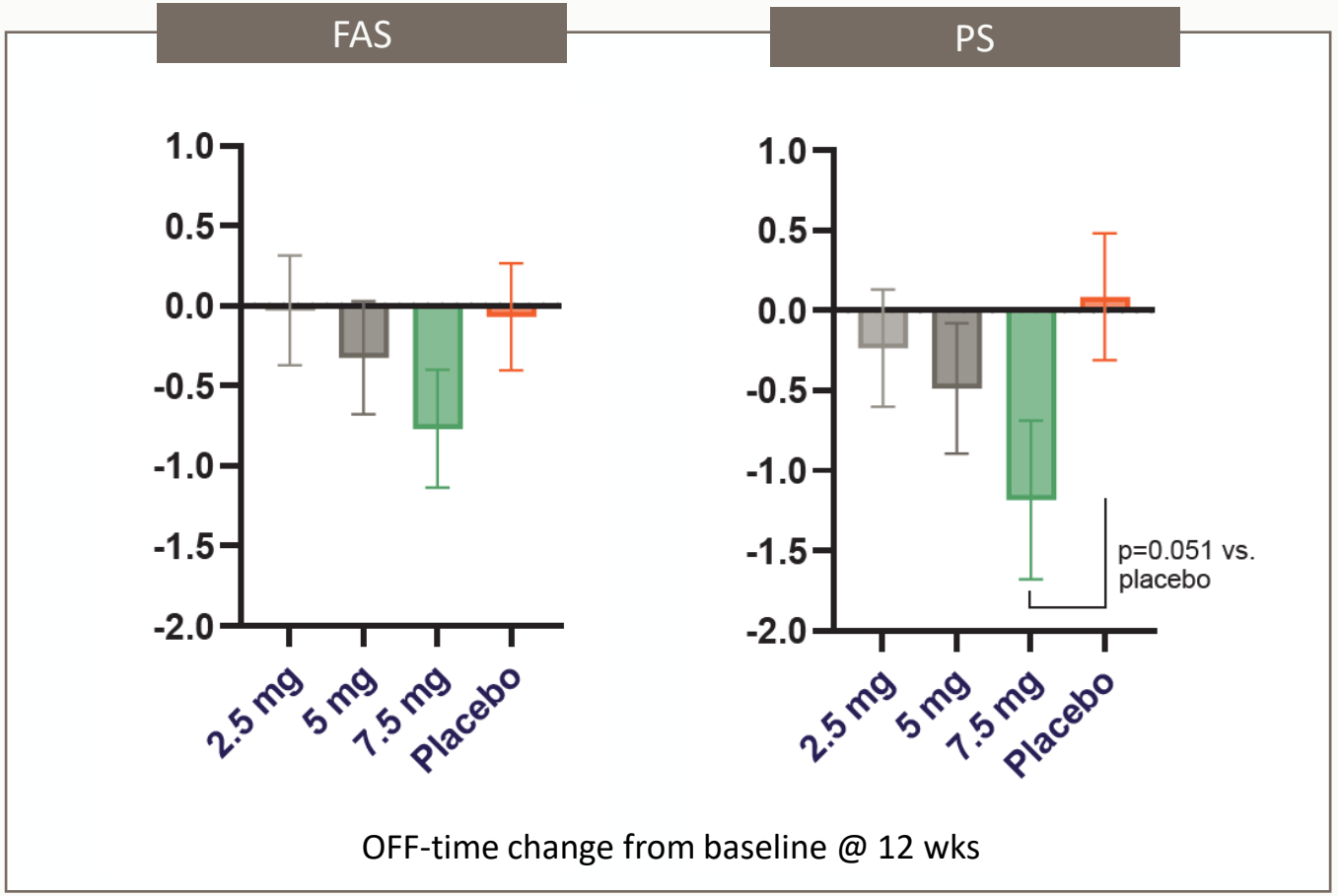
Dose-dependent reduction of OFF-time – anti-parkinsonian effect by mesdopetam

Full Analysis Set (FAS)

- Mesdopetam treatment showed a dose-dependent pattern reducing OFF-time

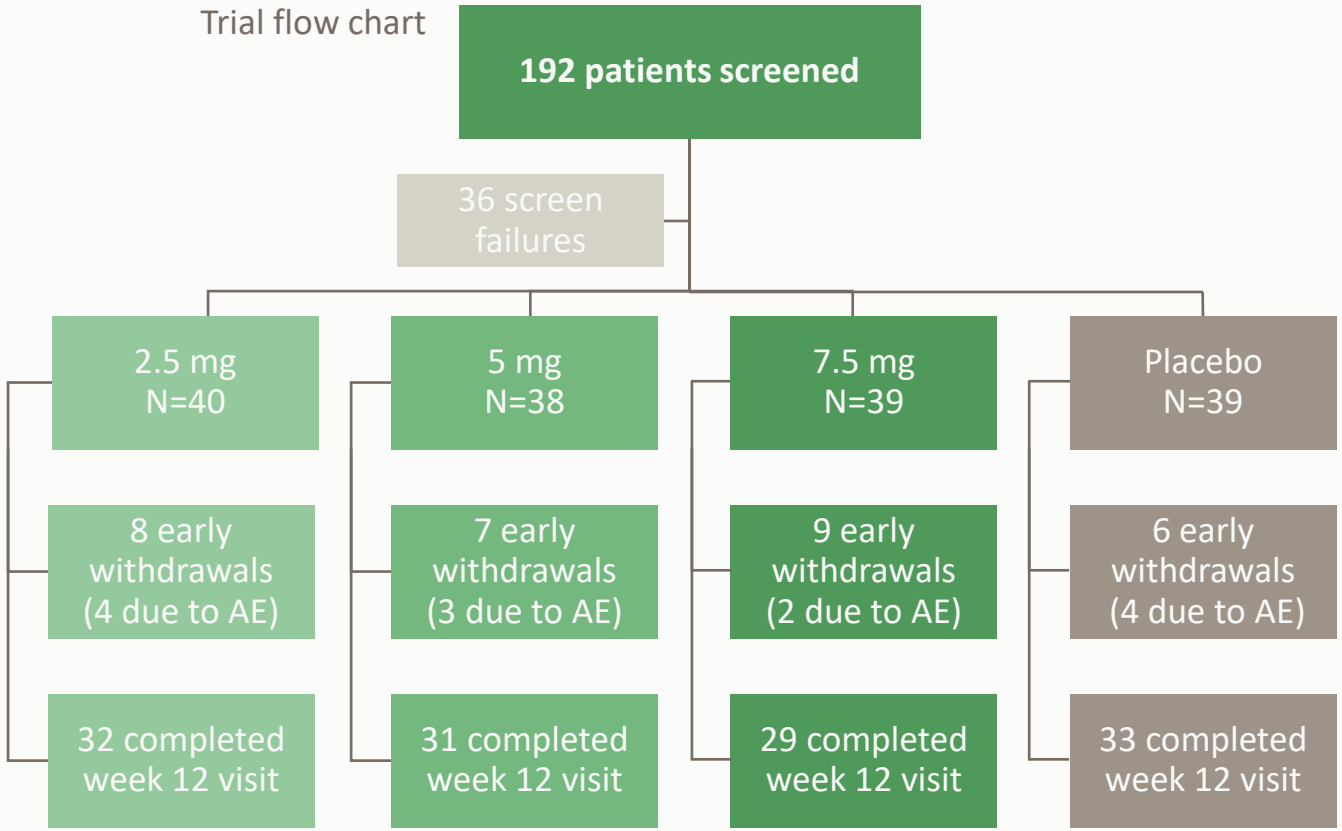
Protocol-compliant adjusted dose set (PS)

- A dose-dependent clinically meaningful reduction in OFF-time reaching 1.27 hours vs. placebo at 7.5 mg b.i.d.



Excellent tolerability of mesdopetam – no difference in withdrawal rate compared to placebo

Withdrawal rate same as placebo for all dose levels of mesdopetam



Excellent tolerability of mesdopetam – adverse event frequency on par with placebo

Treatment-related adverse events (TAEs) with >5% incidence

Preferred term	2.5 mg	5 mg	7.5 mg	All mesdope-tam arms	Placebo
No. patients	*N=40*	*N=38*	*N=38*	*N=116*	*N=39*
Parkinsonism	1 (2.5%)	3 (7.9%)	1 (2.6%)	5 (4.3%)	4 (10.3%)
Dyskinesia	4 (10%)	1 (2.6%)	1 (2.6%)	6 (5.2%)	3 (7.7%)
Fall	2 (5%)	2 (5.3%)	2 (5.3%)	6 (5.2%)	2 (5.1%)
Mobility decreased	2 (5%)	4 (10.5%)	2 (5.3%)	8 (6.9%)	0

- The incidence of TAEs parkinsonism and dyskinesia is significantly reduced in the mesdopetam 7.5 mg b.i.d group compared with the placebo group.

Note: all dosing was twice daily (b.i.d)

Conclusions the Phase IIb study

- Consistent dose-response and clinically meaningful anti-dyskinetic efficacy
  - Improvement in UDysRS
  - Improvement in “good ON”-time
- Consistent dose-response pattern in reduction in OFF-time, i.e., anti-parkinsonian efficacy
- No untoward effects on normal motor functions or PD symptoms, i.e., no increase of Parkinsonism
- Safety and tolerability profile on par with placebo at all doses
- Predictable plasma exposure – linear and dose-dependent

- Dose selection for Phase III achieved (7.5 mg b.i.d.)

Phase I studies run by Ipsen were successfully completed and showed favorable results

1. Pharmacokinetics (PK) in Asians and Non-Asians
    - PK profile for mesdopetam similar in the different populations
2. Drug-Drug Interaction PK study
    - Low risk of drug-drug interactions
    - Suggests neither additional clinical drug-drug interaction studies nor restrictions on future patient enrolment would be required in future clinical studies.
3. Mass balance study to evaluate elimination of mesdopetam in humans
    - No signs of risk for drug accumulation of in the body

Implications of the results

- Predictable PK with low degree of variability
- Anticipated simple and uniform dosing, i.e., low risk of dosing errors

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Differentiation and commercial positioning

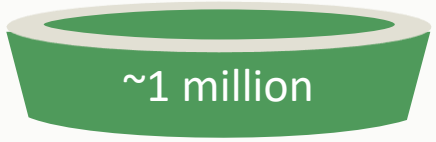
PD-LIDs accessible market 2020

(USA, EU5, Japan and China)

Number of diagnosed patients
(US, EU5, Japan, China)

Number of PD-LIDs patients

Number treated patients



PD-LIDs prevalence is **25-40% of the Parkinson's population**

High proportion of patients receive treatment

Differentiation in frequency of adverse drug reactions: mesdopetam *vs.* amantadine ER

Adverse drug reaction (ADR) frequency (%)	IRL790C005 Phase IIb study		Amantadine ER, Phase III pooled analysis	
	Mesdopetam n=116	Placebo n=39	ADS-5102 n=100	Placebo n=98
Any ADR (%)	57	46	80	31
Any ADR leading to study drug discontinuation (%)	9	10	20	8
ADR frequency (%) in the IRL790C005 Phase IIb study on most common ADRs for amantadine ER				
Hallucinations (visual/auditory)	0.9	0	21	3
Dizziness	0.9	3	16	1
Dry mouth	-	-	16	1
Peripheral edema	-	-	16	1
Fall	5	5	13	7
Constipation	3	2	13	3
Orthostatic hypotension	4	3	13	1

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Elmer et al. Pooled Analyses of Phase III Studies of ADS-5102 (Amantadine) Extended-Release Capsules for Dyskinesia in Parkinson's Disease. CNS Drugs. 2018 Apr;32(4):387-398. doi: 10.1007/s40263-018-0498-4.

Mesdopetam has potential to launch with clinically relevant differentiation to shift the market

	Pharmaco-kinetic predictability/ low variability	Simple dosing titration	Ease of treatment Withdrawal	Restriction with Renal impairment	Broad group of PD-LIDs patients	UDysRS anti-dyskinetic effect	"Good ON"-time >1 hour	Reduced OFF- time	Safety and tolerability profile	No AE increase with higher dosage	Potential to optimize levodopa
amantadine	✗	✗	✗	✗	✗	✓	✓	✓	✗	✗	✗
mesdopetam	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

The ideal drug profile for PD-LIDs fulfilled by mesdopetam

Anti-dyskinetic

+

Good safety and tolerability profile

+

No increase of Parkinsonism

Mesdopetam - a differentiated treatment with ideal profile for the PD-LIDs market

Positioning of mesdopetam

- First-line treatment of levodopa-induced dyskinesia
- Anti-dyskinetic efficacy
- Anti-parkinsonian efficacy
- Excellent safety/tolerability profile
- Simple to dosing in a broad PD-LIDs patient population
  - Predictable PK
  - No known Drug-Drug Interaction
  - No contraindication

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Regulatory considerations for Phase III

Endpoint structure in the amantadine ER file approved by the FDA

- Key efficacy endpoints important to the FDA

Primary endpoint*
UDysRS part 1, 3 and 4
Key secondary endpoint
UDysRS part 1b and 4
Safety endpoints
OFF-time
MDS-UPDRS part 2
“Bad ON”-time
Optional Secondary endpoint
“Good ON”-time

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“Bad ON”-time refers to ON time with troublesome dyskinesia. “Good-ON”-time refers to ON time without troublesome dyskinesia.
* FDA approval for amantadine ER was based on the sum score in UDysRS parts (1,2,3,4), since then, FDA advices sponsors to exclude section 2 and use the sum of section 1, 3, 4

Mesdopetam's Phase IIb study results align with the endpoint structure in the amantadine ER file

- Phase IIb study results on 7.5 mg b.i.d. dose - relation to FDA precedent

✓ = aligns with the FDA amantadine approval

	Randomized dose, FAS points	Nominal P-value
Primary endpoint*		
UDysRS part 1, 3 and 4	-6.2 ✓	0.026
Key secondary endpoint		
UDysRS part 1b and 4	-3.5	0.062
Safety endpoints		
OFF-time	-0.7 h ✓	0.16
MDS-UPDRS part 2	0 ✓	0.98
"Bad ON"-time	-0.14 ✓	0.89
Optional Secondary endpoint		
"Good ON"-time	0.49 h	n.s

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Mesdopetam's Phase IIb study results align with the endpoint structure in the amantadine ER file

- Phase IIb study results on 7.5 mg b.i.d. dose

✓ = aligns with the FDA amantadine approval

	FAS population	Nominal P-value	PS population	Nominal P-value
Primary endpoint				
UDysRS 1, 3 and 4	-6.2 ✓	0.026	-9.2 ✓	0.011
Key Secondary endpoint				
UDysRS 1b and 4	-3.5	0.062	-5.5 ✓	0.019
Safety endpoints				
OFF-time	-0.7 h ✓	0.16	-1.27 h ✓	0.051
MDS-UPDRS part 2	0 ✓	0.98	-0.5 ✓	0.63
"Bad ON"-time	-0.14 ✓	0.89	-0.93 ✓	0.3
Optional Secondary endpoint				
"Good ON"-time	0.49 h	n.s	1.75 h ✓	0.049

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Key opinion leader view on potential of mesdopetam

"This is a really important drug"

Prof. Warren Olanow M.D., FRCPC, Professor and Chairman Emeritus of the Department of Neurology, and professor in the Department of Neuroscience at the Mount Sinai School of Medicine in New York City. Visiting professor in the Department of Neurology at the University of California, San Francisco.

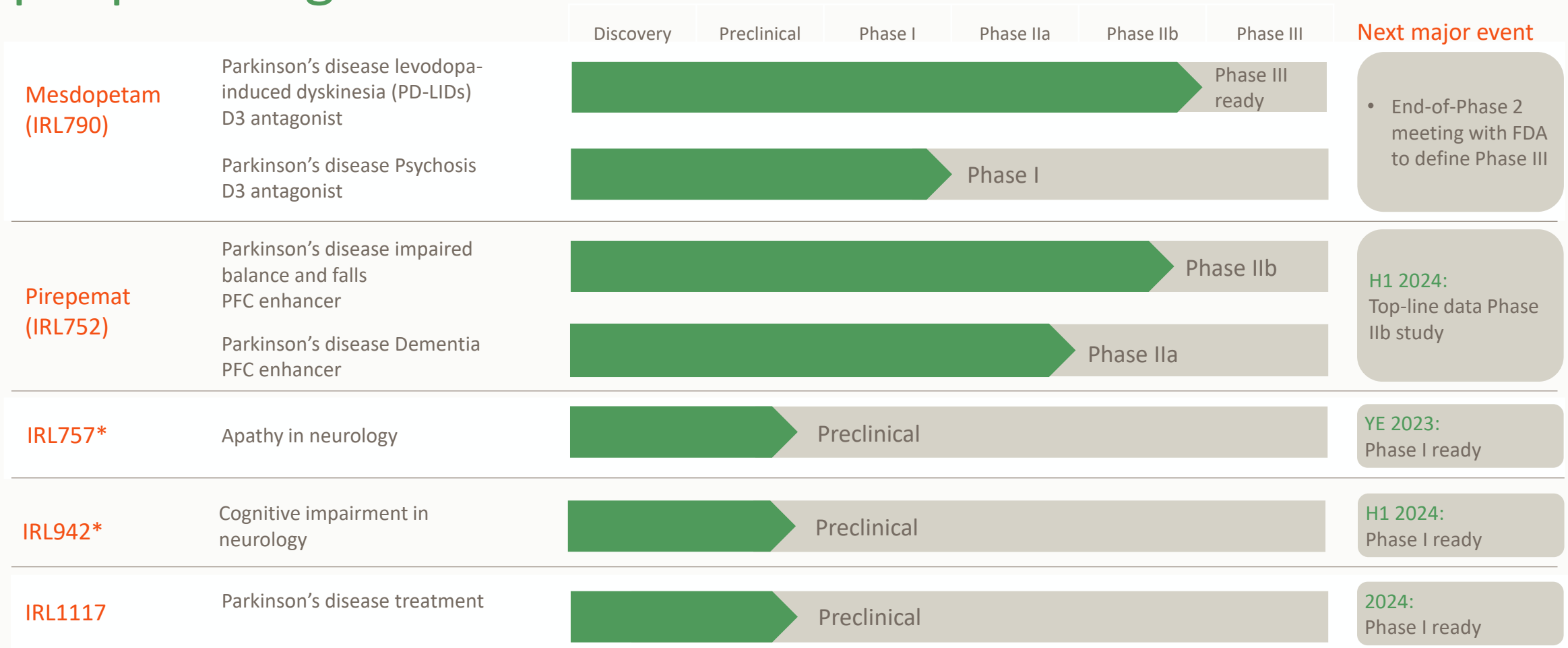
Way forward

- Rapid transfer of the full mesdopetam project to IRLAB from Ipsen
- Prepare for an end-of-Phase 2 meeting with the FDA to define Phase III program
    - Prepare briefing book in collaboration with regulatory and clinical advisors, as well as support from Ipsen
- Capitalize on options for financing of Phase III

Comprehensive data presentation at MDS Congress, Aug 27-31, 2023

Abstract Title: Results from IRL790C005 – A Randomized, Double-Blind, Placebo-Controlled Phase IIb Study Evaluating the Efficacy of Mesdopetam on Daily On-Time without Troublesome Dyskinesia in Patients with Parkinson's Disease
Presenter: Joakim Tedroff, CMO IRLAB
Presentation Date: Monday, August 28
Presentation Time: 13:00 – 15:00

Development portfolio transforming treatment of people living with Parkinson's



* Under evaluation under exclusivity by MSRD, an Otsuka company.

IRLAB – a world-leading portfolio to improve Parkinson's treatments

Pioneering biology & ISP

Deep profound understanding of Parkinson's. Team from Nobel laurate Prof. Arvid Carlsson's research group

Focused strategy

Discover and develop treatments for PD patients throughout their disease journey

Validated proof-of-concept

From discovery through to Phase III ready project

Broad & Solid portfolio

Five unique drug candidates each with blockbuster potential generated by our disruptive ISP platform

Organization positioned for success

Experienced international organization. Listed Nasdaq Stockholm.

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Q&A session