IRLAB

Transforming life for people living with Parkinson's

Q3 business update – Nov 9, 2022

Richard Godfrey, CEO
Nicholas Waters, EVP and Head of R&D
Viktor Siewertz, CFO

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Today's agenda

1

- **Agenda for Quarterly presentation**
- **News in the quarter**
- **IRLAB overview**

2

R&D update

- Mesdopetam
- Pirepemat
- Preclinical programs

3

Financials

- Financial highlights
- Analyst coverage

4

- Pipeline
- Newsflow
- Outlook

5

Q&A session

Operational highlights in the third quarter

- **Solid progress** in clinical, preclinical and research projects, according to plan
- Phase IIb study of mesdopetam in patients with Parkinson's levodopa-induced dyskinesias (PD-LIDs)
  - July: **Study** expanded to **include 154 patients**.
  - September: Patient **recruitment** to the study was **completed**
  - Around year-end: **Top-line data** is anticipated.
- Ipsen sponsored clinical trials with mesdopetam
  - September: **Ipsen initiated three clinical pharmacokinetic studies**, expect completion by Q1 2023.
    - Provides a standard set of data typically required for late-stage clinical trials.
- **Presentations** at several investor healthcare events: Pareto Securities, ABG Sundal Collier and ProHearings. Public recordings are available on the website, irlab.se.
- **Registration of share issue** of 120,000 Class A shares
  - Relating to the acquisition of know-how related to the P003 discovery project.
  - After the registration, the total number of registered shares is 51,868,406 (51,748,406).

Financial highlights in the third quarter

- Net sales recorded in Q3 **SEK 16.5m** (SEK 195.6m)
- Total operating expenses during the quarter **SEK 40.4** (SEK 74.1m)
- The operational result for the quarter **SEK -23.9m** (SEK 121.7m)
- Cash flow from operations **SEK-27.9m** (SEK 202.8m)
- Cash and cash equivalents amounted to **SEK 291.7m** (SEK 431.2m)
- Average number of employees: **31** (22), of which in R&D: **27** (20)
- Total number of registered shares on September 30, 2022: **51,868,406** (51,748,406)

Figures in brackets = same period last year, unless otherwise stated

IRLAB – at a glance

Pioneering biology & ISP

Deep profound understanding of Parkinson's based on research by Nobel laurate Prof. Arvid Carlsson

Focused strategy

Treating PD patients throughout disease journey, has blockbuster potential as a pharma business

IPSEN
Innovation for patient care

Validated proof-of-concept

One clinical program already licensed to pharma

$363m + royalties

Four shots on goal

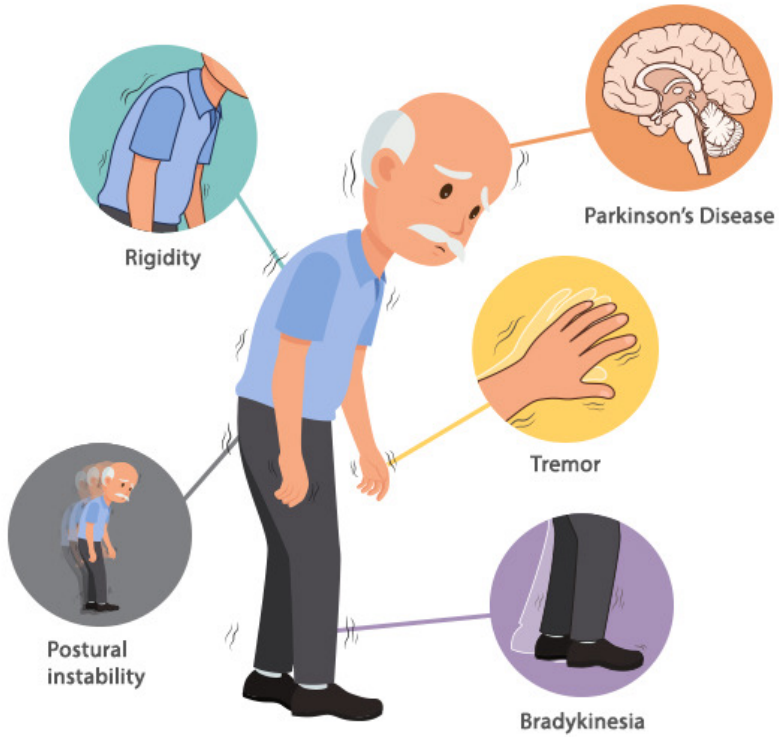
Four unique drug candidates each with blockbuster potential generated by our disruptive ISP platform

Organization positioned for success

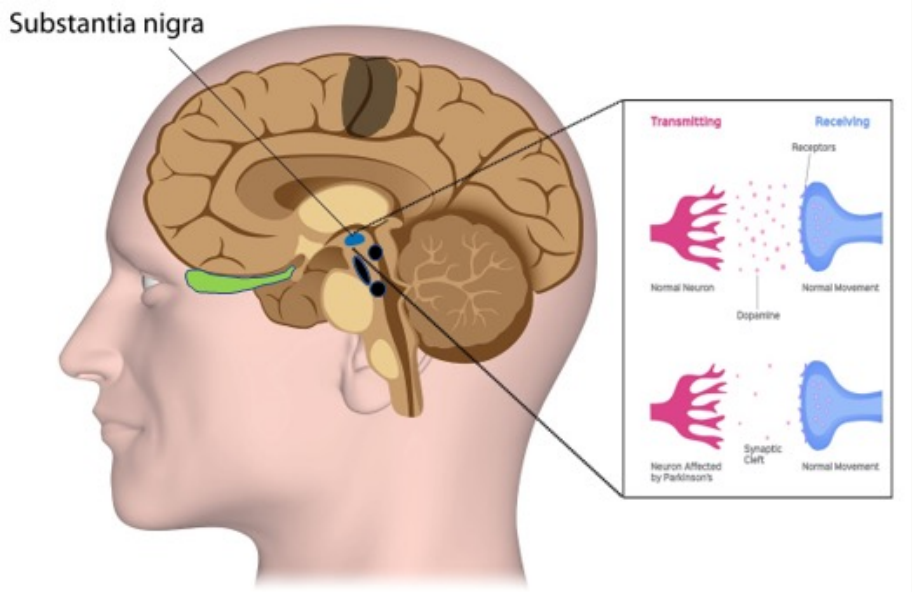
Experienced international organization, Strong Balance sheet, Listed Nasdaq Stockholm

Parkinson's disease is a chronic and progressive neurodegenerative disease, with no cure

Cardinal symptoms



Caused by loss of brain cells that produce dopamine, which has central role in how the brain regulates and controls movement[1]



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1) Parkinson's disease is characterized by the loss of cells (neurons) in many areas of the brain and elsewhere in the body. In addition to the loss of neurons at one critical site near the base of the brain (midbrain) in a structure called the 'substantia nigra,' (shown in blue) neurons are also lost in other locations, including areas of the brainstem (shown in black) as well as in the olfactory bulb (shown in green) and the cortex (shown in gray). Cells outside of the brain can also be affected, including those in the gut (not shown).

Parkinson's disease

What happens? Loss of >50% cells in the brain that produce dopamine

Why is that important? Dopamine is one of the most important signaling substances in the brain. Controlling emotions, thoughts and movements (motor functions)

Why does it happen? Age is the most important factor. Environmental and genetic factors involved.

Cardinal symptoms	How do you tell?	Current treatment
Tremor	"Shaking"	Levodopa (in combination with agonists, COMTinhibitors and MAO-B inhibitors)
Bradykinesia	Slowness of moving	Levodopa (in combination with agonists, COMTinhibitors and MAO-B inhibitors)
Rigidity	Stiffness	Levodopa (in combination with agonists, COMTinhibitors and MAO-B inhibitors)
Postural instability	Trouble with balance and falls	No available treatment

Other symptoms

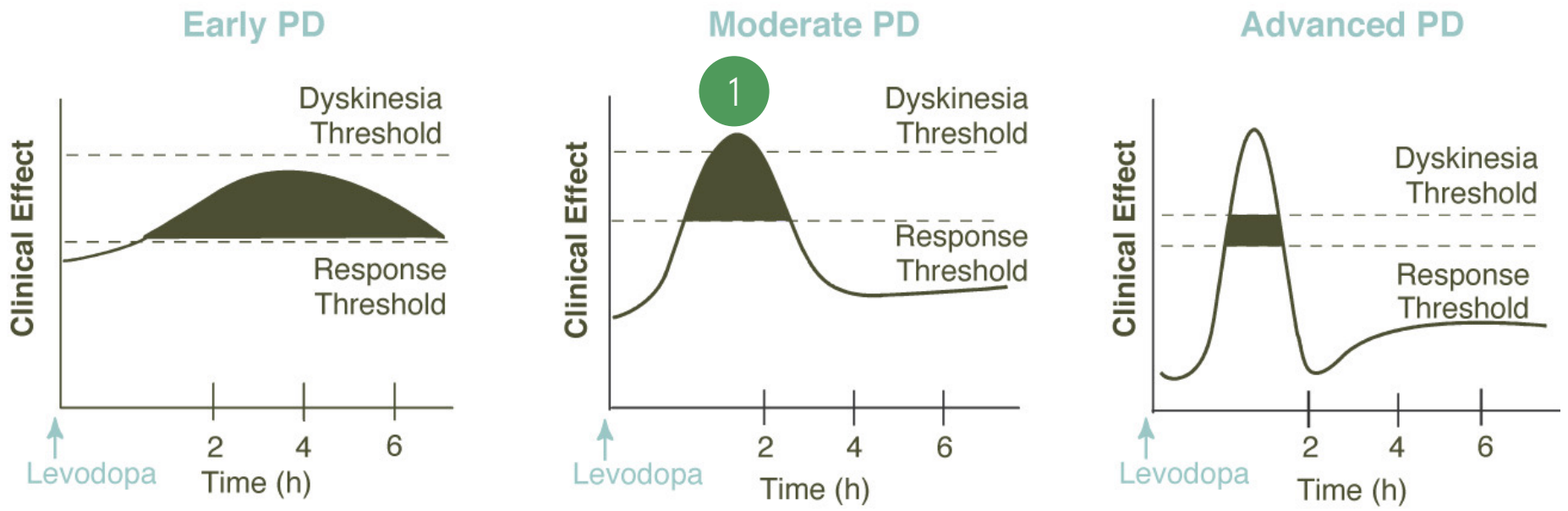
Motor: Facial masking, dystonia, drooling etc.

Non-motor: Hallucinations, apathy, dementia, problems with speech and swallowing

Parkinson's disease is chronic and progressive. It is lifelong and worsens over time.

Long-term challenges: Changes in levodopa response

A Parkinson's challenge with long-term standard of care treatment



1 30-40% of patients experience dyskinesias within 5 years on levodopa treatment[1]

1) Ahlskog JE, Mov Disord 16:448–458

IRLAB to address top priorities for management of Parkinson's

Parkinson's is one of the fastest growing disorders

The burden of society from PD in the US alone translates to $51,800 per year per patient with Parkinson[1]

Identified treatment priorities	IRLAB's solution
• Impaired balance and falls	→ **Pirepemat**
• Cognitive decline	→ **Pirepemat, IRL942, IRL757**
• Motor complications: levodopa-induced dyskinesias (LIDs)	→ **Mesdopetam**
• Non-motor symptoms, e.g. psychosis, anxiety	→ **Mesdopetam**

thebmj

Priority setting partnership to identify the top 10 research priorities for the management of Parkinson's disease

Deane KHO, et al. BMJ Open 2014;4:e006434. doi:10.1136/bmjopen-2014-006434

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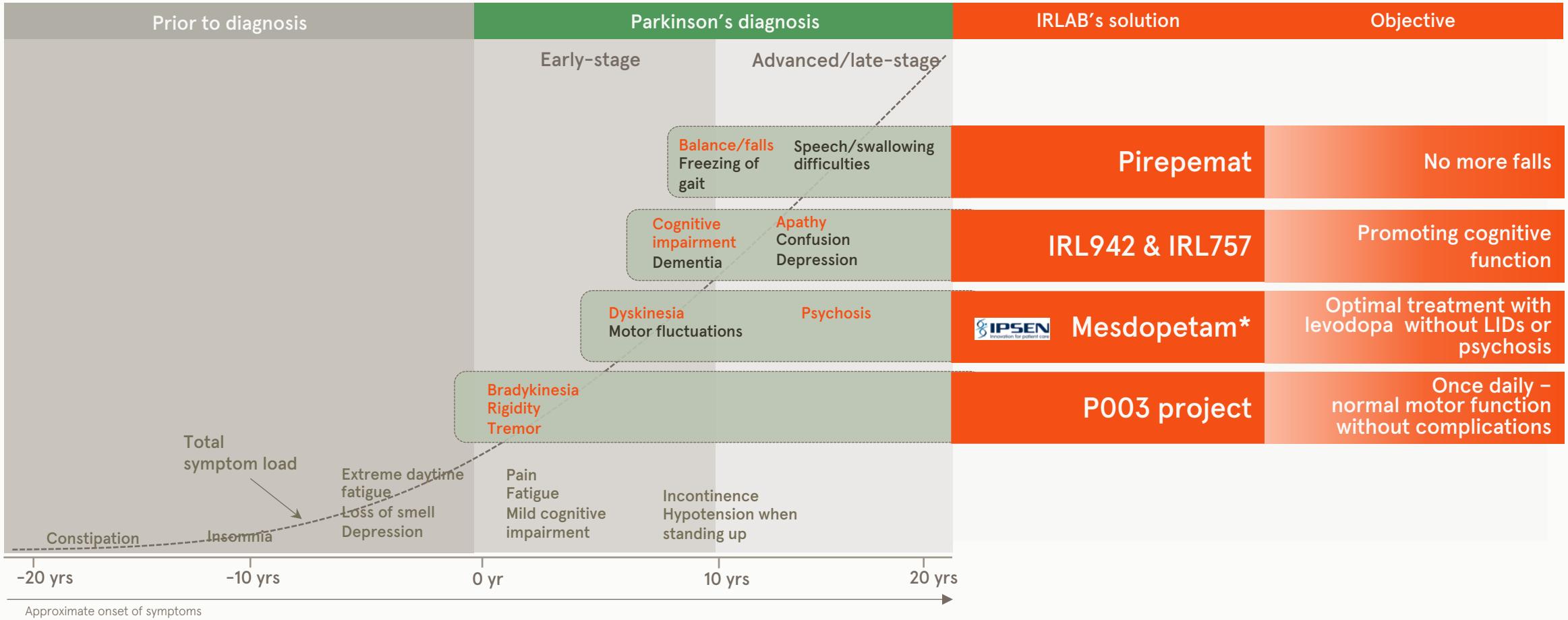
Reference: 1. Yang, G. et al. (2017). Report: Economic Burden and Future Impact of Parkinson's Disease. Lewin Group.

Living with Parkinson's: IRLAB transforms the treatment algorithm



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References: Based on Kalia, LV. and Lang, AE. Lancet 2015;386-912.

* Currently in development with partner Ipsen who holds an exclusive global license to develop and commercialize mesdopetam

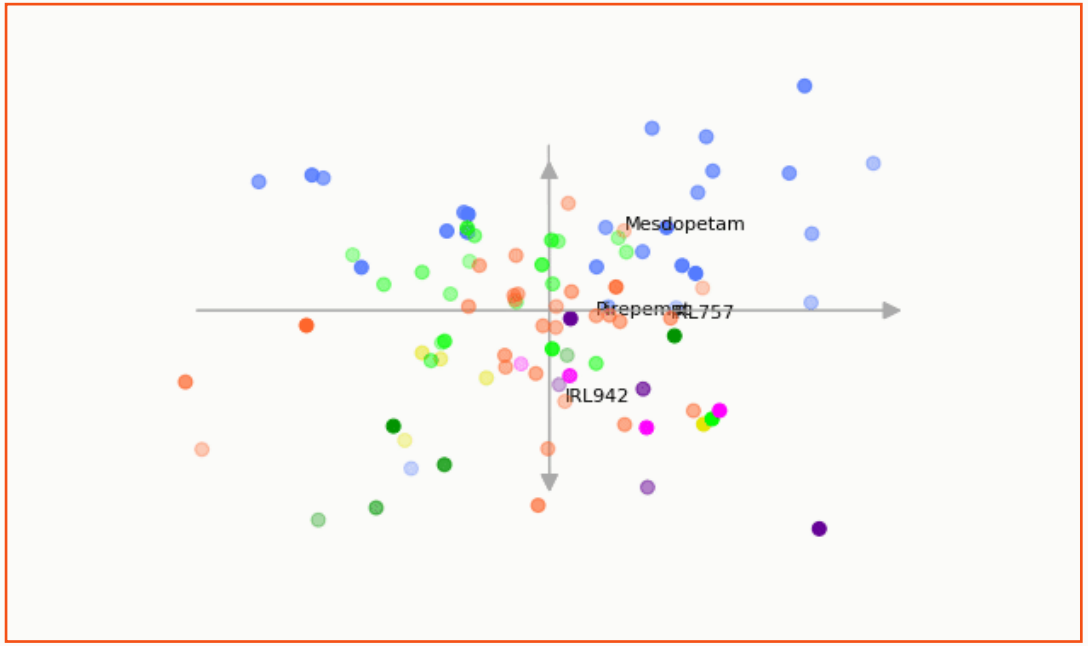
Pipeline generated with our unique proprietary drug discovery platform – ISP

Integrative Screening Process (ISP)

- Advanced systems biology approach
- Drug design informed by machine learning techniques
- ISP predicts drug candidates with greatest benefit potential and lowest toxicity risk, based on best biological fit.

Proven advantages

- Discovery of truly novel first-in-class compounds
- Strong IPR
- Improvement in probability of drug discovery success and clinical phase transitions, compared with industry standard



ISP predictions: Based on dose response data for each compound 24 neurotransmission related biomarkers, 40 gene expression biomarkers and 308 behavioral descriptors (ca 1400 drugs, other reference compounds & IRLAB compounds from ISP database)

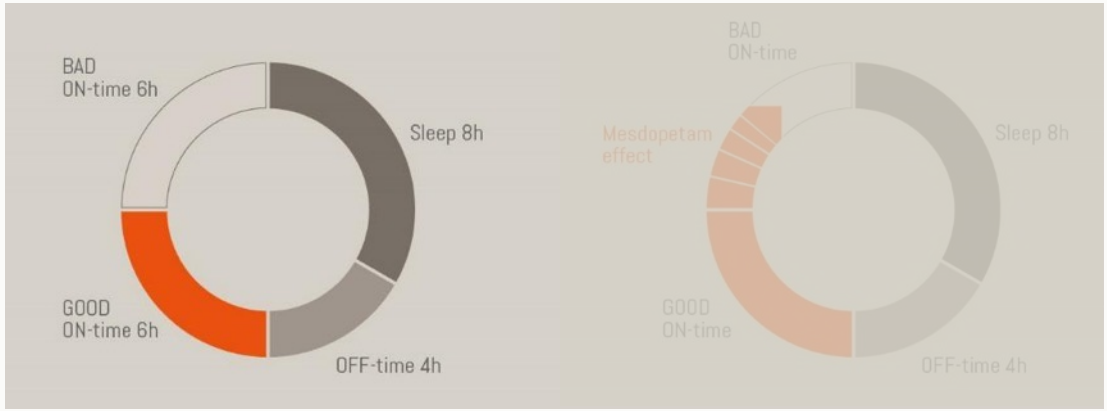
Mesdopetam (IRL790)

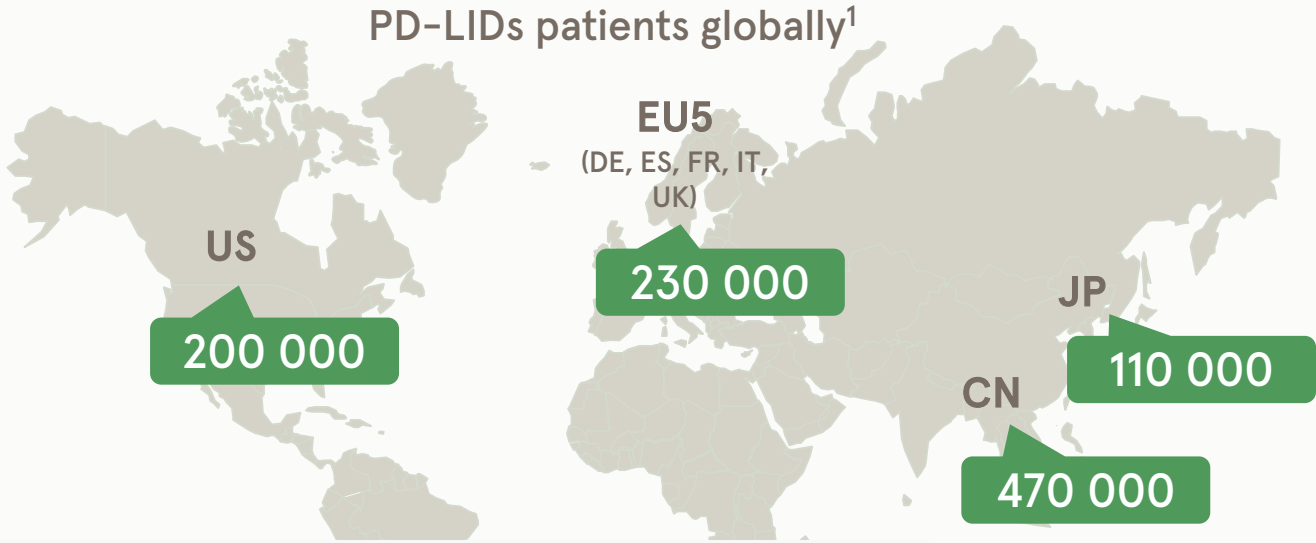
(mes‿dop‿e‿tam)

- Mesdopetam counteracts levodopa-induced dyskinesias (PD-LIDs) by **inhibiting dopamine D3 receptors**
- Potential treatment and prevention of psychosis in Parkinson's (PD-P)
- Ipsen licensed the exclusive global rights to develop and commercialize mesdopetam

Currently in development with partner Ipsen who holds an exclusive global license to develop and commercialize mesdopetam (https://www.irlab.se/press-releases/ipsen-and-irlab-enter-exclusive-worldwide-licensing-agreement-aimed-to-improve-the-lives-of-people-living-with-parkinsons-disease//)

Mesdopetam is designed to reduce levodopa-induced dyskinesia



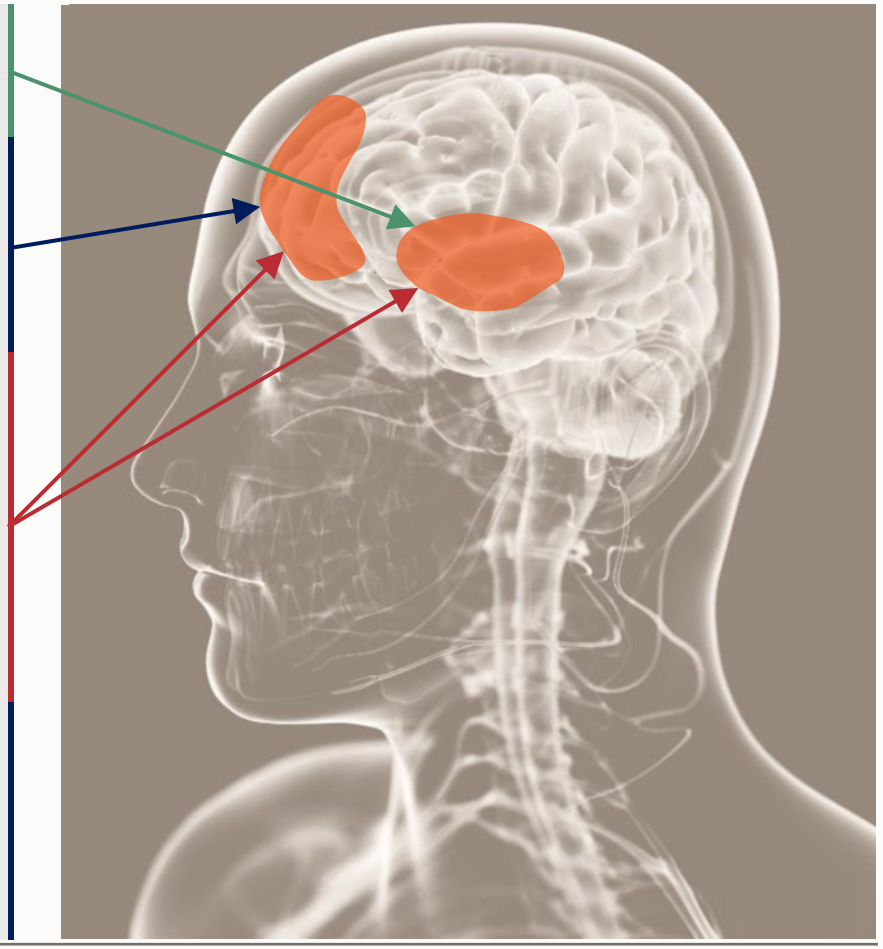


- Levodopa alleviates the stiffness and slowness of movement associated with Parkinson's and it is necessary to take levodopa several times a day to maintain mobility, patients are then in "ON"
- As the disease progresses, the ON is hampered by the occurrence of dyskinesia and involuntary movements, inducing what is called "bad ON"
- Mesdopetam aims at limiting the occurrence of "bad ON" and allows the ON to be "good ON" during more hours of the day, improving quality of life

Reference: Michael J. Fox Foundation for Parkinson's disease (n.d.) Dyskinesia; Turcano et al 2018; GBD 2018 The Lancet. 17: 939 - 953

Pharmacology and efficacy profile

1. **Activity dependent psychomotor stabilization**
   - Reduces effects of excessive DA following L-dopa at dopamine D3 receptors: reduces LIDs
2. **DA/NE/Ach (cortex)**
   - Increases synaptic availability of DA, NE, and acetylcholine in cortex
     - Cognition
     - Motor control
3. **Synaptic activation (cortico-striatal)**
   - Reverses reduced synaptic activity in prefrontal cortex and improves cortico-striatal connectivity and mechanisms involved in the control of motor and mental functions.
   - Can potentially activate neuroprotective pathways
4. **The specific pharmacological profile is attributed to:**
   - Dopamine D3 receptor antagonism
5. **In preclinical studies, mesdopetam displays**
   - Antidyskinetic effects
   - Antipsychotic effects
   - Pro-cognitive effects



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Reference: Waters ES et al., (2020) J Pharmacol Exp Ther 374:113–125, DOI: https://doi.org/10.1124/jpet.119.264226.

Mesdopetam's clinical development plan

Study	Study Population	Treatment duration	Design	# subjects	Primary objectives	Status	Result
Ph I: SAD+ MAD	Healthy male volunteers	SAD+MAD 10 days	DB placebo controlled cross-over	16 (SAD) 24 (MAD)	PK, safety, tolerability	Finalized	Tolerable, good safety, linear PK, up to 120 mg/day in the SAD part and up to 80mg/day in the MAD part
Ph Ib (patients)	PD-LIDs (dyskinesia)	4 weeks	DB placebo controlled	15 (3:1 allocation)	Tolerability, PK, safety, UDysRS, PKG (actigraph), UPDRS	Finalized	Mesdopetam can be safely administered to patients with advanced PD. Assessments for motor function showed a numeric reduction in dyskinesia across assessments
Ph IIa	PD-LIDs (dyskinesia)	4 weeks	DB placebo controlled	74	UDysRS, CGI, MDS-UPDRS, Hauser diary	Finalized	Mesdopetam is tolerable and displays good safety. AEs were predominantly central nervous system related, mild, and predominantly reported during the first 2 weeks of treatment Aggregated doses of mesdopetam 2.5, 5, 7.5 mg (b.i.d) improved "good ON"-time by ~2.8 hours (p=0.002)
Ph IIb	PD-LIDs (dyskinesia)	12 weeks	DB placebo controlled	154	Primary EP: Change in average daily hours of ON-time without troublesome dyskinesia	Fully recruited. Top-line data YE	Study power is 80% to detect 2 hours and 90% to detect approximately 3 hours increase of "good ON"-time through reduction of "bad ON"-time
Phase III*	- PD-LIDs (dyskinesia) - PD-P	*Post Phase IIb data, Ipsen is responsible for the further decisions regarding development and commercialization*					

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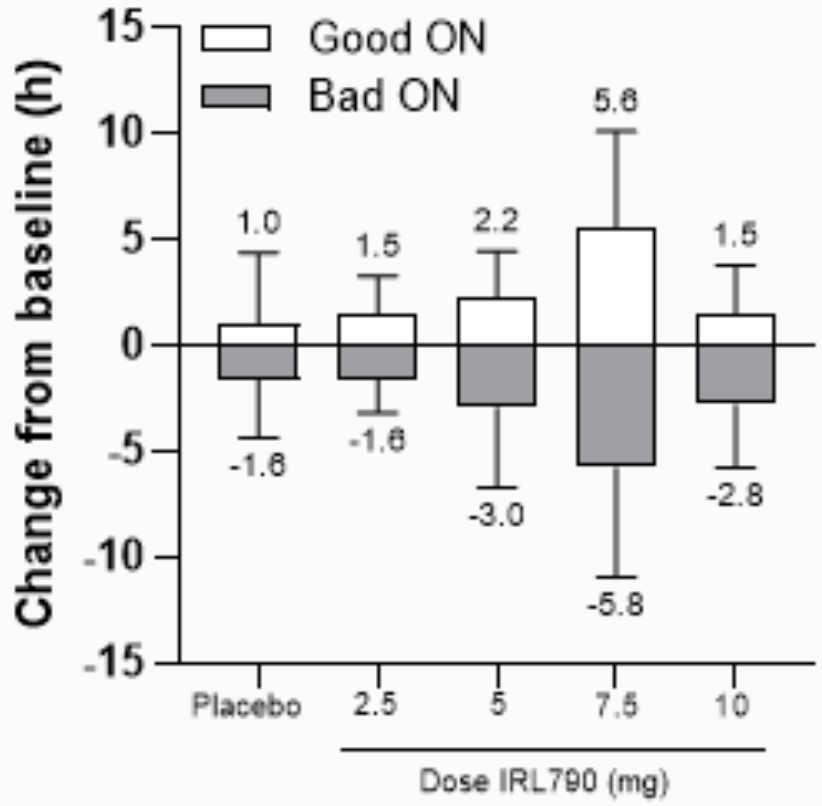
*Ipsen acquired an exclusive global license to develop and commercialize mesdopetam.

Phase IIa completed: Increases ”good ON”-time and reduces ”bad ON”-time

Mesdopetam

Improvement of “Good ON”-time through reduction of “bad ON”



Key interpretations

- Support for dose dependent efficacy
- Peak efficacy appears at 7.5 mg b.i.d
- Above 7.5 mg b.i.d no added benefit
- Aggregated doses 2.5, 5, 7.5 mg (b.i.d) improved “good ON”-time by ~2.8 hours (p=0.002)
- Dose-range defined for Phase IIb/III studies
- Adverse event (AE) profile on par with placebo at stable dosing

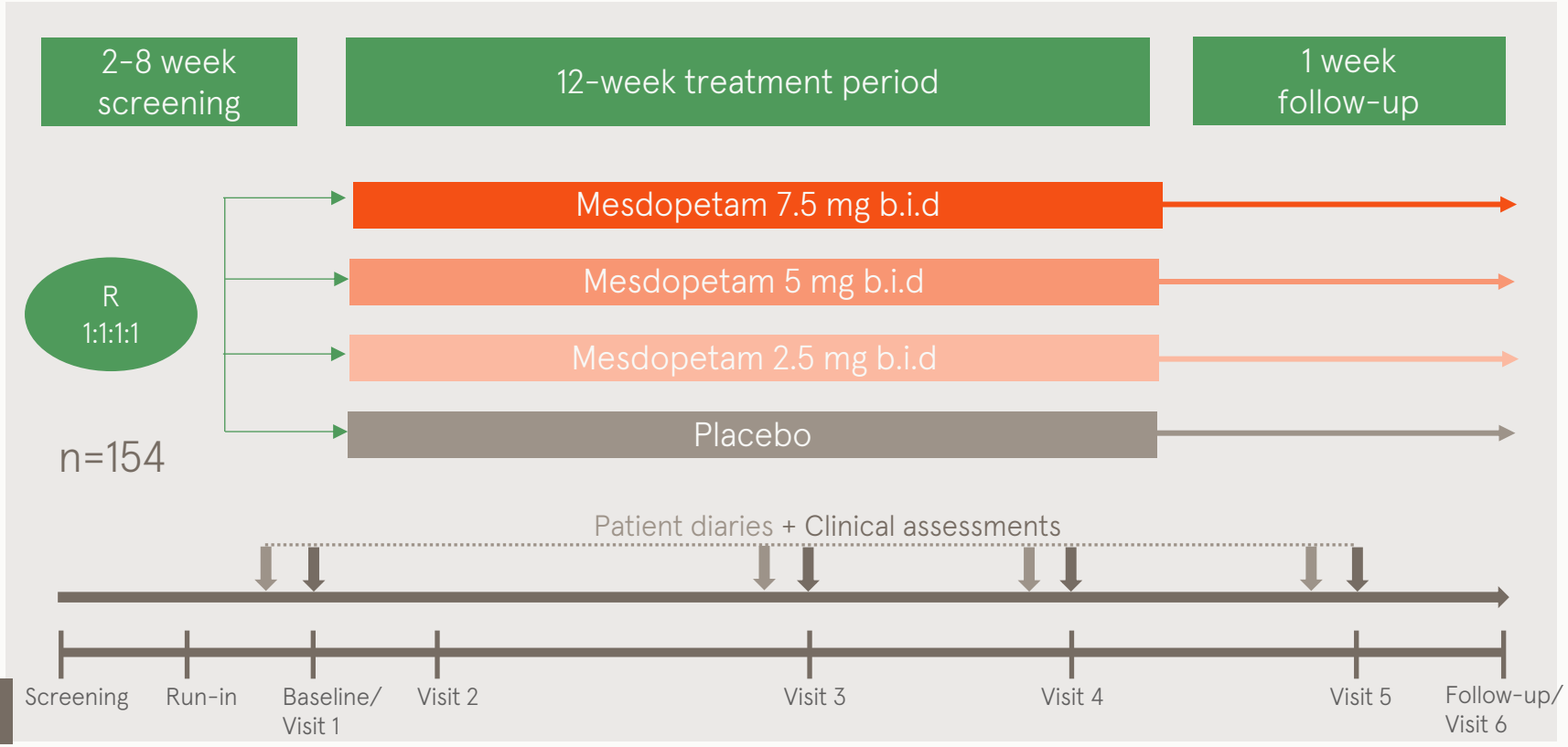
Adverse event	IRL790 dose Titration (N=39)	IRL790 Stable dose phase (N=39)	Placebo (N=36)
Parkinsonism	7 (18%)	2 (7%)	3 (8%)
Fatigue	2 (5%)	0	9 (25%)
Nausea	0	0	4 (11%)
Freezing	1 (3%)	0	4 (11%)

- Table showing AEs with largest difference vs placebo

Phase IIb: Randomized, placebo-controlled study evaluating efficacy on daily ON-time without troublesome dyskinesia in Parkinson's patients

Primary endpoint

- Increase in daily "good ON"-time through reduction of "bad ON" as assessed with patient diaries.
- Efficacy is assessed by means of Hauser patient diaries (a PRO), the UPDRS scale and UDysRS scale.



Top-line data expected YE

Guidance: Phase IIb top-line data around the year-end

Anticipated top-line results	1) Change in daily hours of good ON-time without troublesome dyskinesia compared to placebo 2) Significance and clinical relevance 3) Full account of the study to be presented at a medical congress in H1 2023

Phase IIb study objectives and endpoints

Primary objective

- To evaluate the effectiveness of adjunctive treatment with mesdopetam dosed at 2.5 mg, 5 mg or 7.5 mg b.i.d. compared to placebo in patients with PD exhibiting troublesome ON phase dyskinesia

Primary endpoint

- **Change in average daily hours of ON-time without troublesome dyskinesia with mesdopetam compared to Placebo** as assessed with 24-hour patient home diaries from baseline to end of study (EOT/EW) (visit 5, week 12)

Secondary objectives

- To establish the **dose response relationship** with 3 dose levels of mesdopetam
- To evaluate the effects of mesdopetam on **severity of ON phase dyskinesia** and **motor symptoms of PD**
- To evaluate the effects of mesdopetam on the **daily hours spent in different motor states**
- To evaluate safety and tolerability of mesdopetam given twice daily during 84 consecutive days
- To evaluate trough and 2-hour post dose plasma concentrations of mesdopetam and its two main metabolites

Key secondary endpoints

- Change from baseline in mean score or average daily hours with mesdopetam compared to Placebo for the following measures:
  - ON-phase dyskinesia assessed by MDS-UPDRS part 4, Q 4.2 (Functional impact of dyskinesias)
  - Modified UDysRS parts 1b and 4 of the UDysRS
  - Motor symptoms of PD assessed with MDS-UPDRS total score of part 2 (M-EDL)
  - Daily OFF-time

Other secondary efficacy endpoint

- Change from baseline in average daily hours of ON-time without troublesome dyskinesia for each individual dose level (2.5 mg, 5 mg, 7.5 mg b.i.d.), as well as all active doses grouped compared to Placebo

Competitors do not target “bad ON”-time (PD-LIDs)

MOA	Drug	Increase in “good ON”	Efficacy Mechanism	Side effect profile
MAO inhibitor	Safinamine Rasagiline	1.66 h 1.95 h	Reduced Off time	Dyskinesia, Fall Weight loss, Anorexia, Vomiting
COMT inhibitor	Opicapone	0.97 h	Reduced Off time	Dyskinesia, Constipation, Dry mouth
DA agonist	Ropinirole	1.5 h	Reduced Off time	Dyskinesia, Sleep attacks, Compulsive behavior
Adenosine antagonist	Istradefylline	0.69 h	Reduced Off time	Dyskinesia
Levodopa reformulations	IPX-203* (oral) Duodopa (I/D infusion) FosDopa* (S/C infusion)	0.53 h 1.86 h 1.75 h	Reduced Off time	infusion site AEs, dyskinesia, "On" and "Off" phenomenon, fall, hallucinations and psychosis
NMDA antagonist etc	Amantadine (Gocovri)	2.5 h	Reduced bad ON & reduced Off time	Hallucinations (24%), Peripheral edema Dizziness Dry mouth, Constipation, Fall, Anxiety, Livedo reticularis

Mesdopetam uniquely reduces “bad ON”-time to improve “good ON”

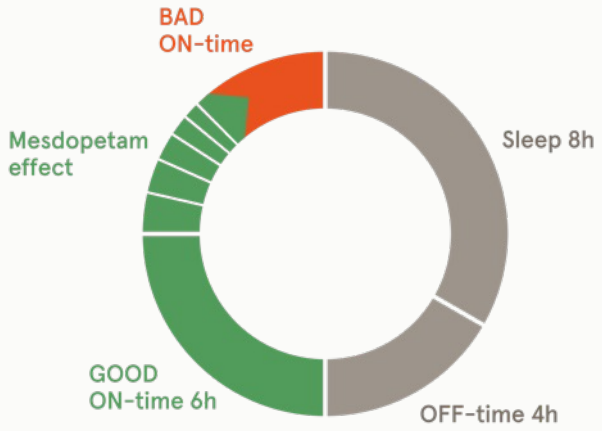
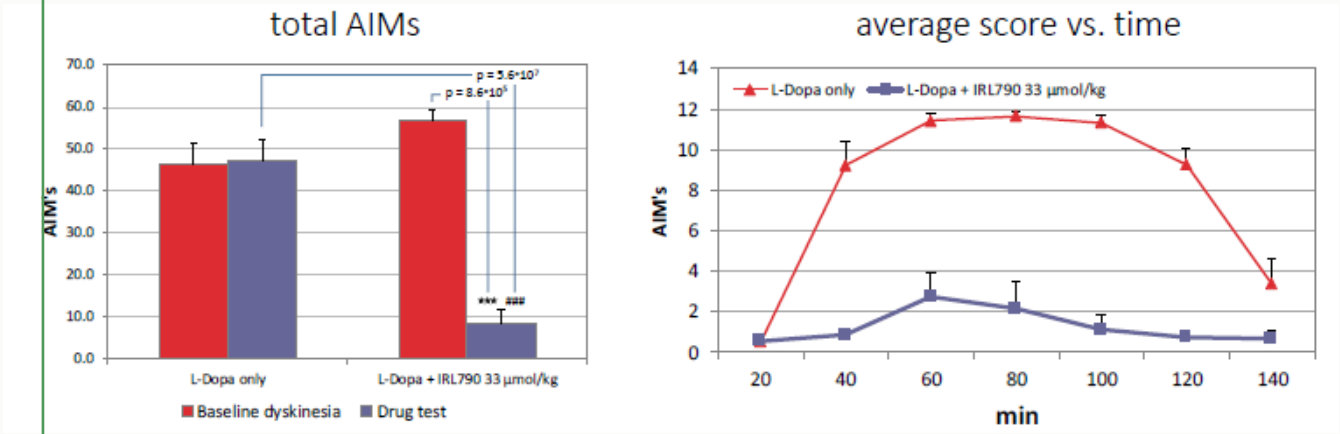


Illustration of a day for a person with Parkinson’s on standard anti-Parkinson’s medication (levodopa) and mesdopetam.

* Recently submitted NDA

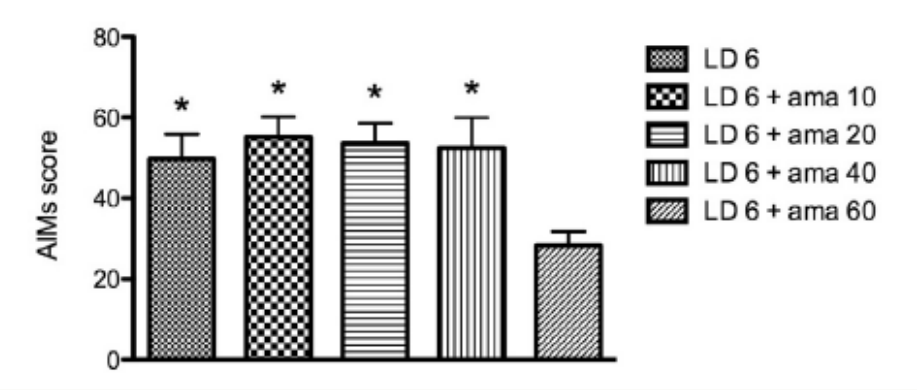
Mesdopetam vs. amantadine in rodent dyskinesia models

Mesdopetam given in combination with levodopa results in near complete suppression, approx. 85% reduction, of dyskinesia in a predictive and validated rodent model[1]



AIMs: abnormal involuntary movement score is the equivalent of LIDs in humans

Amantadine given in combination with levodopa results in approx. 40% reduction of dyskinesia in the same rodent model[2]



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Reference: 1. Waters, N., **Carta, M.**, J., Tedroff, Sonesson, C., Kullingsjö. J., Svensson, P., Waters, S. (2016, September). Pharmacology of IRL790, a psychomotor stabilizer for the treatment of L-dopa induced dyskinesias and psychosis in Parkinson's disease. Poster (We-66C) presented at Dopamine 2016, Vienna, Austria; 2. E. Tronci, c. Fidalgo, e. Zianni, m. Collu, r. Stancampiano, m. Morelli, f.Gardoni and **m. Carta**. Neuroscience 265 (2014) 245–252 http://dx.Doi.Org/10.1016/j.Neuroscience.2014.01.042

One of the largest licensing agreements in Swedish biotech

IRLAB is eligible to receive up to $363 million plus royalties of worldwide sales:

- Ipsen is responsible for all remaining clinical development and worldwide commercialization
- Good strategic fit with their existing products and synergy with their commercial footprint in neuromuscular treatment clinics
- The terms
  - **$28 million** upfront payment
  - **$335 million** in potential development, regulatory and sales-based milestones, and;
  - Tiered low **double-digit royalties** on worldwide net sales

IPSEN
Innovation for patient care

Type	Global, mid-sized biopharmaceutical company
Employees	approx. 5,700 worldwide
Offices	Paris-Saclay, France (hq); Oxford, UK; Cambridge, U.S.; Shanghai, China
Specialty	Transformative medicines in Oncology, Rare Disease and Neuroscience
Total sales (FY 2020)	over €2.5 billion
Sales operations	Sells more than 20 medicines in over 115 countries, with a direct commercial presence in more than 30 countries

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Pirepemat (IRL752)

(pir͡ epe͡ mat)

- Improve balance and reduce falls in Parkinson’s (PD-Falls)
- Ongoing randomized, placebo-controlled Phase IIb clinical trial
- Wholly-owned unencumbered asset

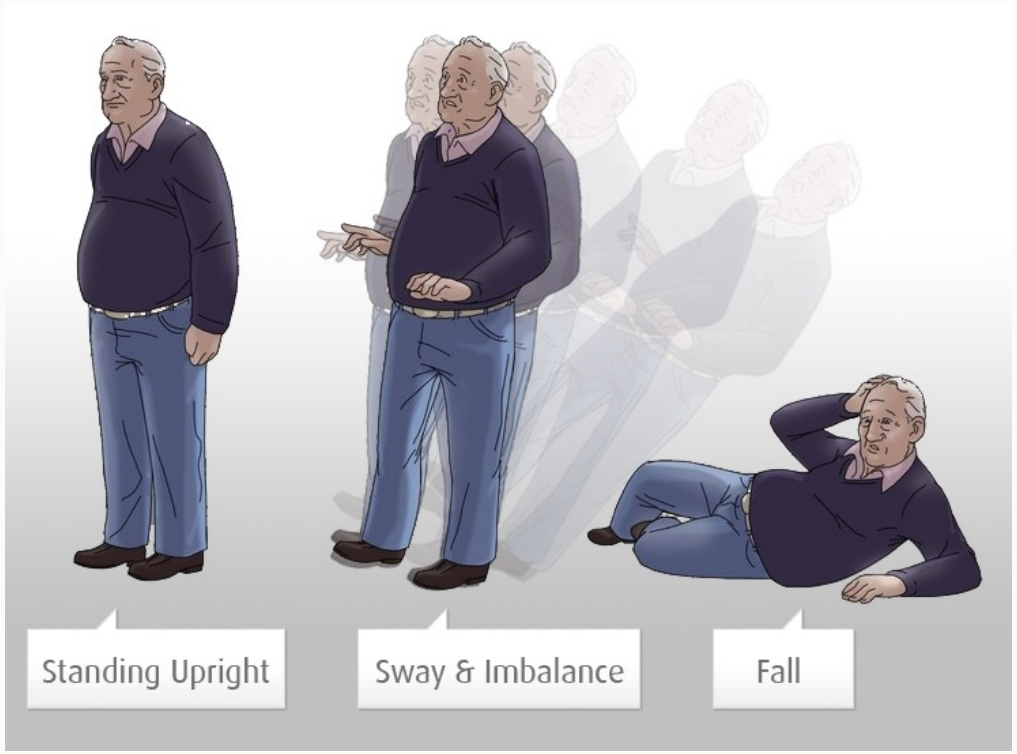
Why preventing falls in Parkinson's?

Reducing falls is the greatest medical need and one of the worst aspects of Parkinson's.

- Prospective studies report that 70% of people with Parkinson's have at least one fall in a year and about 45% fall recurrently.
- Median survival in patients that have recurrent falls is 6 years.
- Reasons why people with Parkinson's fall[1,2]:

Cognitive decline ➡ Impaired balance ➡ Falls ➡ Injuries & costs

- Consequences of falls include fractures and injury, fear of future falls, hospital admission, and increased caregiver burden, with falls cited as one of the worst aspects of the disease.



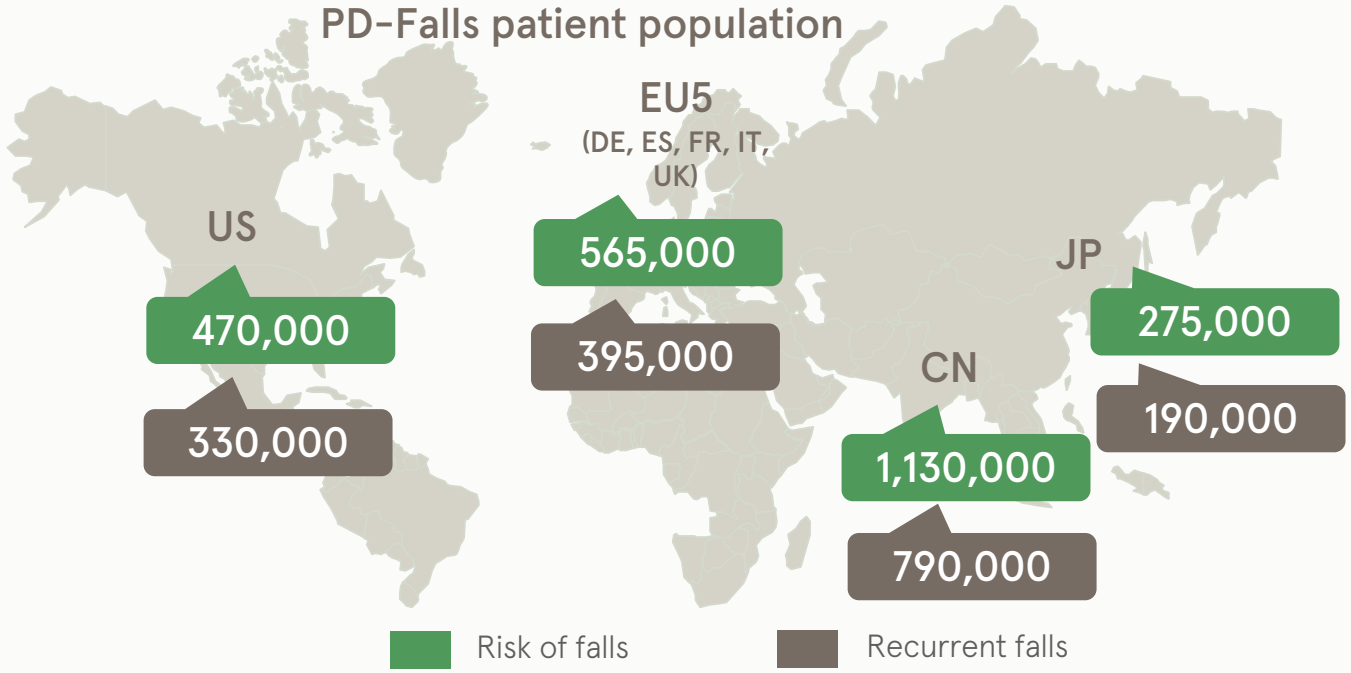
Fall injuries are the dominant cause of hospitalization for people with Parkinson's

Reference: 1. Shrag et al (2015) *npj Parkinson's Disease*. 15011; 2. Ibarrientos, (2019) Thesis for: BS Materials Science and Engineering 3. *Parkinsonism Relat Disord*. 2019 Apr;61:106-110. doi: 10.1016/j.parkreldis.2018.11.008

Pirepemat can improve balance and reduce falls in Parkinson's

– A large unmet need

- **45% of all people with Parkinson's fall recurrently**
- Impaired balance and a fear of falling significantly impair the daily lives of many with Parkinson's
- **Pirepemat is designed to improve balance and reduce falls** by strengthening nerve cell signalling in the cortex via action at 5HT7 and alpha-2 receptors
- The **cost of treatment for a fall** injury is estimated to about **30,000 USD** in people over age 65



IRLAB addresses a new, untapped market

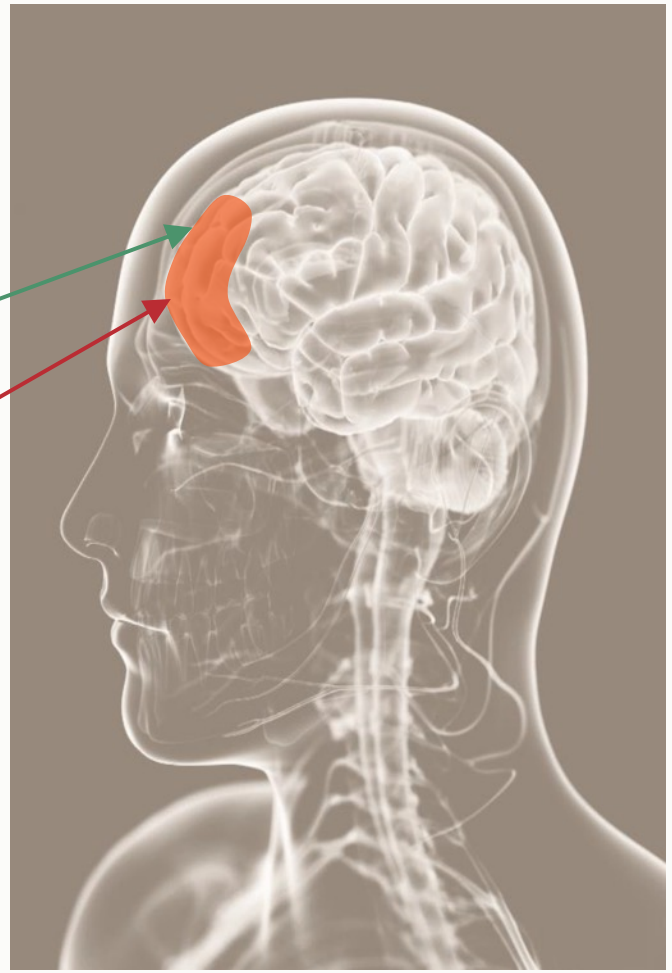
Impaired balance leading to falls in Parkinson's have high prevalence and represent a great unmet medical need. There are currently no approved drugs.

References: Crouse J. et al. (2016) Rev. Neurosci. 0002: 1-5; GBD (2016) Lancet Neurol 2018; 17: 939–53; Kalilani (2016) PLoS One. 2016; 11(9): e0161689; Kim et al (2018) Handbook of Clinical Neurology. 159 (3): 173 – 193.

Mechanism of action: pirepemat

- In Parkinson's, cognitive impairment, postural instability, and falls (balance impairment) occurs due to loss of NE & DA transmission in the cerebral cortex of the brain
- Levodopa does not restore neuronal function in the cerebral cortex
- Pirepemat designed to enhance synaptic activity in the cerebral cortex

1. **Increased synaptic availability of dopamine (DA) and norepinephrine (NE) in the frontal cortex**
   - Balance, motor function – Cognitive function, Affect and impulse control
2. **Specific pharmacological profile attributed to:**
   - Effects at 5HT7 receptors, cortical α-receptors (2c)
3. **In preclinical studies evaluating effects on cortical function pirepemat displays**
   - Improvement in DA & NE transmission and gene expression related to synaptic activity
   - Functional effects in impaired cognitive states
   - Improvement in motor function in DA/NE hypoactive state



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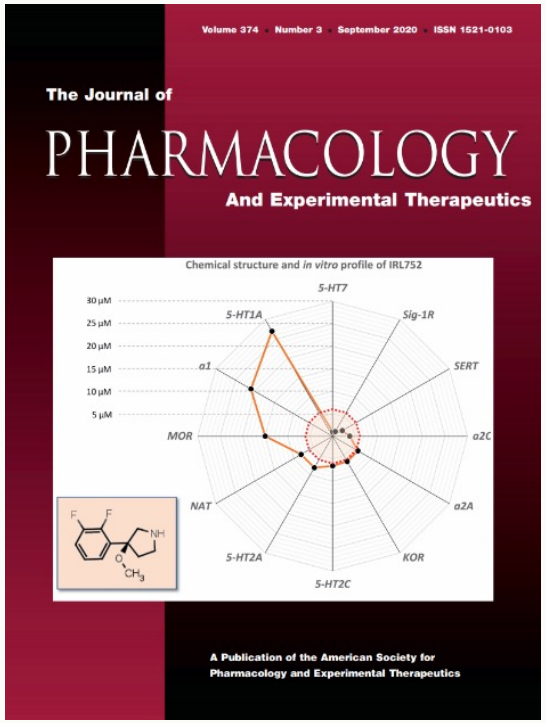
Reference: Hjorth, S. et al. (3S)-3-(2,3-difluorophenyl)-3-methoxypyrrolidine (IRL752) – a novel cortical-preferring catecholamine transmission- and cognition-promoting agent. Journal of Pharmacology and Experimental Therapeutics, DOI: 10.1124/jpet.120.000037.

A first-in-class treatment for impaired balance and falls

Mechanism of Action	• **Combines antagonism at 5HT7 and alpha-2 receptors** leading to highly specific activation of frontal cortex NA and DA
Tolerability	• **Well tolerated** in clinical studies • Dose range defined
Efficacy	• **Pirepemat shows promising improvements** of balance and has potential to reduce falls in Parkinson's by 50%
Regulatory	• Ongoing Phase IIb program developed with regulatory agencies, scientific advisors and regulatory experts • EU regulatory agencies: Study and ethical approvals granted; study ongoing. • FDA advice to conduct additional DMPK and in vitro mechanism studies, prior to IND. These studies are expected to be finalized Q4 2022
Potential	• **About 50% of patients with Parkinson's fall** (Hoehn&Yahr stage ≥ 3) • Health economic data show cost of falls are very high
Validation	• **WHO-INN** proposes new INN, pirepemat (generic name) representing a new CNS compound class = first-in-class • **Studies published** in highly ranked scientific journals



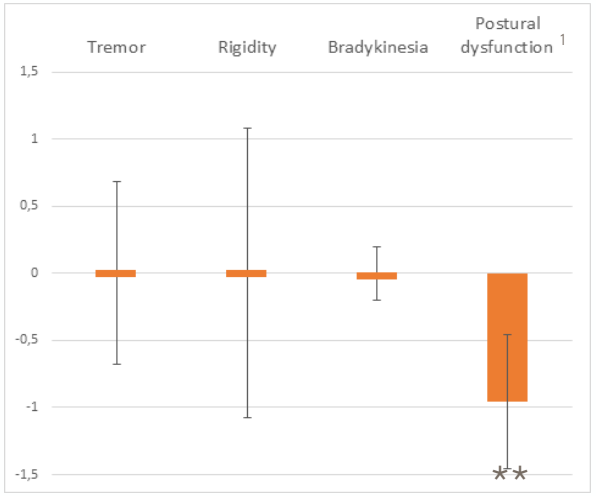
About the cover: Pirepemat featured on the cover of the Sep 2020 issue of JPET

Pirepemat's clinical development plan

Study	Study Population	Treatment duration	Design	# subjects	Primary objectives	Status	Result
Ph I: SAD+ MAD	Healthy male volunteers	SAD+MAD 10 days	DB placebo controlled alternate panel design	16 (SAD) 24 (MAD)	PK, safety, tolerability	Finalized	Single and multiple doses of pirepemat were generally well tolerated. The safety, tolerability, and PK profiles in this study support 3-times-daily dosing and further clinical development.
Ph I new PK tablet formulation	Elderly male and female healthy volunteers Average 72 years	MAD 14 days	Open label	9	Pharmacokinetics Tablet formulation	Finalized	The half-life of pirepemat may be longer, and plasma exposures somewhat higher, in elderly subjects as compared to younger subjects. No SAEs occurred in the study and there were no clinically significant abnormal findings in any of the clinical safety parameters. Elevated plasma liver enzymes levels following discontinuation of study treatment were seen in some individuals.
Ph IIa	Patients with Parkinson's disease and dementia	4 weeks	DB placebo controlled	32 (3:1 active vs. placebo)	Falls frequency as compared to placebo Cognitive function MDS-UPDRS, NPI, CGI Balance tests	Finalized	Pirepemat appears to be safe and well tolerated during 4-week treatment in study population. Adverse events were predominantly central nervous system related, mild, and predominantly reported during the first 2 weeks of treatment. Elevated liver enzymes observed in three pts following discontinuation. The interpretation is that this is part of a rebound effect following an abrupt termination of treatment with pirepemat.
Ph IIb	Parkinson's patients at H&Y stage >2,5. with MoCA<26 At least 2 falls 1 mo prior to randomization	12 weeks	DB placebo controlled	165	Reduction in falls frequency MoCA, UPDRS II+III, CGI-S	Ongoing	Recruiting in France, Germany, Poland Spain & Sweden.

Phase IIa clinical proof-of-concept[1]

Pirepemat affects Parkinson's symptoms not treated by levodopa



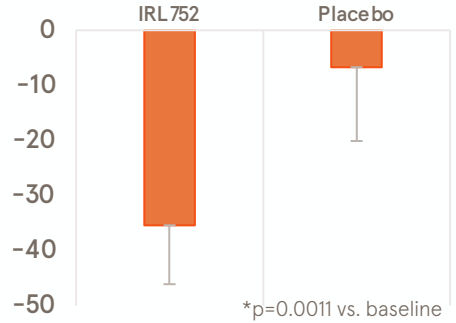
Mean absolute from baseline (with 95% conf. Intervals) in the four cardinal PD motor domains in pirepemat treated subjects. 1) Postural dysfunction construct: UPDRS part 2: Falling (unrelated to freezing) (13), Freezing when walking (14) UPDRS part 3: Postural stability (30)

Adverse events

AEs were predominantly central nervous system related, mild, and mostly reported during the first 2 weeks of treatment. No events related to the cardiovascular system were noted. Hepatic enzymes increased (n = 3) and cognitive disorder (n = 2). Most of the events were assessed as mild.

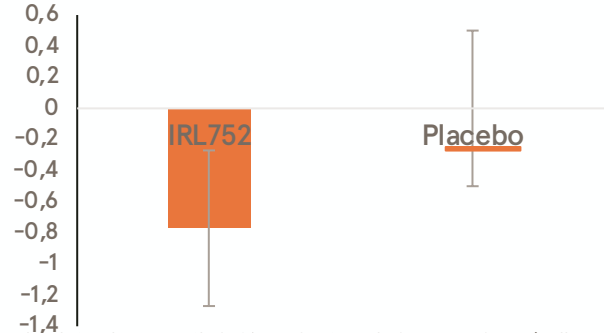
Pirepemat has potential to improve the postural dysfunction associated with Parkinson's not treated by levodopa

35% improvement in balance



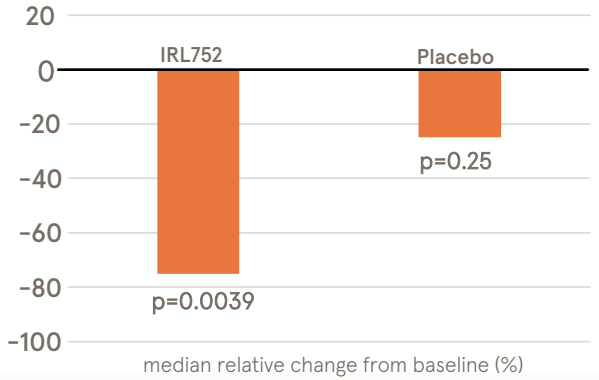
Balance, Change from baseline (%) in sum score of UPDRS items 13, 14 and 30

53% reduction in falls



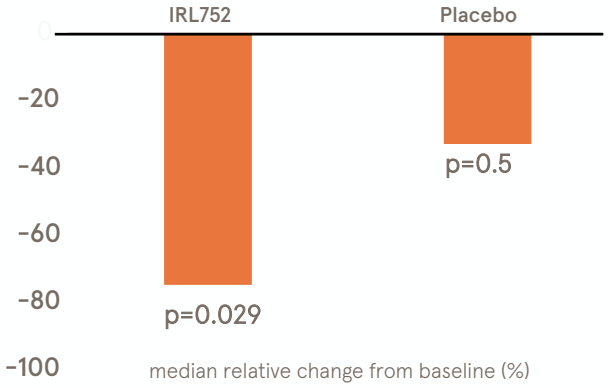
Falls, absolute change with 95% conf. intervals for UPDRS q13 (Falling unrelated to freezing) in fallers. Fallers are defined as a score of ≥1 at baseline.

70% reduction in Apathy



median relative change from baseline (%)

80% reduction in Caregiver distress



median relative change from baseline (%)

Publication: Svenningsson, P. et al. (2020) A Phase 2a Trial Investigating the Safety and Tolerability of the Novel Cortical Enhancer IRL752 in Parkinson's Disease Dementia. Mov Disord. doi:10.1002/mds.28020

1: Assessments are exploratory. Study not designed or powered for efficacy

Clinical Phase IIb: Improve balance and reduce falls

"A Phase IIb to evaluate the effects of pirepemat on falls frequency as compared to placebo."

Study IRL752C003

Primary objective

- To evaluate the effects of pirepemat on **falls frequency** as compared to placebo.

Secondary & other objectives

- To evaluate the effects of pirepemat on **cognitive functions** assessed with Montreal Cognitive Assessment (MoCA), as compared to placebo.
- To evaluate the effects of pirepemat on **Parkinson's disease symptoms** assessed with Unified Parkinson's Disease Rating Scale (MDS-UPDRS) as compared to placebo.
- To evaluate the effects of pirepemat on **postural dysfunction**, tandem walking and single leg stance test compared to placebo.
- To evaluate the effects of pirepemat on **global function** assessed with Clinicians Global Impression of Severity (CGIS), as compared to placebo.
- To examine the relationship between dose and plasma concentration of pirepemat and pharmacodynamic effects.

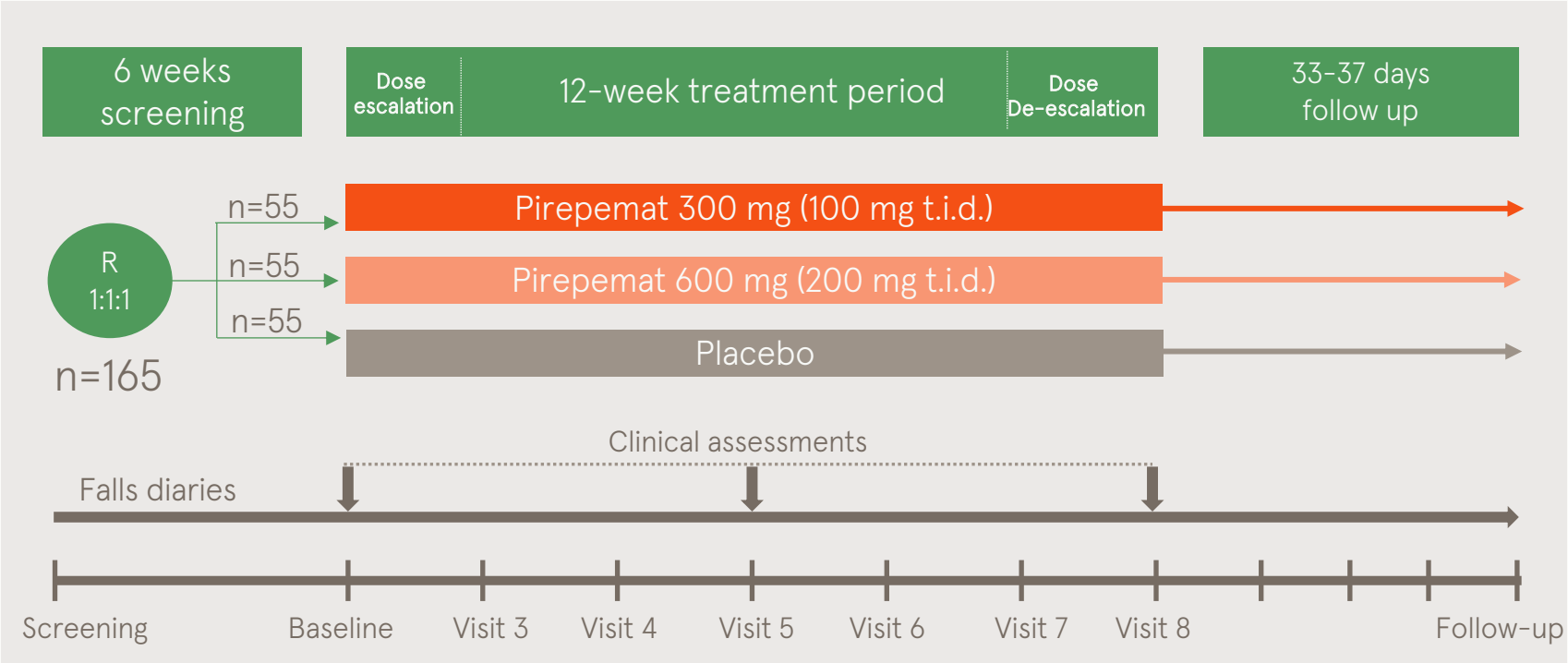
Ongoing Phase IIb study evaluating efficacy of pirepemat on falls frequency in Parkinson's patients

Inclusion criteria

- Parkinson's patients (55-85 yrs) with mild cognitive impairment
- Recurrent falls during the past 3 months and at least 2 falls during the past 4 weeks before baseline

Primary endpoint

- Evaluate the effects of pirepemat on falls frequency as compared to placebo
- Efficacy assessed by Falls diaries, motor function, Cognitive and balance assessments as well as a CGIS



Data expected YE 2023

IRLAB

Protocol considerations: Dose de-escalation and specific exclusion criteria are applied in the protocol to limit the impact of rebound effect on liver enzymes after abrupt discontinuation of study medication

IRLAB

Preclinical & Research projects

IRL942: **Clinical candidate:** to improve cognitive function and brain health

IRL757: **Clinical candidate:** to treat apathy

P003: **Lead optimization stage:** Once-daily treatment of Parkinson's without the troublesome complications

Ongoing preclinical development programs on track

IRL942

Restore cognitive function

Improvement of cognitive function:

memory, perception, attention, reasoning, problem solving and decision-making

Status: Phase I to initiate in 2023

IRL757

Treat apathy in neurology

Treatment for apathy

loss of initiative, interest and emotional expression/ responsiveness

Status: Phase I to initiate in 2023

P003

Once-daily treatment of Parkinson's

Once-daily treatment of Parkinson's without the troublesome complications

-> Next generation Parkinson's treatment

Status: Nominate candidate in 2022

Scientific rationale of IRL942 & IRL757

Problem

Disruption of frontal neurotransmission is implicated in the pathogenesis of cognitive decline and neuro-psychiatric symptoms in PD and other neurological disorders

No current treatments directly address these specific cortical deficiencies

IRLAB's solution

IRL942 and IRL757 show a unique ability to activate frontal neurotransmission, synaptic gene expression, and associated circuits, improving cognitive function across modalities

Potential for both symptomatic relief *and* disease modification

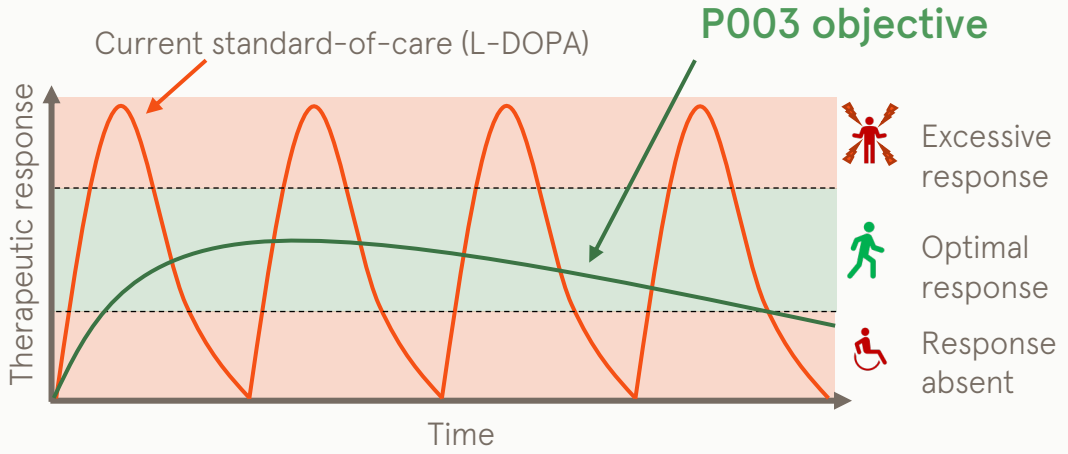
Potential clinical indications:

- Parkinson's disease: dementia, apathy, depression, attention/vigilance
- Besides PD dementia, data support potential in additional indications with unmet needs:
- Other dementias

  Cortical synaptic dysfunction a hallmark in multiple dementia types
  - Lewy body dementia, Alzheimer's disease, Vascular dementia, Fronto-temporal dementia, Age related cognitive decline/MCI
- Apathy & Depression
  - Apathy: Cortex crucial in control of motivation, mood, cognition, and social behavior
  - Depression: Disruption of PFC signaling implicated in the pathogenesis
- ADHD
  - Cortical weakness in NA/DA transmission - no cortically targeted treatments available today
- Schizophrenia
  - Difficult-to-treat pathology converges on cortical dysfunction - negative and cognitive symptoms

P003 – First orally active, full efficacy, long-acting Parkinson's treatments

- Current treatment of Parkinson's is based on levodopa
- Limitations of levodopa
  - Short duration of action warrants multiple daily administrations leading to complications
    - Excessive stimulation and involuntary movements
    - 'On-off'-fluctuations (periods of absent effect)
- Levodopa supplemented by add-on medications:
  - Dopamine D_2 agonists
    - Long duration of action but inferior efficacy
  - Enzyme inhibitors
    - Provides minor extension of levodopa duration of action
  - Apomorphine
    - D_1/D_2 agonist – high efficacy but poor PK and not orally bioavailable
    - Available as acute rescue during 'off'-periods or chronically implanted pump



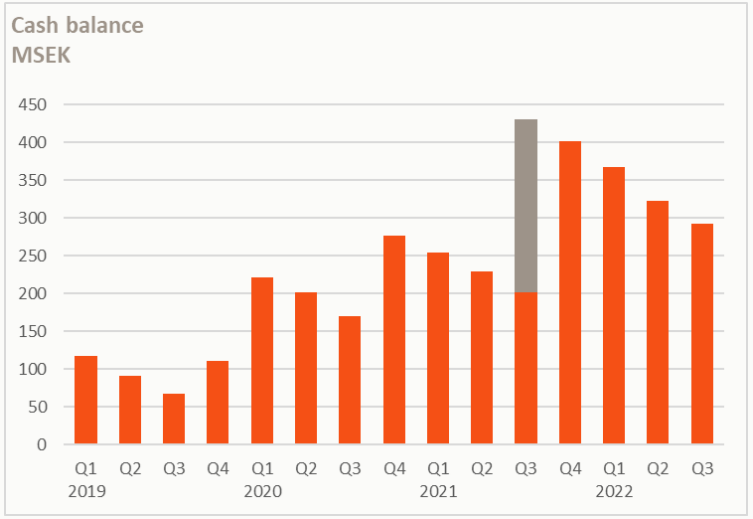
IRLAB

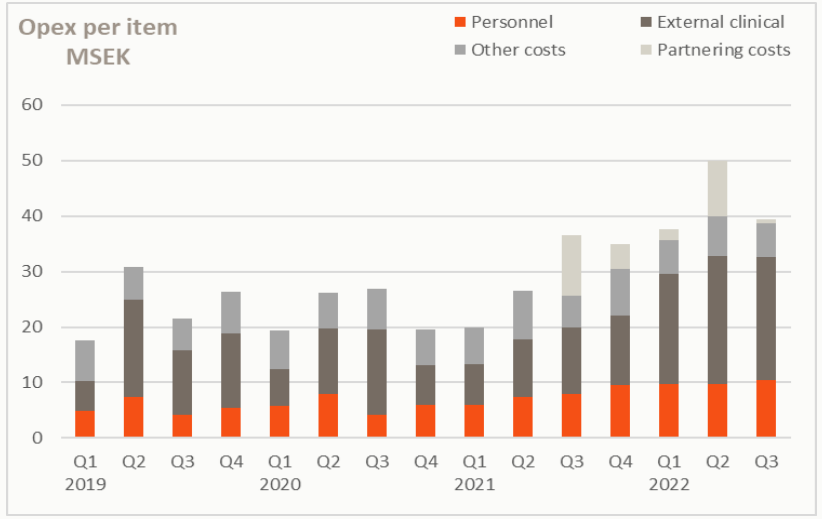
Finance report Q3 2022

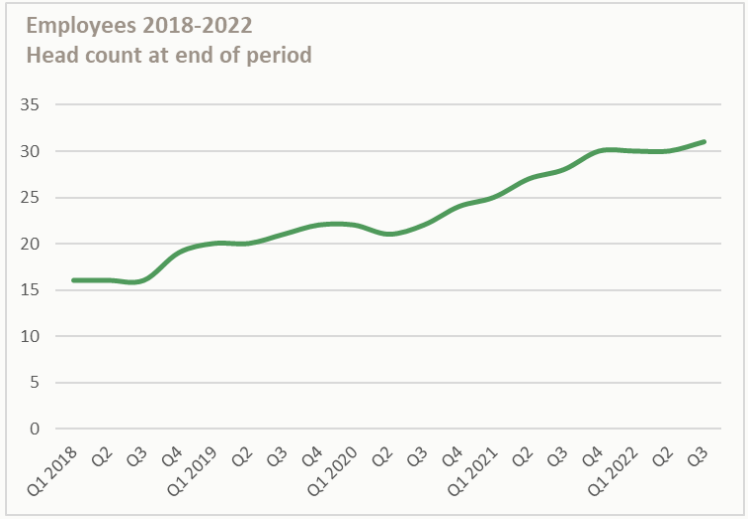
- Highlights and summary
- Analyst coverage

Financial highlights of Q3 2022

- Geopolitical events and global economics induce sustained focus on cost control
- Investing in two clinical Phase IIb programs according to plan
- Increasing investment in preclinical development, advancing IRL757 and IRL942 towards clinical Ph I
- Stable cost development at circa SEK 40m per quarter
- Strong cash position SEK 292m







Partnering cost are cost for entering licensing agreements and costs which are covered by a corresponding revenue from partners.

Financial summary of Q3 2022

Highlights

- Strong cash position: SEK 292m
- Cash flow increasing due to increased R&D activity
- Net sales
  - SEK 13m realized cost for Phase IIb study with mesdopetam
  - SEK 3m for services to Ipsen

	Jul-Sept 2022	Jul-Sept 2021	Jan-Sept 2022	Jan-Sept 2021	Jan-Dec 2021
Net sales	16 503	195 641	48 955	195 641	207 782
Operating profits/loss	-23 894	121 665	-79 998	75 177	52 576
Profit/loss for the period	-23 957	121 567	-80 241	74 897	51 781
Earnings per share before and after dilution	-0.46	2,35	-1,55	1.45	1.00
Cash and cash equivalents	291,749	431 168	291 749	431 168	401 897
Cash flow from operating activities	-27 932	202 829	-104 725	157 029	128 641
Equity per share at end of period, SEK	6.25	8.17	6.25	8.17	7.72
Equity ratio at end of period, %	87	85	87	85	85
Average number of employees	31	22	28	21	22
- of which in R&D	27	20	25	18	20
Number of registered shares end of period	51 868 406	51 748 406	51 748 406	51 748 406	51 748 406
Share price at the end of period, SEK	34.50	46.75	34.50	46.75	44.00

Analyst coverage

REDEYE NORDIC GROWTH	• Fredrik Thor and Kevin Sule	+46 (0) 545 013 30 info@redeye.se
ABG SUNDAL COLLIER	• Dr Adam Karlsson and Dr Gonzalo Artiach	+46 (0)8 566 286 00
EDISON BRILLIANT KNOWLEDGE	• Soo Romanoff and Dr Harry Shrives	+44 (0)20 3077 5700 healthcare@edisongroup.com

Increasing visibility and company reach

Media coverage and interviews

Scrip Pharma Intelligence

Scrip: Pivotal Period For Irlab And Its Parkinson's Pipeline (Oct 4)

ParetoTV

Trading Direkt Healthcare

Redeye

Company presentations and business updates

ProHearings

ABG SUNDAL COLLIER

REDEYE NORDIC GROWTH

INV€$TIVAL™ SHOWCASE

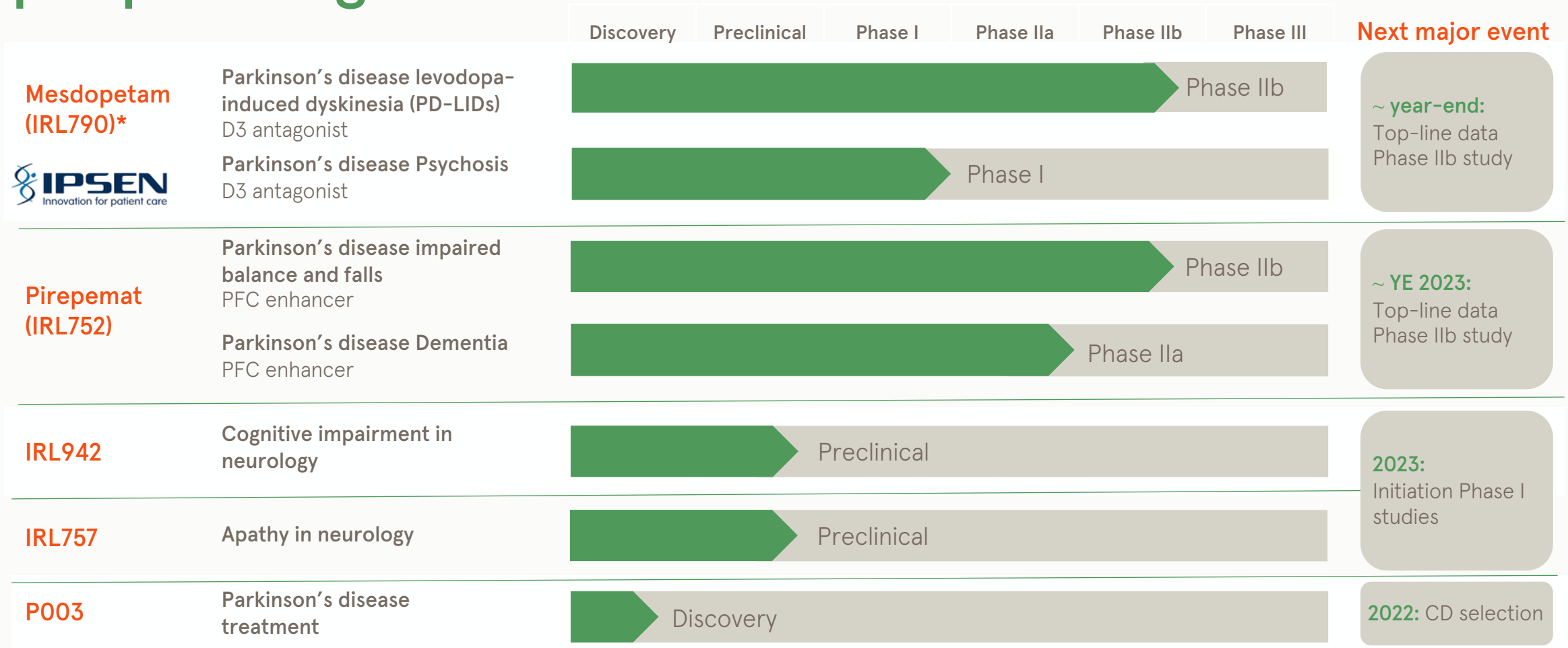
Pareto Securities

SEB

BIO-EUROPE®

DNB

Pipeline transforming treatment of people living with Parkinson's



Anticipated newsflow the next 18 months

	Q3 '22	Q4 '22	H1 2023	H2 2023
Milestones	✓ Mesdopetam Phase IIb recruitment closed ✓ Mesdopetam Phase IIb last patient randomized	○ P003 CD nomination ○ Mesdopetam Phase IIb last patient last visit ○ Mesdopetam Phase IIb top-line results	○ Capital Markets Day ○ IRL757 preparation for Phase I study ○ IRL942 preparation for Phase I study ○ Mesdopetam clinical development	○ Pirepemat Phase IIb top-line results ○ IRL757 Phase I study initiation ○ IRL942 Phase I study initiation ○ P003 Phase I study preparation ○ Mesdopetam clinical development
Events	✓ 8 Sep: Pareto Securities Annual HC Conference, Sthlm ✓ 13 Sep: ABGSC Investor Day, Sthlm	✓ 12 Oct: Redeye Neurology Seminar, Sthlm ✓ 24-26 Oct: Bio-Europe 2022, Germany ○ 14 Nov: LSX Investival Showcase, London ○ 23 Nov: SEB Healthcare Seminar, Sthlm ○ 24 Nov: Redeye Life Science Summit, Sthlm ○ 15 Dec: DNB event, Oslo	○ Participation at medical congresses ○ 31 Mar: AD/PD congress, Gothenburg	○ Participation at medical congresses

Outlook

Foundation for transformative treatments

2020 – 2023

Mesdopetam

Successful completion of Phase IIb study

Pirepemat

Successful completion of Phase IIb study

Pipeline

Initiate Phase I studies with IRL942 and IRL757

Initiate preclinical development of CD from P003

Continued ISP development

Business development

Active collaboration with Ipsen on the clinical development of mesdopetam

Building for the future

2023 – 2025

Mesdopetam

Phase III studies initiated*

Pirepemat

Initiating Phase III studies

Pipeline

Development of new drug candidates toward clinical PoC in Phase Ib and Phase II – IRL942, IRL757, CD from P003

Continued ISP development

Business development

Potential milestones from Ipsen.

Retain full strategic autonomy to develop and / or commercialize our unincumbered pipeline assets, alone or in partnership

Delivering first-in-class treatments

2025 – 2027

Mesdopetam

Finalizing Phase III and apply for marketing authorization*

Pirepemat

Finalizing Phase III and apply for marketing authorization

Pipeline

Development of new drug candidates: Phase II PoC and initiation of Phase III (IRL942, IRL757 and CD from P003)

* Governed by partner Ipsen. In 2021, Ipsen obtained an exclusive global license to develop and commercialize mesdopetam from IRLAB.
PoC = proof of concept

IRLAB at a glance

Pioneering biology & ISP

Deep profound understanding of Parkinson's based on research by Nobel laurate Prof. Arvid Carlsson

Focused strategy

Treating PD patients throughout disease journey, has blockbuster potential as a pharma business

IPSEN
Innovation for patient care

Validated proof-of-concept

One clinical program already licensed to pharma

$363m + royalties

Four shots on goal

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

Organization positioned for success

Experienced international organization, Strong Balance sheet, Listed Nasdaq Stockholm

IRLAB

Contact:

Richard Godfrey, CEO, richard.godfrey@irlab.se

Nicholas Waters, EVP and Head of R&D, nicholas.waters@irlab.se

Viktor Siewertz, CFO, viktor.siewertz@irlab.se

IRLAB discovers and develops novel drugs for the treatment of Parkinson's disease and other disorders of the brain. The company's most advanced drug candidates, mesdopetam (IRL790) and pirepemat (IRL752), both of which are currently subject to Phase IIb studies, were designed to treat some of the most difficult symptoms associated with Parkinson's disease. In 2021, IRLAB entered into an exclusive global license agreement with Ipsen regarding the development and commercialization of mesdopetam. Through its proprietary research platform, ISP (Integrative Screening Process), IRLAB has discovered and developed all its projects and keeps discovering innovative drug candidates for the treatment of disorders of the central nervous system (CNS). In addition to IRLAB's strong clinical development portfolio, IRLAB runs several preclinical programs, with IRL942 and IRL747 in development for Phase I studies.

Website: irlab.se | Follow us on LinkedIn >