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#### Highlights

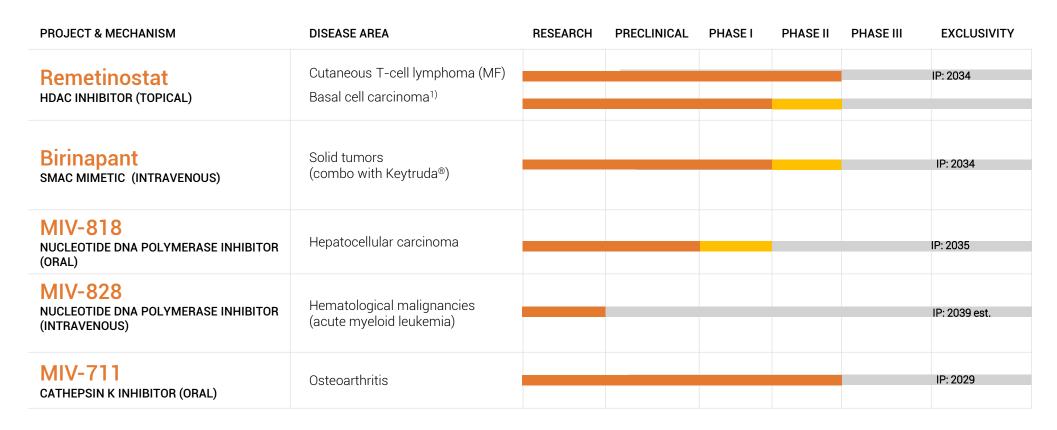
- Uli Hacksell appointed as new CEO
- Clinical Development focus on oncology
  - Birinapant/Keytruda®: completion phase I study Q4 2018
  - Birinapant/Keytruda®: start of phase II study Q4 2018
  - MIV-818: Start of phase 1 study Q4 2018
  - MIV-828: CD nomination Q4 2018
- Employees reduced to 17 FTE
- Fixed cost base reduced with two thirds
- Strong management and cost-effective virtual organization

#### Financial summary

Summary of the Group's figures	0	Q4		Q1 - Q4	
(SEK m)	2018	2017	2018	2017	
Net turnover	13,6	4,2	23,9	36,6	
Profit/loss before tax	-114,6	-103,1	-350,5	-359,7	
Cash and cash equivalents at period end	286,3	467,8	286,3	467,8	

- Net turnover 2018 was 24 million SEK
- Loss of the year was 351 million SEK, of which 38 million SEK is restructuring
- Cash position as of Dec 31, 2018: SEK 286 million
- Market cap as of Feb 13, 2019: approximately SEK 500 million

#### Broad and robust pipeline

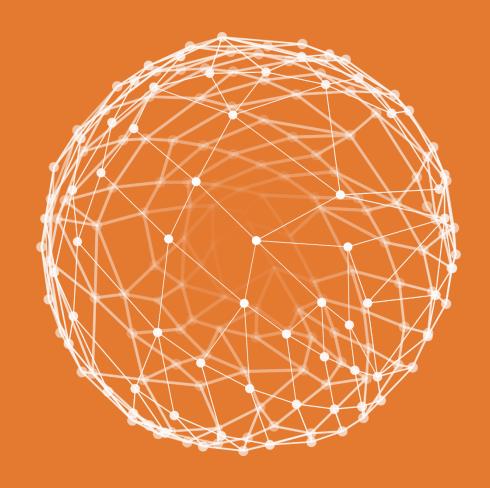


<sup>&</sup>lt;sup>1)</sup> Investigator sponsored study at Stanford U.





# Remetinostat for early-stage cutaneous T-cell lymphoma



#### MF-CTCL: orphan blood cancer indication

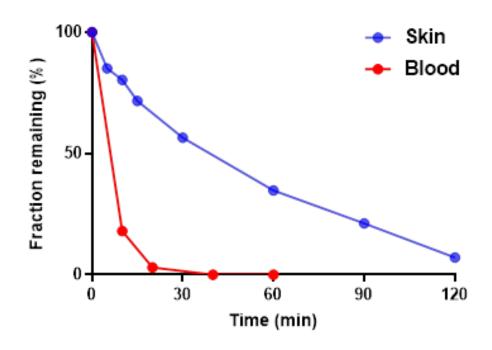
Cutaneous T-cell lymphoma (CTCL) affects lymphocytes (cells belonging to the immune defense system) located in the skin and typically has a chronic course.

- CTCL is a rare form of non-Hodgkin lymphoma primarily present in the skin. Mycosis fungoides (MF) is the most common form of CTCL
- Annual new cases; US ~ 2,000; EU ~ 3,000; Sweden ~ 25
- Five-year survival: ~ 85%; more than 16,000 US patients live with MF-CTCL
- Skin lesions and severe itching are common and affect patients quality of life
- Early stage disease lasts for long periods and requires well tolerated therapy
- Available treatments, including systemic HDAC inhibitors, have severe side effects



#### Remetinostat: for treatment of early stage MF-CTCL

- Remetinostat is a histone deacetylase (HDAC) inhibitor
- Remetinostat's unique chemistry and topical formulation provides for activity in skin and rapid degradation in blood
- Approved HDAC inhibitors not used in early-stage MF-CTCL patients
- US orphan drug designation





#### Remetinostat: clinical Proof-of-Concept phase II MF-CTCL study

Twelve months phase II data shows reduction in both lesions and severe itch

Dose	1%	0.5%	1%
	1x/day	2x/day	2x/day
	n=20	n=20	n=20
Lesion responses <sup>1</sup>	20%	25%	40%
Patients with clinically significant pruritus	1%	0.5%	1%
	1x/day	2x/day	2x/day
	n=8/20	n=6/20	n=10/20
	(40%)	(30%)	(50%)
Pruritus responses	37.5%	50%	80%

#### Well tolerated:

- No HDAC inhibitor-associated systemic adverse events
- Median time on treatment: 336 days (1% 2x/day dose)

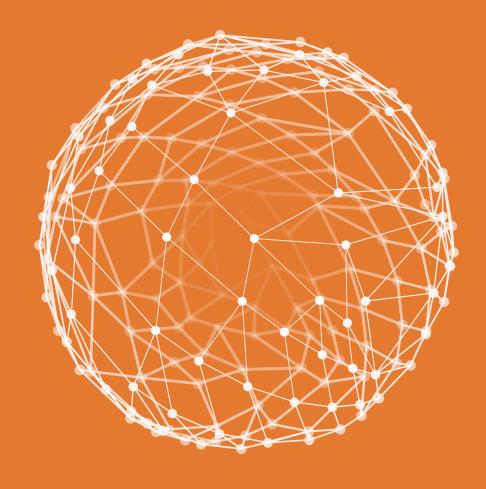


#### Remetinostat: next steps

- Medivir is currently defining the phase III design based on the requirements clarified by the FDA.
- One phase III study expected to be sufficient for NDA
- Phase III study will enroll treatment-experienced patients
- Medivir aims to identify a business partner for the further development of remetinostat.



## Birinapant: Uniquely potent against selected solid tumors



#### Solid tumors: large unmet medical needs

Many patients with solid tumors have few or no options and are in need of effective medicines to extend life. The immuno-oncology medicine Keytruda® on its own is not sufficiently effective in treatment of certain solid tumors.

#### Colorectal cancer indication (CRC)

- The second most common cancer in women and the third in men
- Estimated new cases 2018: US: ~ 140,000; EU: ~ 490,000; Sweden: ~ 6,200
- Five-year survival: 14% when metastatic

#### Other cancer indications

- Ovarian cancer, the leading cause of mortality due a gynecologic tumor
  - Estimated new cases 2018: US: ~ 22,000; EU: ~ 23,000 Sweden: ~ 700
  - Five-year survival: 47%
- Cervical cancer, the third most common cancer in women world-wide
  - Estimated new cases 2018: US: ~ 13,000; EU: ~ 60,000; Sweden: ~ 450
  - Five-year survival: 62.5%



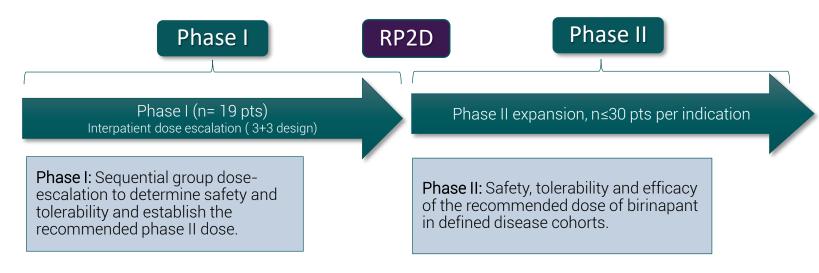
## Birinapant may benefit patients with inadequate response to immuno-oncology therapies

- Birinapant, a SMAC mimetic, enables tumor cell death and augments the immune system.
- Great potential to improve treatment of cancers when combined with immuno-therapy
- Ongoing collaboration with Merck for a phase I/II study in solid tumors
  - Joint development committee oversees the study
  - o Keytruda® provided at no cost by Merck
  - Medivir retains full global rights to birinapant and data

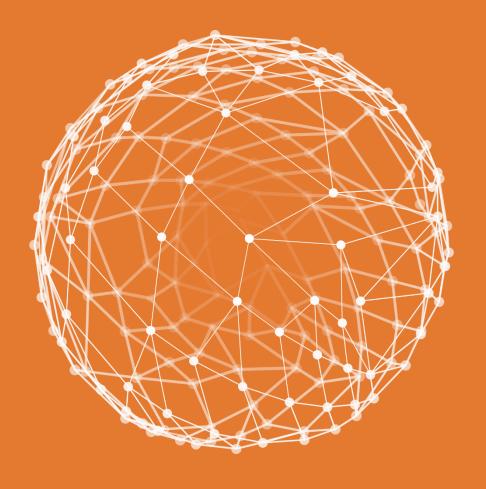


#### Birinapant/Keytruda® combination - phase II study ongoing

- Dose escalation completed; December 2018: n=19
  - o One CRC patient has achieved partial response, which had been maintained for over 13 months
  - o Three patients had stable disease for 18 weeks
  - o Safety and tolerability: No concerns
  - Phase II dose selected at 22 mg/m²
  - First patient in phase II study dosed in Dec 2018



### MIV-818: Nucleotide prodrug for the treatment of liver cancer



## Liver cancer focus: hepatocellular carcinoma (HCC) and intrahepatic cholangiocarcinoma

- HCC is the third leading cause of cancer-related deaths worldwide
  - Estimated new cases 2018: Asia: ~ 610,000; US: ~ 42,000; EU: ~ 82,000; Sweden: ~ 550
  - Orphan disease in Western markets, but one of fastest growing and most deadly cancers in US
  - High incidence in Asia including China Hepatitis B & C very common
  - o Five-year survival: 18%
  - o Genetically heterogeneous leading to limited effect of molecularly targeted therapies
- Intrahepatic cholangiocarcinoma is the second most common primary liver tumor
  - Medium survival is only twelve months
- Existing treatment options provide very little survival benefit

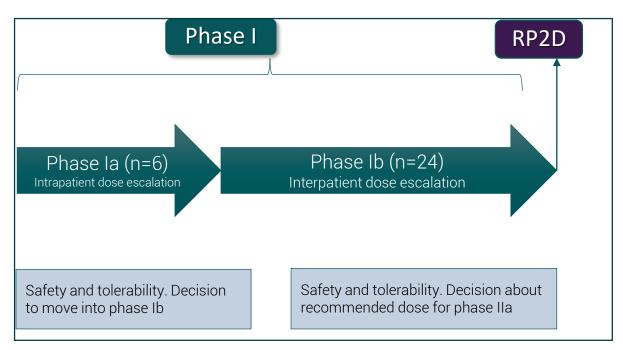


## MIV-818: prodrug for enhanced efficacy and safety in liver cancer (HCC) therapy - Phase I started in Q4 2018

#### Troxacitabine

 Clinically active but failed due to systemic dose-limiting toxicities

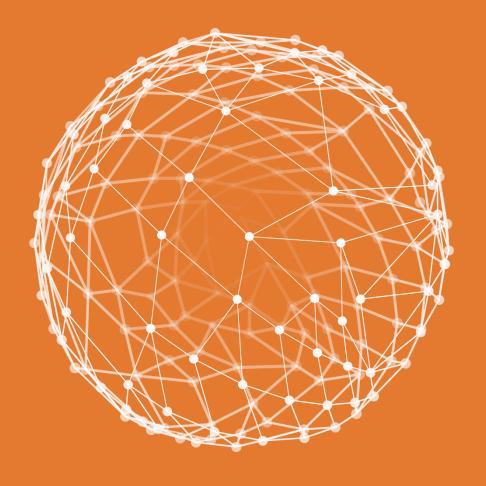




#### MIV-818

- Enhanced activity
- Selectivity for cancer
- Improved delivery to the liver
- Oral administration
- Limited systemic side effect

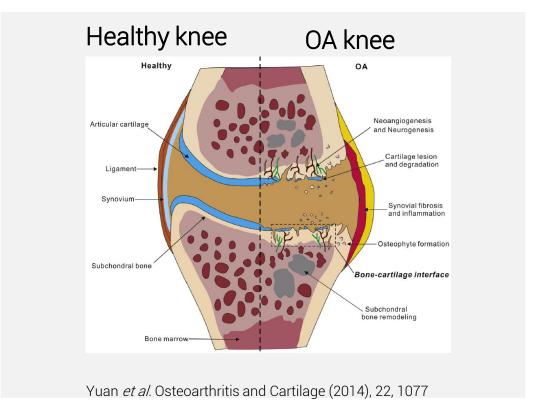
### MIV-711: Cathepsin K inhibitor with FDA fast track status



#### Osteoarthritis (OA): the most common form of joint disease

- Affects >30m adults in the US, and ~240m worldwide
- Prevalence increasing due to aging population and obesity epidemic
- Current treatments focus only on pain relief
- Large unmet medical need for a disease-modifying drug (DMOAD) with potential to slow, halt or reverse the progression of OA

Cathepsin K protease is involved in the breakdown of collagen I in both bone and collagen II in cartilage





## MIV-711: positive effects on joint structure and signals of benefit on clinical symptoms

- Study design (MIV-711-201): 3 arms, 26 weeks treatment
- Study design (MIV-711-202): 200 mg MIV-711, 26 additional weeks

#### MIV-711-201: Change from baseline vs week 26

	PBO n=80		n=80 200 mg MIV-711 QD
Femur bone area (mm²)	23.2	8.1	8.2
Cartilage thickness (mm)	-0.066	0.008	-0.017

- A trend consistently favoring MIV-711 arms in all predefined analyses of clinical outcomes, e.g. knee pain and knee function
- Safety and tolerability profile supporting advancement of MIV-711 as a disease-modifying OA drug candidate
- New US FDA guidelines in OA may enable pathway for accelerated regulatory approval



## Corporate information



#### Recent milestones

- Birinapant/Keytruda®: completion phase I study Q4 2018
- Birinapant/Keytruda®: start of phase II study Q4 2018
- MIV-818: Start of phase 1 study Q4 2018
- MIV-828: CD nomination Q4 2018

#### Near term value inflection points

- MIV-818: completion phase la study Q2 2019
- Birinapant/Keytruda®: futility analysis completed Q4 2019

