



# THE VALUATION EXPERTS

Identifying the Best Investment Model and  
Valuating Biosimilar Opportunities

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# Agenda



- **Valuation**
- **Valuation of biosimilar**
- **Strategic decision to maximize value**
- **Q&A**

# Venture Valuation



VENTURE VALUATION



**Independent assessment and valuation of Life Sciences companies / therapeutic products**

**Company, Deals & Investors Database  
Biotechgate.com**

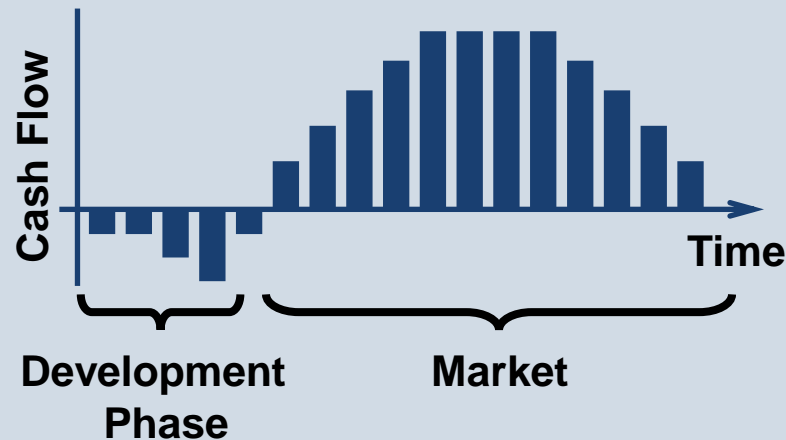


- Switzerland (HQ); Canada; UK; Singapore; India; China
- Global experience with 25 people
- Track record of over 350 valued companies / products
- Investor clients such as Novartis, GSK, Fraunhofer Gesellschaft, European Investment Bank; Company clients: Arpida/Evolva; 4SC;
- Product valuation for licensing deals

# rNPV Product Valuation



1. Development phase => investment  
Risk ( $r$ ) => success rate
2. Market phase => revenues  
Patent expiry => end of revenues  
(often no terminal value)
3. Discount / WACC => non-specific risk



# Five Step Process



Determine Cash Flows in **Development** Phase



Determine Cash Flows in **Market** Phase



Discount with **Discount rate**



Adjust for **Risk**



Sum discounted cash flows

# rNPV – Example

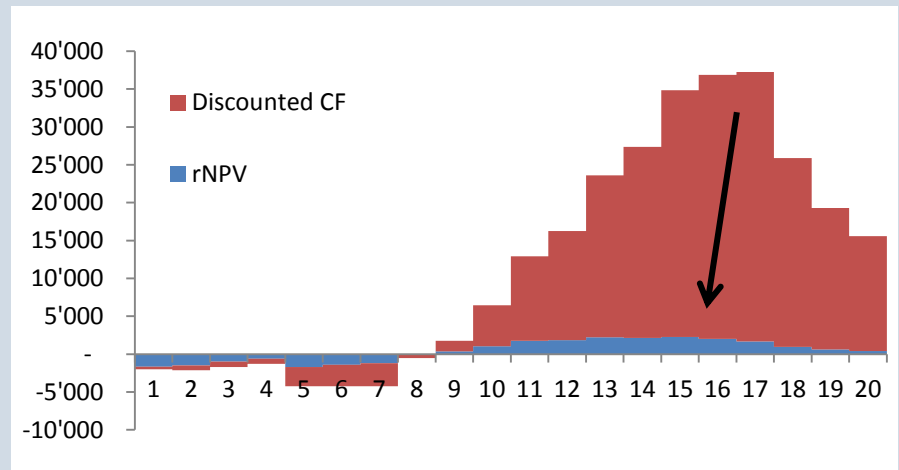
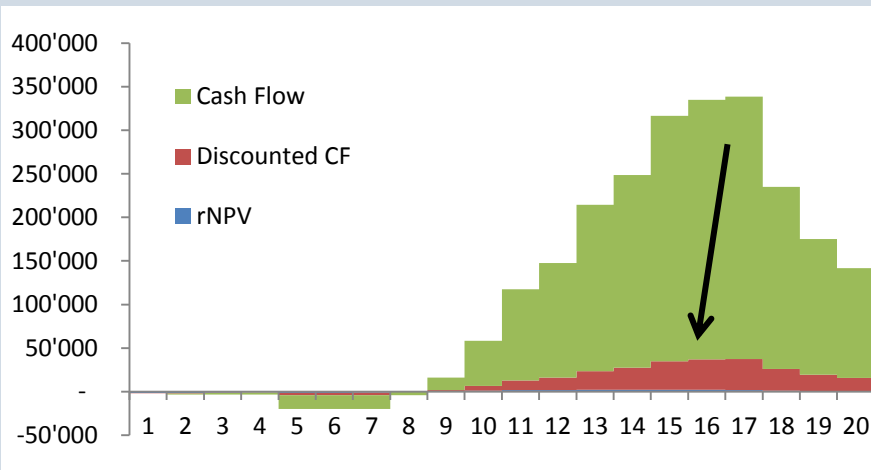


- Phase 1 product
- 15% discount rate
- 11% Probability of success (p1 to market)

⇒ **CF:** USD 2'182m

⇒ **DCF:** USD 216m

⇒ **rNPV:** USD 10m



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# Development Phase



## Innovative Biologics

- Determine cost and duration of clinical trials
- Manufacturing
- Regulatory affairs
- Long term animal tox. studies



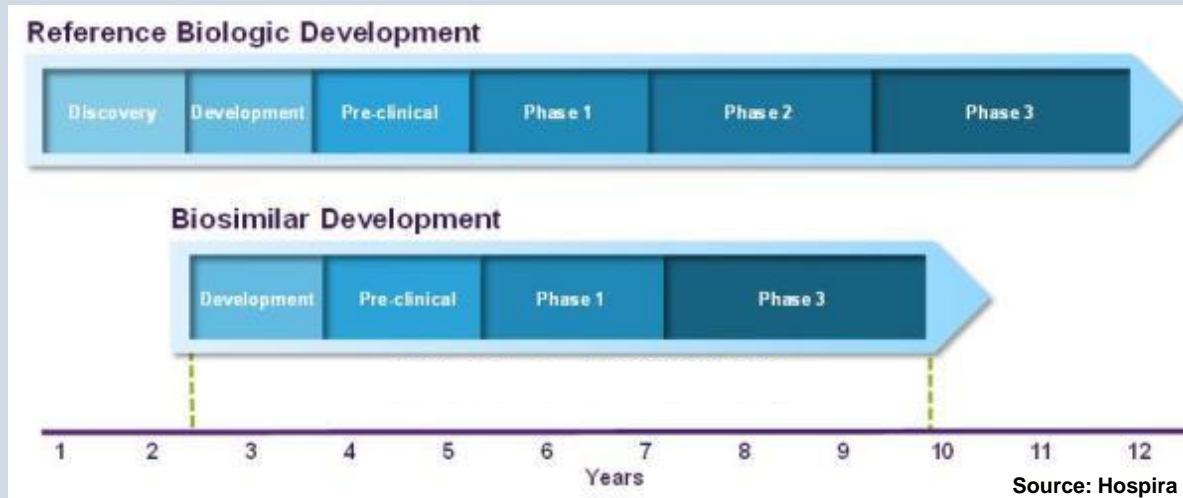
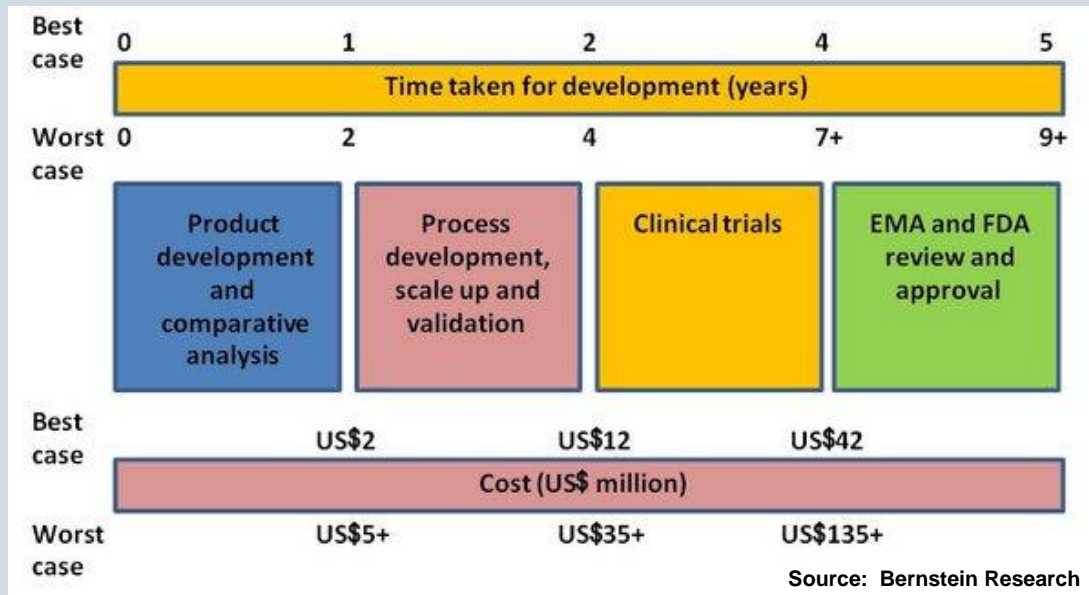
## Biosimilar

- Shorter development timelines / costs
- Finding patients for clinical trials
- Comparative trials => cost for original product





# Cost and Lead Times



USD +-1bn

USD 60 – 200m

# Reduced time to market



	Original product	Biosimilar
Phase I	12 month / 4m	12 month / 2 m
Phase II	36 month / 20m	n/a
Phase III	36 month / 120m	36 month / 60m
Approval	12 month / 8m	12 month / 6m
<b>Total</b>	<b>8 years / 152m</b>	<b>5 years / 68m</b>
	↓	↓
rNPV	USD 10m	USD 40m

# Market Phase



**Develop assumptions to predict the future market**

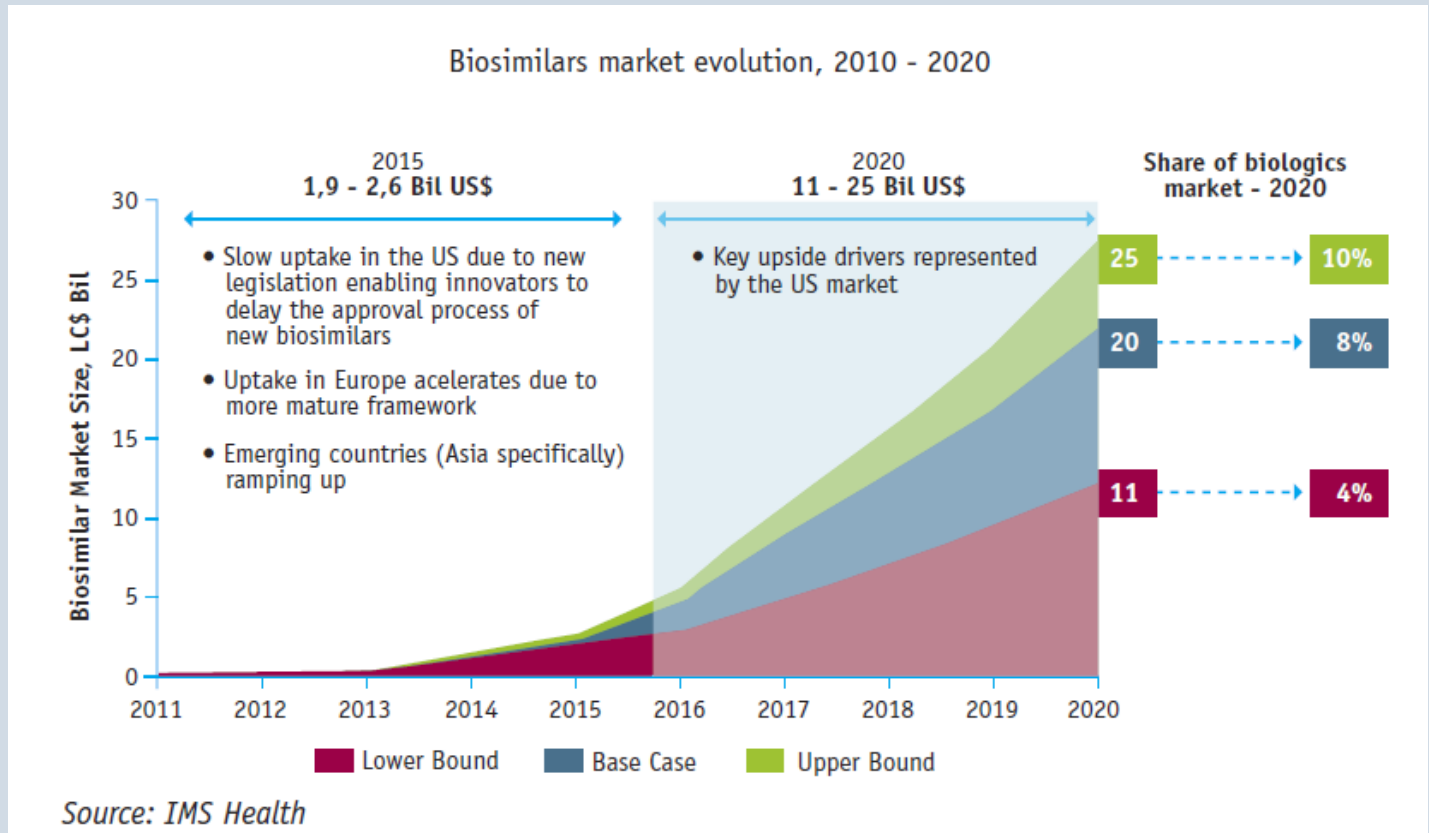


**Methods used:**

- Bottom-up approach
  - Based on primary market data
- Top-down approach
  - based on comparable products



# Market Phase

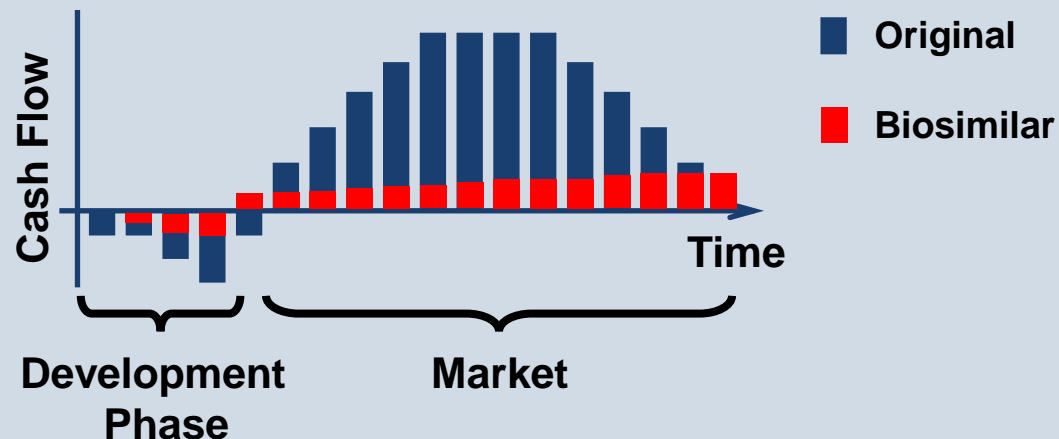


# Market Phase



## Biosimilar:

- Different adaption of Biosimilar (EU / US; Germany vs. rest of Europe)
- Uncertainty in future (reimbursement, incentives)
- Average price cut of 30%
- More patients? (price elasticity)
- Different penetration (commodity vs. differentiation)
- Competition (original product / biosimilar / biobetter)
- Exclusivity / no IP protection



# Reduced market



	Original product	Biosimilar
Peak sales (2031)	USD 983m	USD 164m
Life Cycle	Drop of sales after patent expiry	Growth of 3% per year
	↓	↓
rNPV	USD 10 m	<b>USD -13m</b>

# Discount rate



Cost of Equity / discount rate in rNPV:

- Early stage                    12% - 28%
- Mid stage                        10% - 22%
- Late stage                        9% - 20%
- Pharma                            below 10% (incl. debt)

Source. [www.biostrat.dk](http://www.biostrat.dk)

Cost of equity and non-development associated risks.

# Discount rate



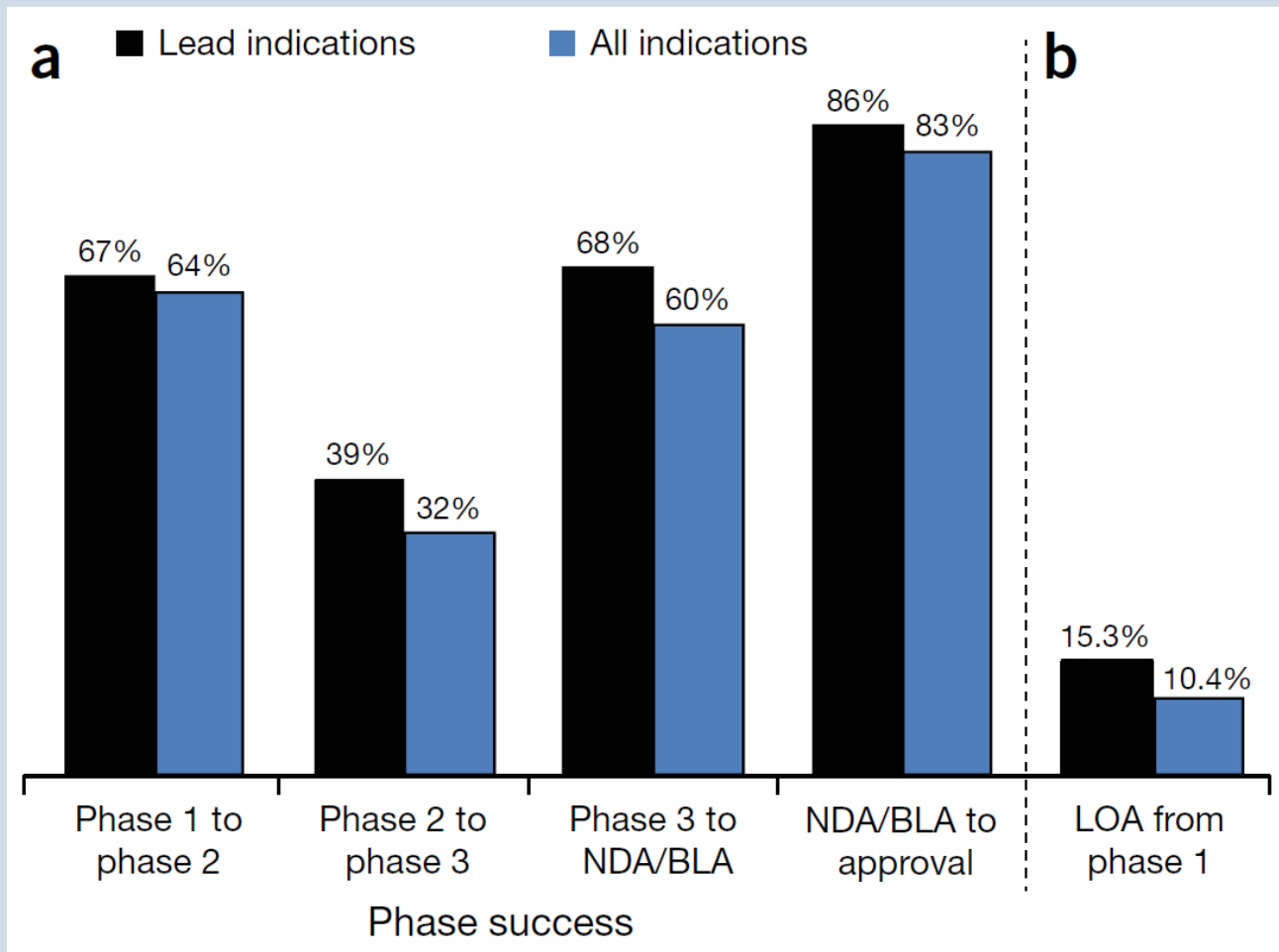
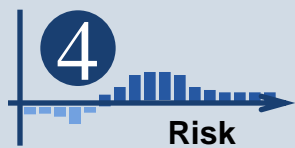
Used discount rate in rNPV:

- Biosimilar player => lower WACC;
- Generally higher uncertainty (+)

15% => USD 10m  
18% => USD 2m  
12% => USD 22m



# Adjust for risk (I)



Source: Nature Biotechnology; Clinical development success rates for investigational drugs; January 2014

# Adjust for Risk (II)

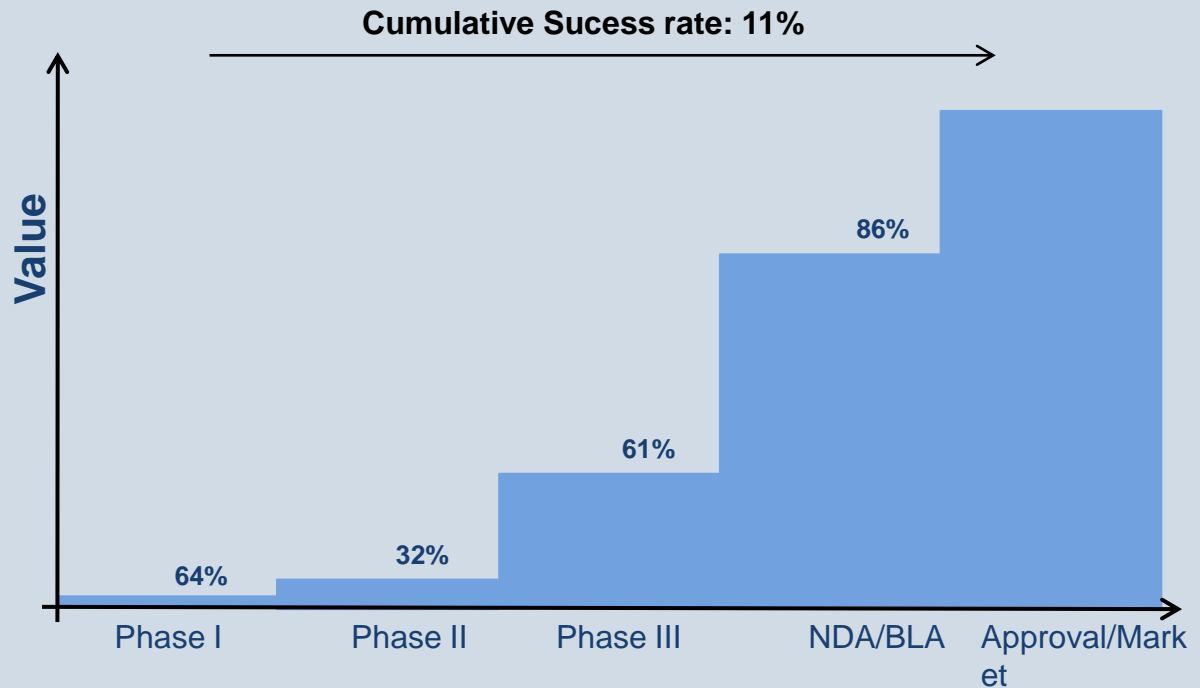
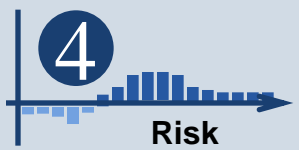


## The relation between Risk and Value

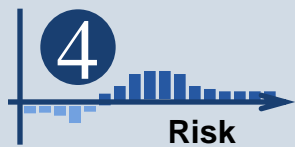
- Completion of a phase → Direct value increase



	Original	Biosimilar
889	889	889
649	649	649
167	167	167
24	95	49
10		



# Adjust for risk (III)

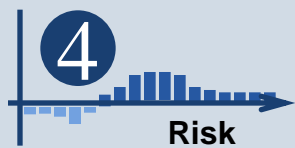


Used risk adjustment in rNPV:

- Biosimilar => lower risk (-)
- No phase II
- Individual adjustment

	Original product	Biosimilar
Phase I	64%	64%
Phase IIa/IIb	60% / 55%	100%
Phase III	61%	61%
Approval	86%	86%
<b>Cum. Success</b>	<b>11%</b>	<b>33%</b>
	↓	↓
rNPV	USD 10m	USD 49m

# Summary



	Original product	Biosimilar
Costs	152m	68m
Time to market	8 years	5 years
Sales 2031	USD 983m	USD 164m
Cum. Success	11%	33%
<b>rNPV</b>	<b>USD 10m</b>	<b>USD 13m</b>
rNPV after phase III	USD 649m	USD 179m

# Conclusion



- Valuation same approach as innovative drugs
  - Variation on
    - Timeline (+)
    - Development costs (+)
    - Market (-)
    - Attrition rate (+)
    - Discount rate (+/-)
- => Market / Competition / Pricing as high impact



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Thank you for listening!

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