

The parallel journeys from Academia to Company and from ITF to Scientific Advice

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EUROPEAN MEDICINES AGENCY
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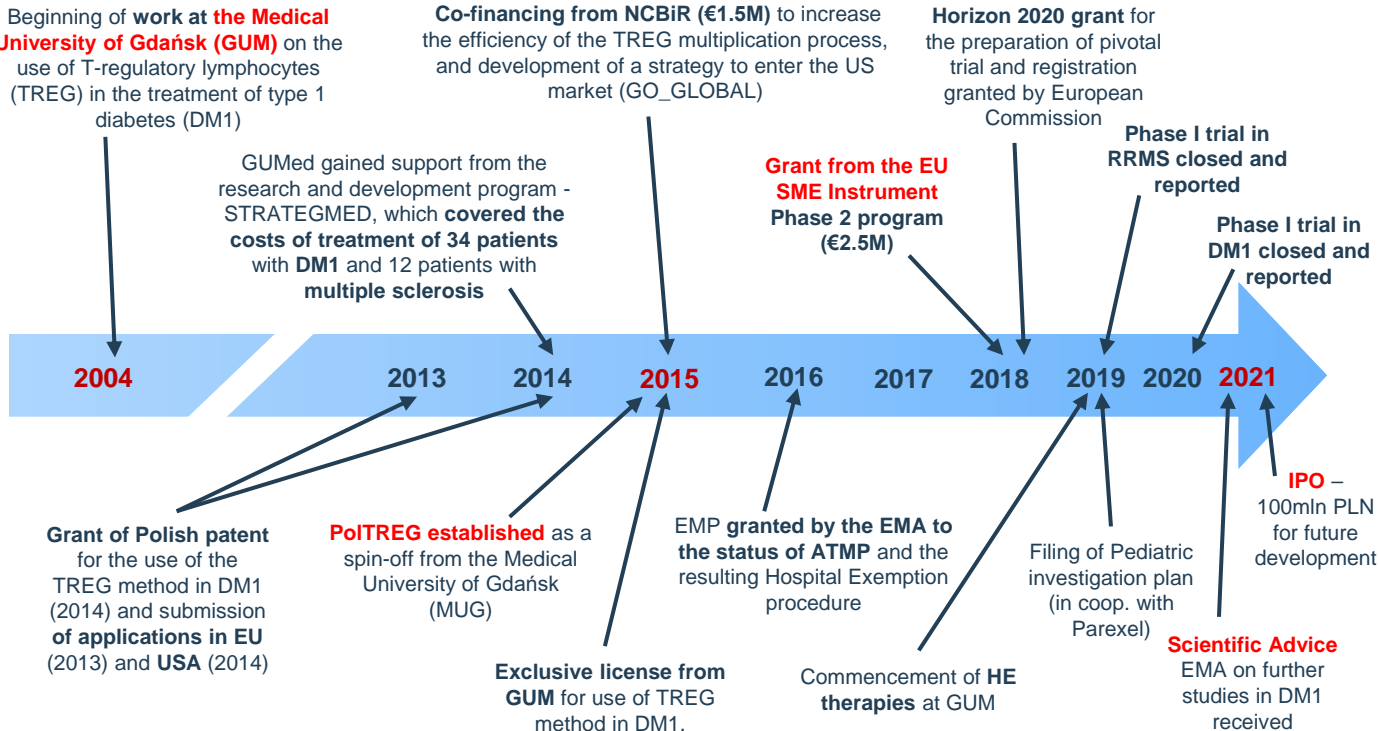


H2020-EIC-SMEInst-2018-2020-2



Action to Focus and Accelerate Cell-based Tolerance-inducing Therapies (A FACTT)

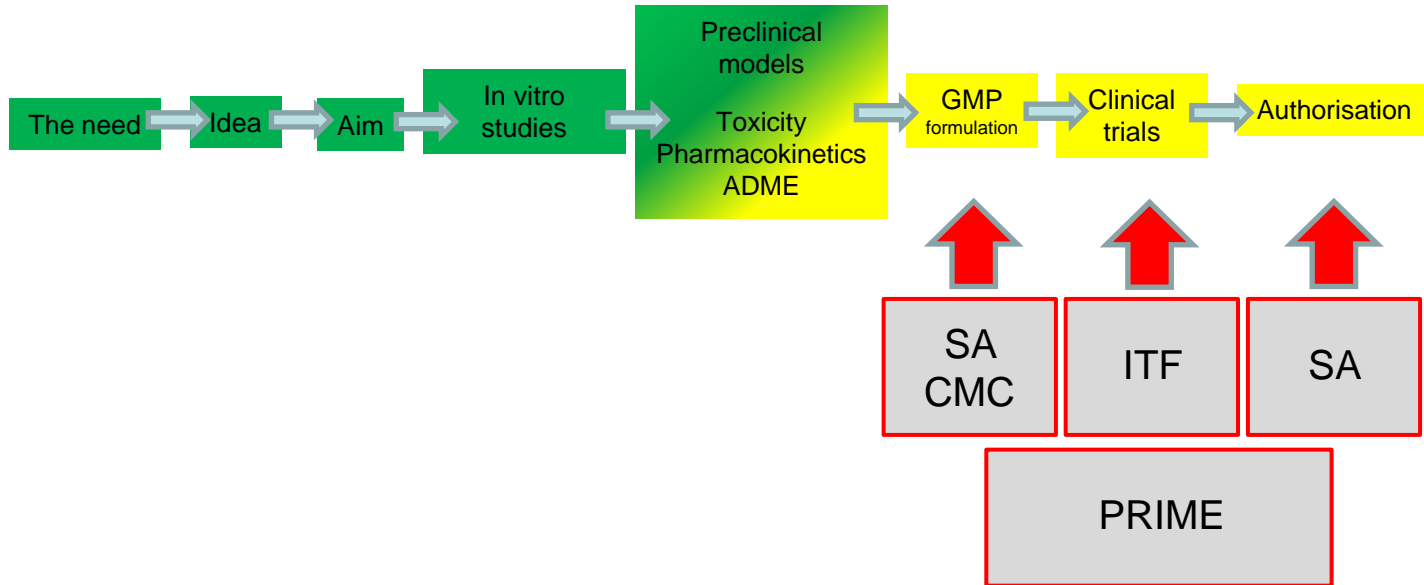
From Academia to Company



Pipeline with clinical-stage Tregs projects

Therapeutic area	Indication	Research	Preclinical	Phase I	Phase II	Phase III	Regulatory	Next expected milestones
Type 1 Diabetes	Newly diagnosed patients (Stage 3 T1D)	PTG-007+ / rituximab CD3+CD4+CD25+CD127-FoxP3+ Tregs						Marketing authorisation
	Presymptomatic patients (Stage 2 T1D)	PTG-007 CD3+CD4+CD25+CD127-FoxP3+Tregs						Registration of the trial and regulatory steps H2'2022
Multiple Sclerosis	Relapsing-remitting	PTG-007+ / tecfidera CD3+CD4+CD25+CD127-FoxP3+Tregs						Clinical trial protocol Phase II Q3'2022
	Primary progressive	PTG-007 CD3+CD4+CD25+CD127-FoxP3+Tregs						Clinical trial protocol Phase II Q3'2022
Autoimmunity	Autoimmune diseases (T1D, MS, RA, transplantology, allergology, etc)	PTG-020 (Tregs 2.0) Antigen Specific Tregs	CAR-Tregs Genetically modified					Validation of the product under GMP conditions, preclinical tests

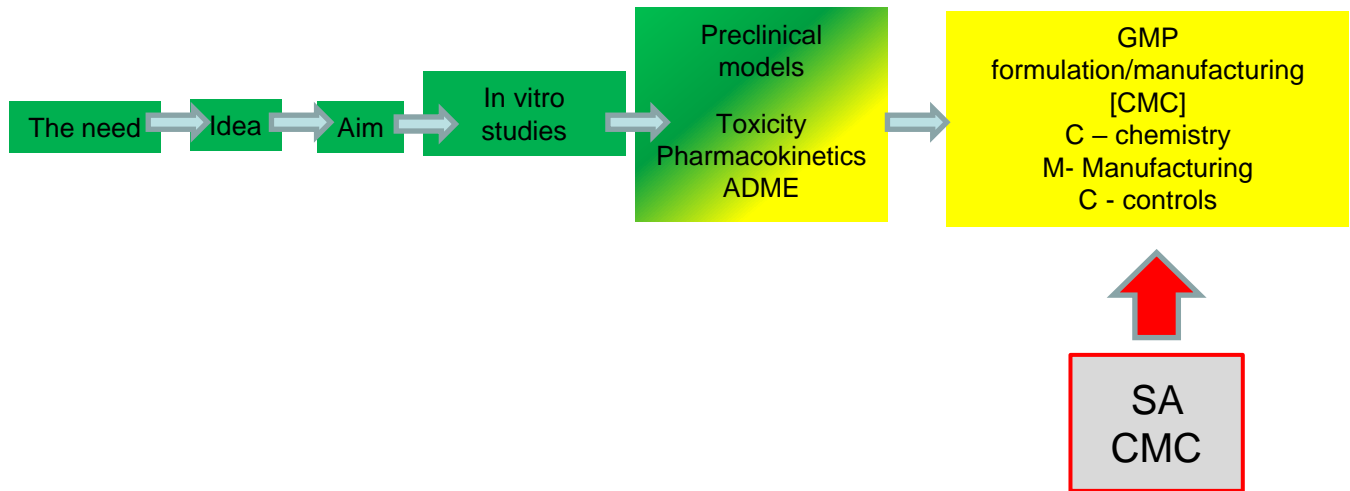
Natural history of a drug



Creating GMP formulation of the drug requires funds. Manufacturing can be 10-100 times more costly than the research-use version

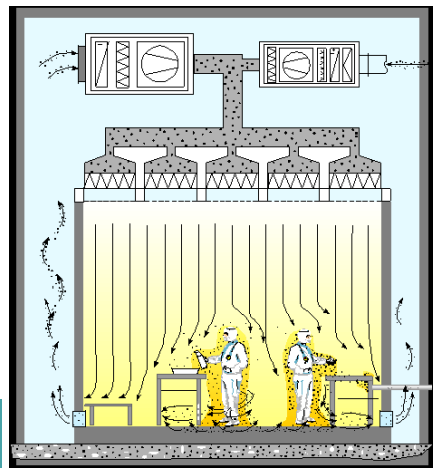
Manufacturing plant requires even more funds

There is no second chance, so it is better to ask before



Poltreg's Pharma Plant

- cGMP Lab – certified manufacturing and product
- Validated conditions



4.000 m²

And **2.100 m²** of lab space

15 automatic manufacturing lines

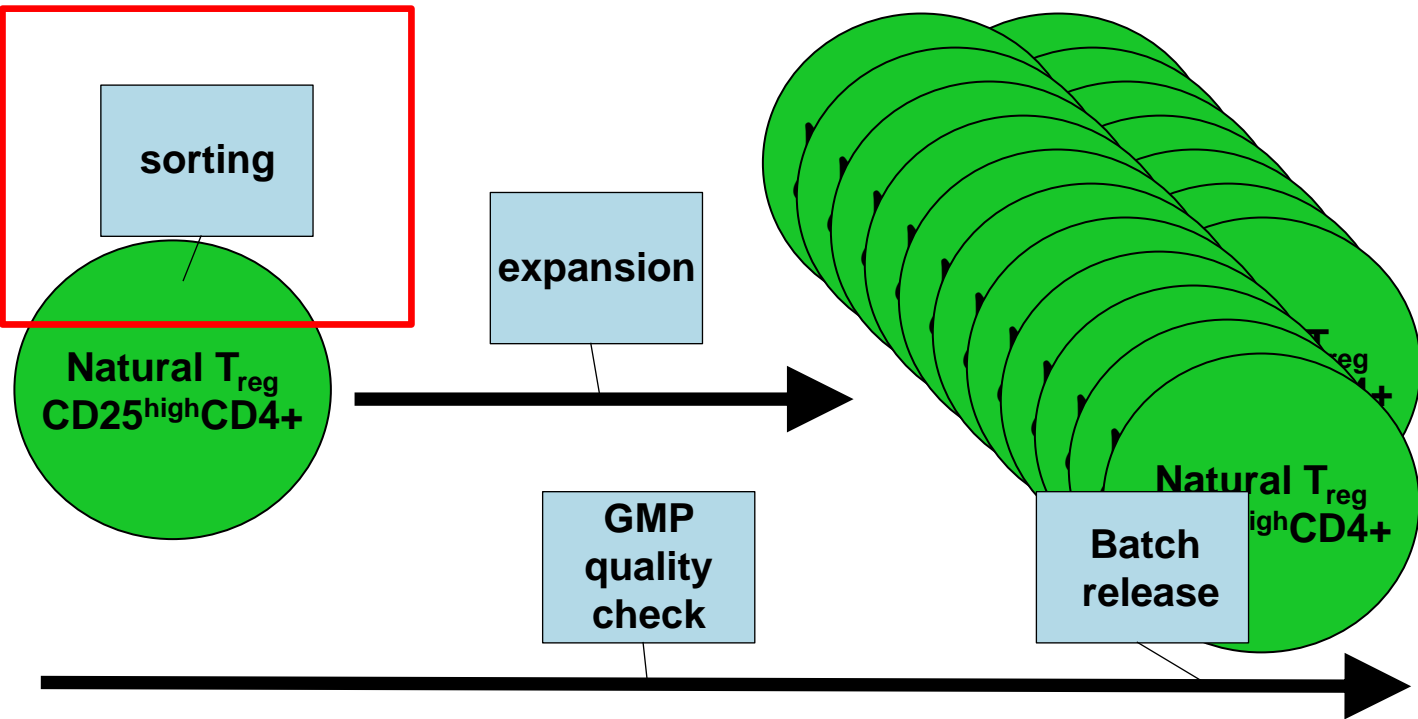
10 mIn Euro

Which standard?

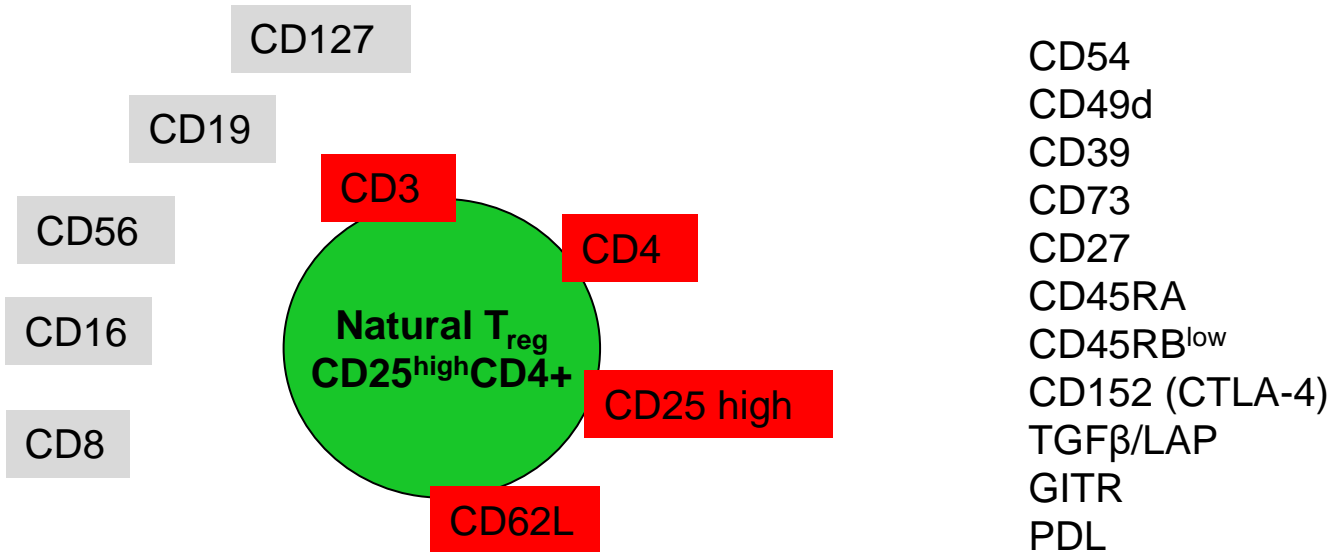
What is necessary?



ATMP- grade product with laboratory tools?



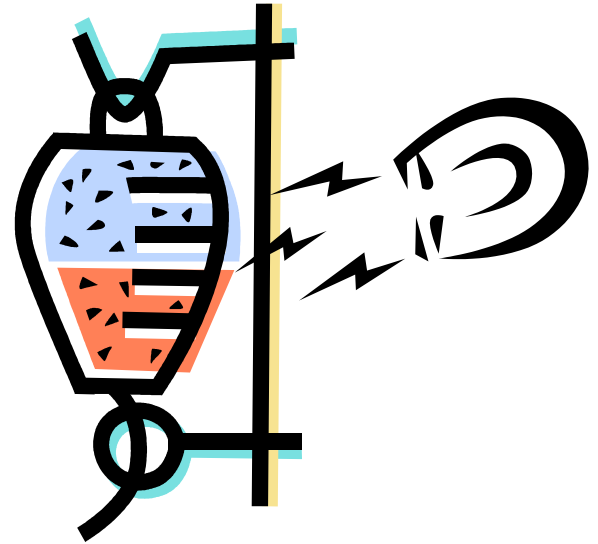
ATMP- grade product with laboratory tools?



The best found phenotype:

CD3⁺ CD4⁺ CD25^{high} CD127⁻ Lin⁻ doublet⁻

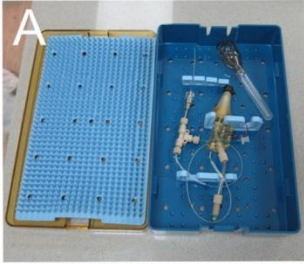
ATMP- grade product with laboratory tools?



Single-use bags

Trzonkowski P *et al.* Cytometry A 2009

FACS sorter or immunomagnetic sorting?



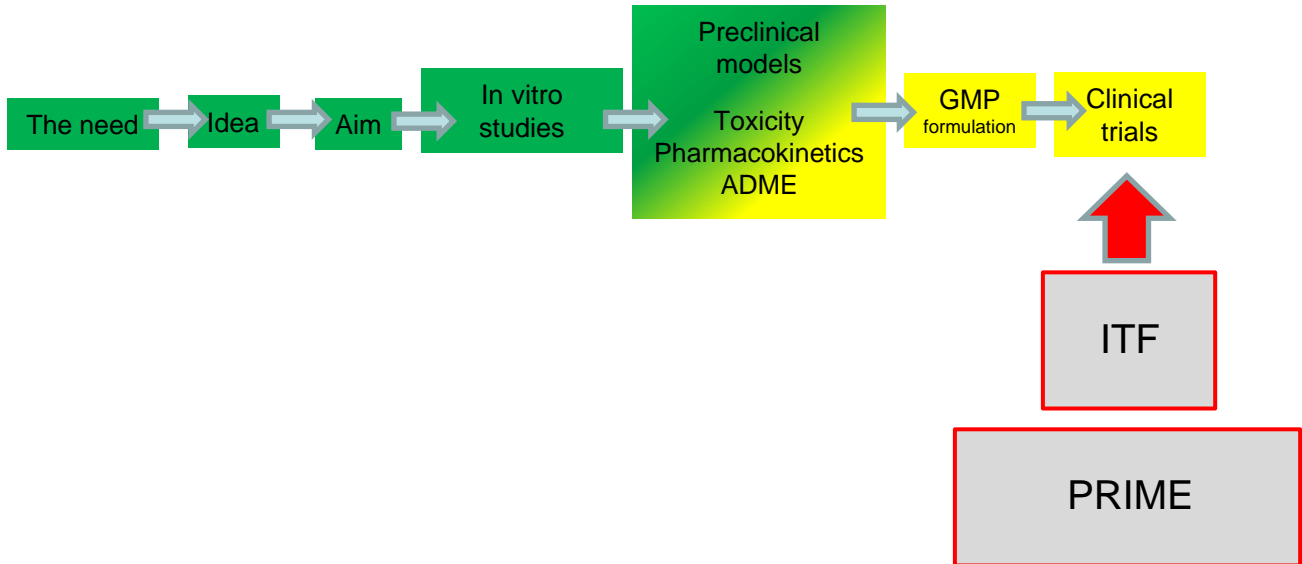
**Single-use
lines**

**HEPA
enclosure**

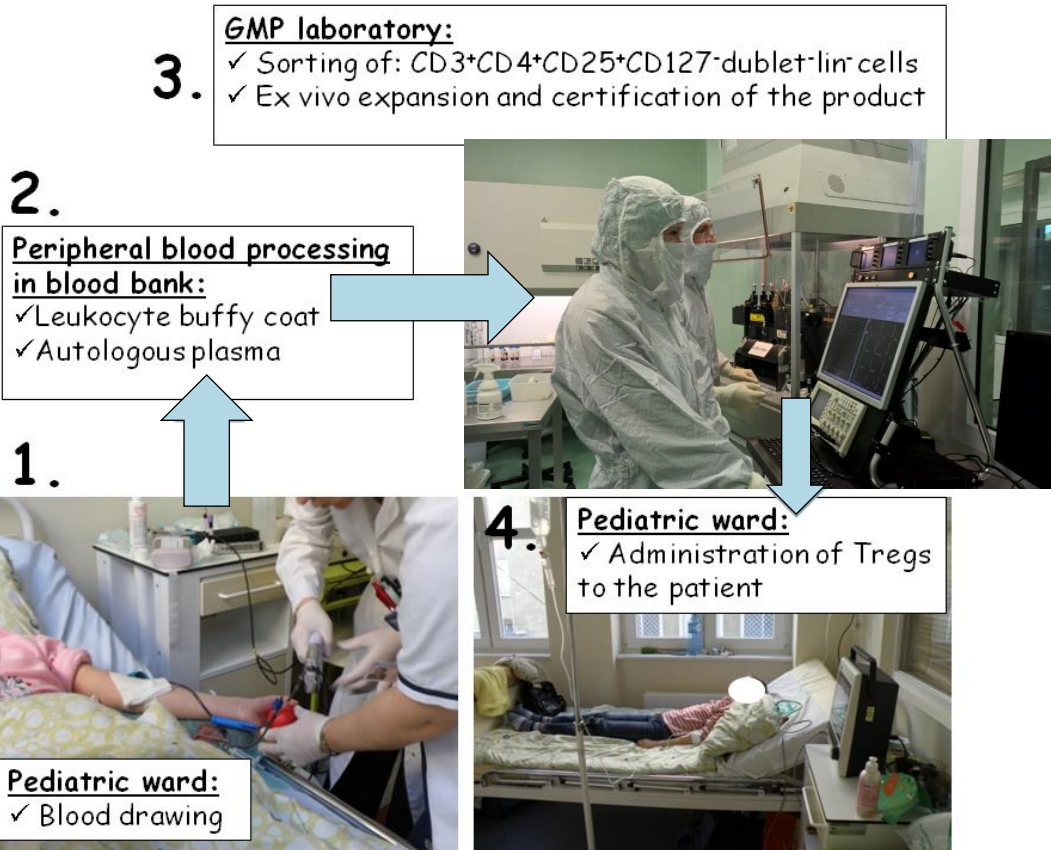


Clinical trials are long

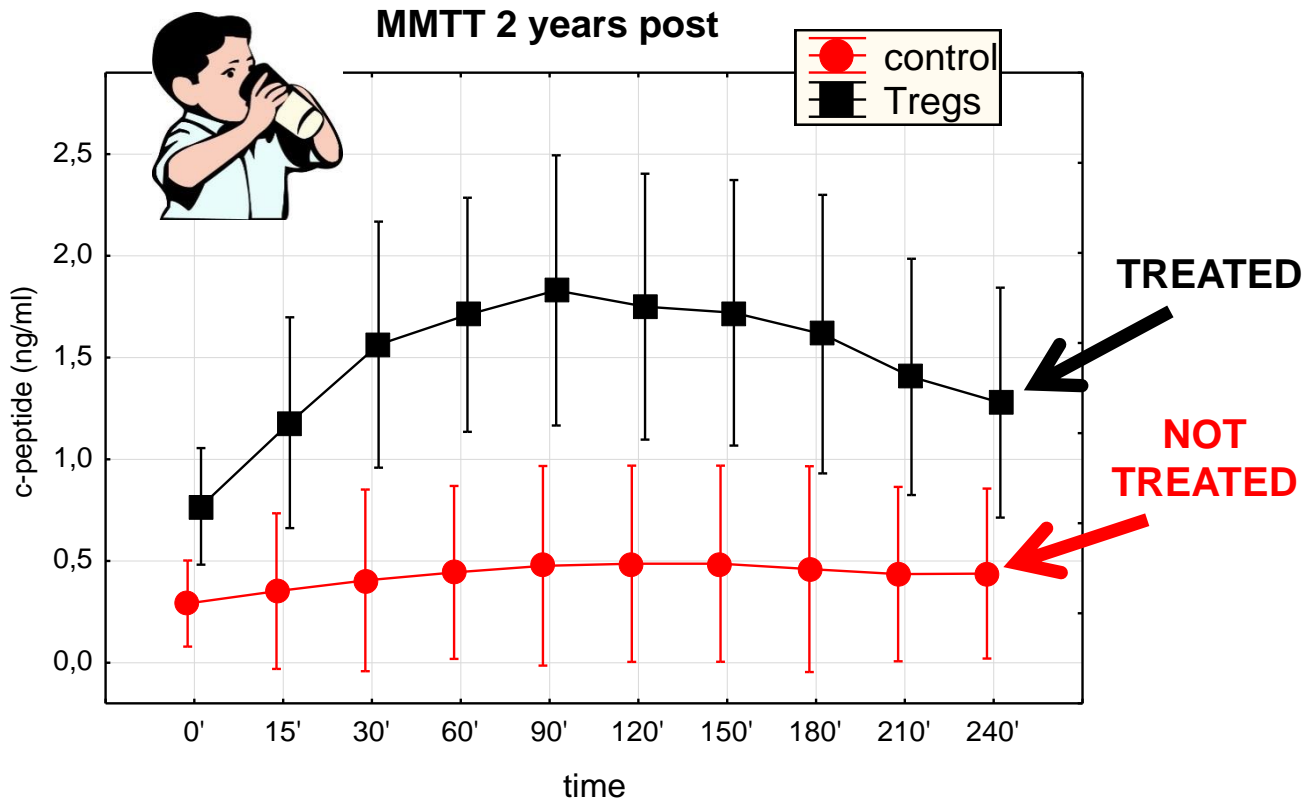
→ It is good to know where to go....Is it worth going there?



TregVac 1.0



TregVAC1.0 - Safe and efficacious



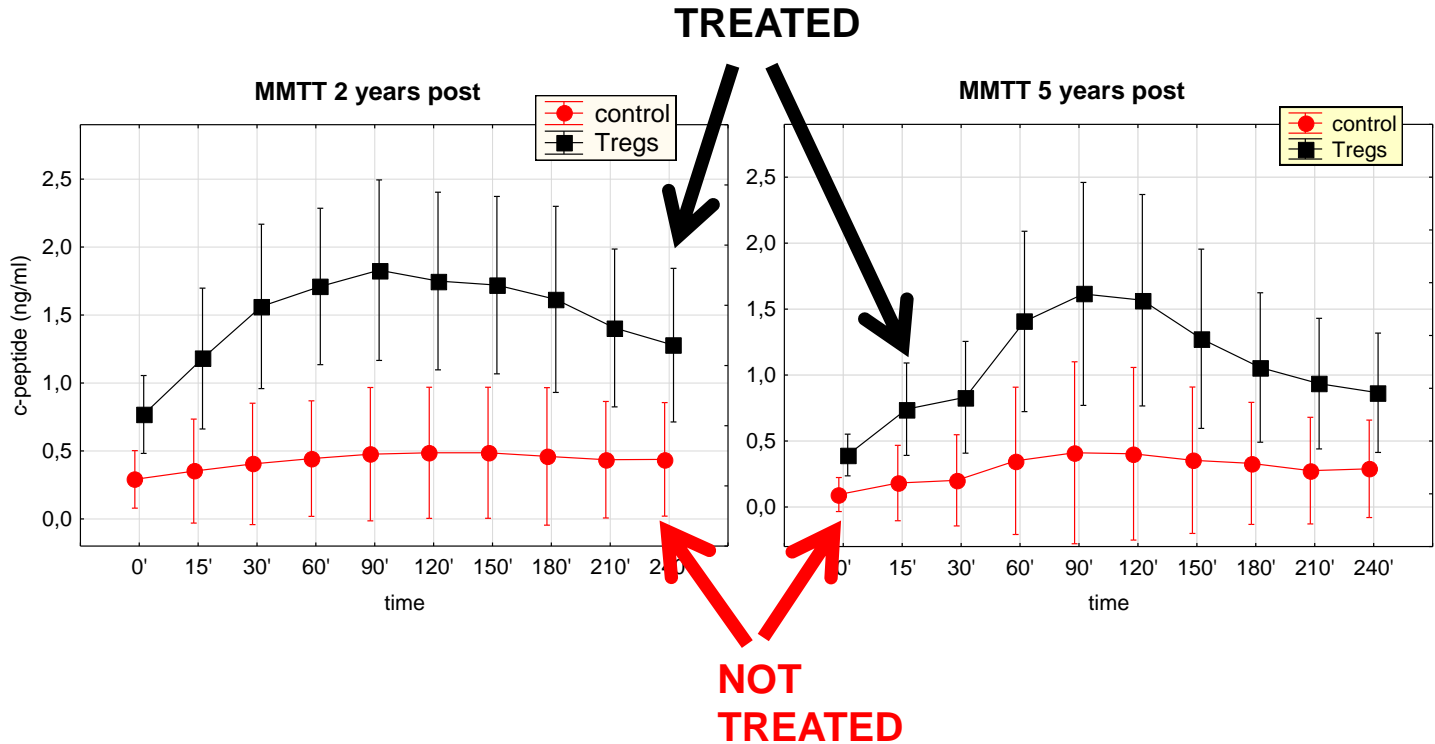
Marek-Trzonkowska P *et al.* J Transl Med. 2016

Two years follow-up?

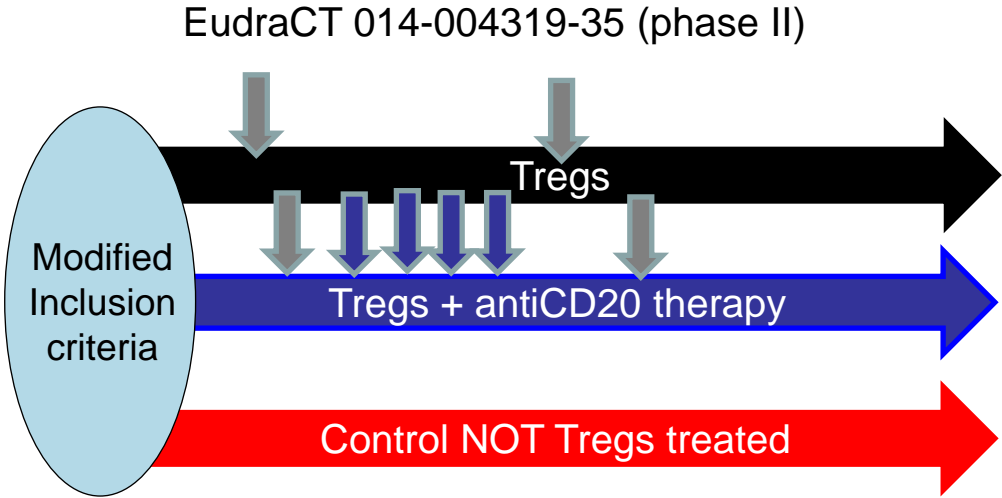
- Too short
- Too few patients

A gray rectangular box with a red border containing the text "ITF".A gray rectangular box with a red border containing the text "PRIME".

Results – long-term efficacy

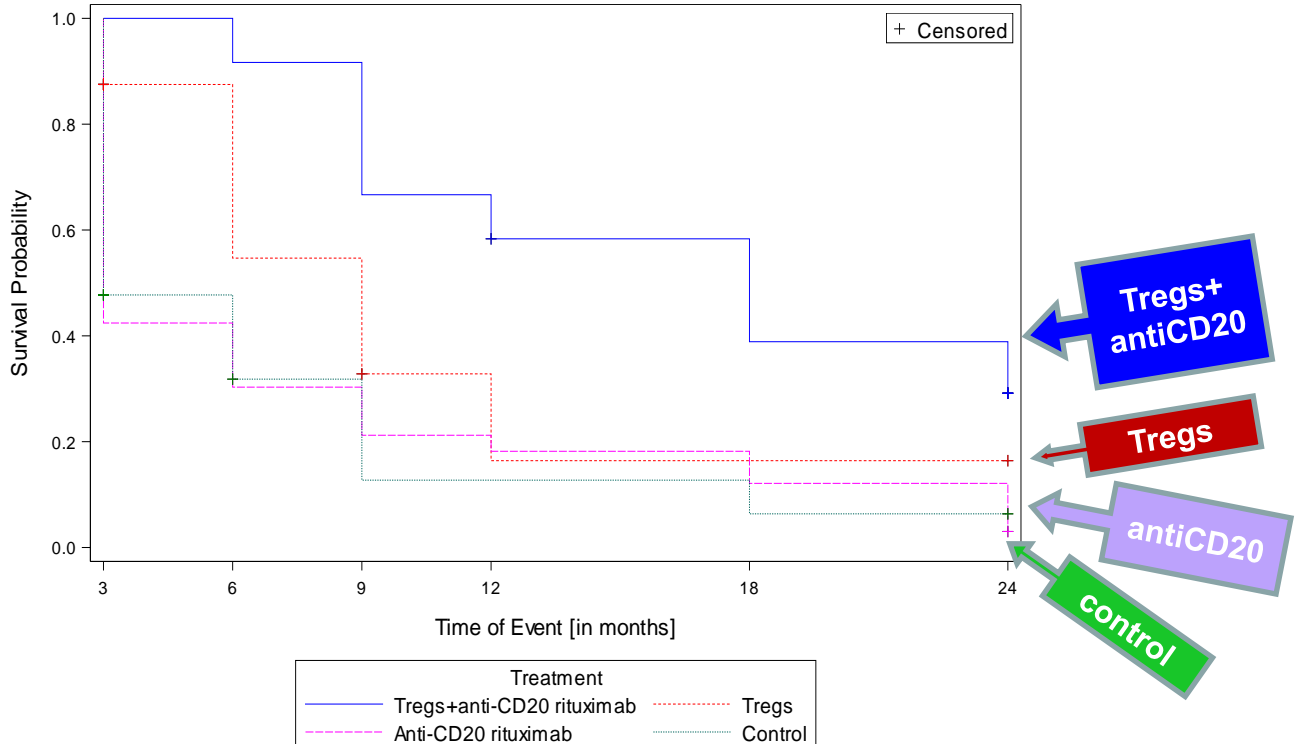


TregVac 2.0



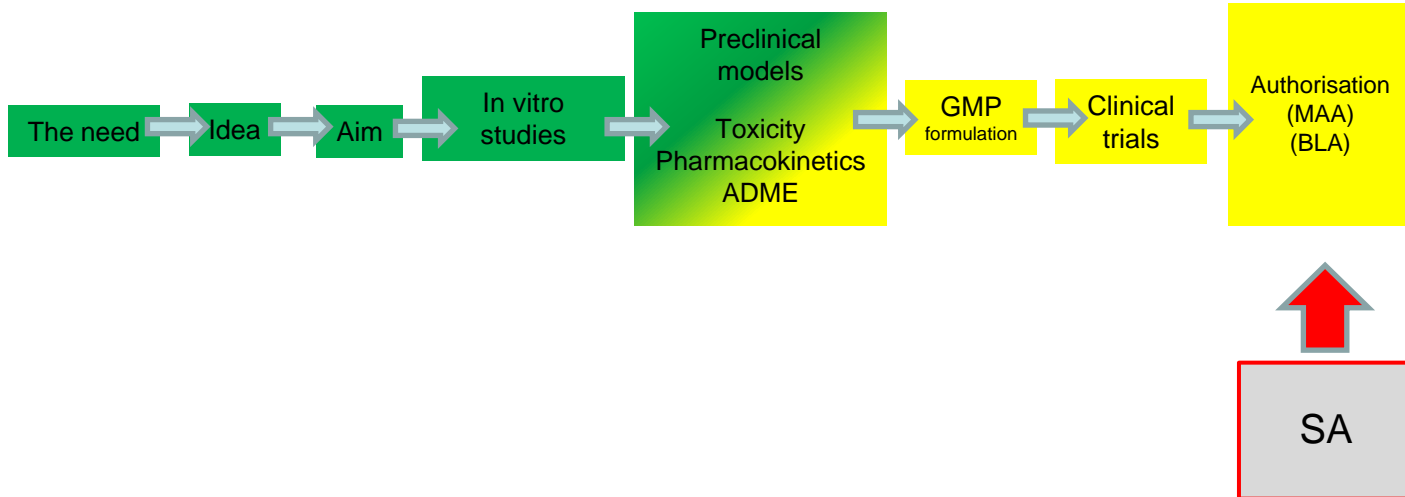
Remission

Kaplan-Meier Plot of First Loss of Remission

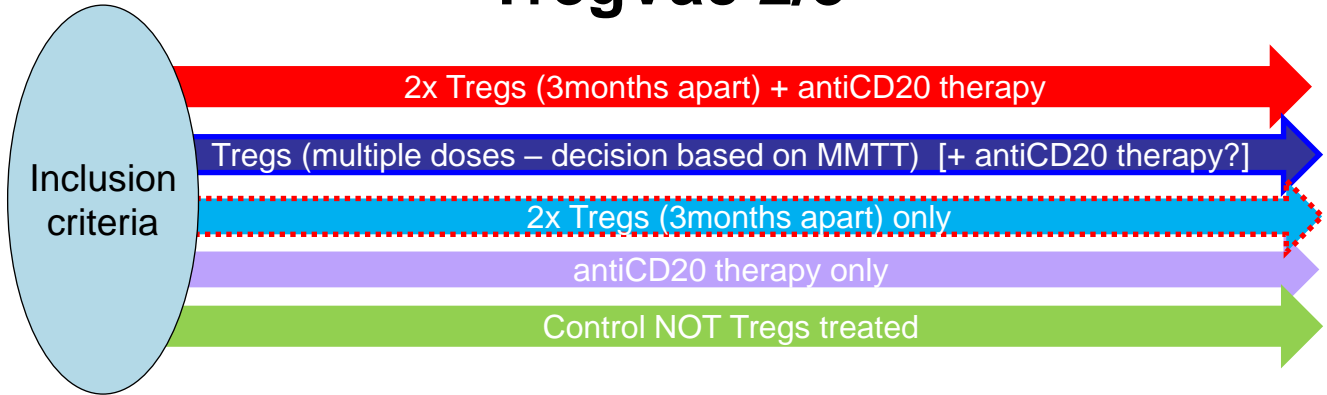


Zielinski *et al.* DOM 2022

- Is my drug safe for my patients?
- Is my drug efficacious?
- Will my patients buy my drug (health technology assessment)?



TregVac 2/3



- **Inclusion criteria** allows including only the patients in a very early phase of type 1 diabetes, mainly: **fasting c-peptide above 0.8ng/ml** and at least **100% increase** in c-peptide levels after the challenge **in MMTT**
- **Five arms:**
 - **ARM 1** – two doses of TREGS 3 months apart (2 x 30x10⁶ Tregs per kg b.w.) and four doses of anti-CD20 (rituximab) in between (375 mg/m² at days: +14, +22, +29 and +36)
 - **ARM 2** – multiple doses of TREGS (30x10⁶ Tregs per kg b.w. per dose) – decision based on MMTT (?) and four doses of anti-CD20 (rituximab) in between (375 mg/m² at days: +14, +22, +29 and +36) – add antiCD20?
 - **ARM 3a** – two doses of TREGS 3 months apart (2 x 30x10⁶ Tregs per kg b.w.)
 - **ARM 3b** – four doses of anti-CD20 (rituximab) (375 mg/m² at days: +14, +22, +29 and +36)
 - **ARM 4** – control group treated with insulin only

5
years
follow
up

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Thank you - Dziękuję

