AGEX THERAPEUTICS

Precision Reprogramming of Human Aging

Partial Reprogramming: Implications for Aging & Cancer

NYSE American: AGE

June 8, 2023

Forward Looking Statements

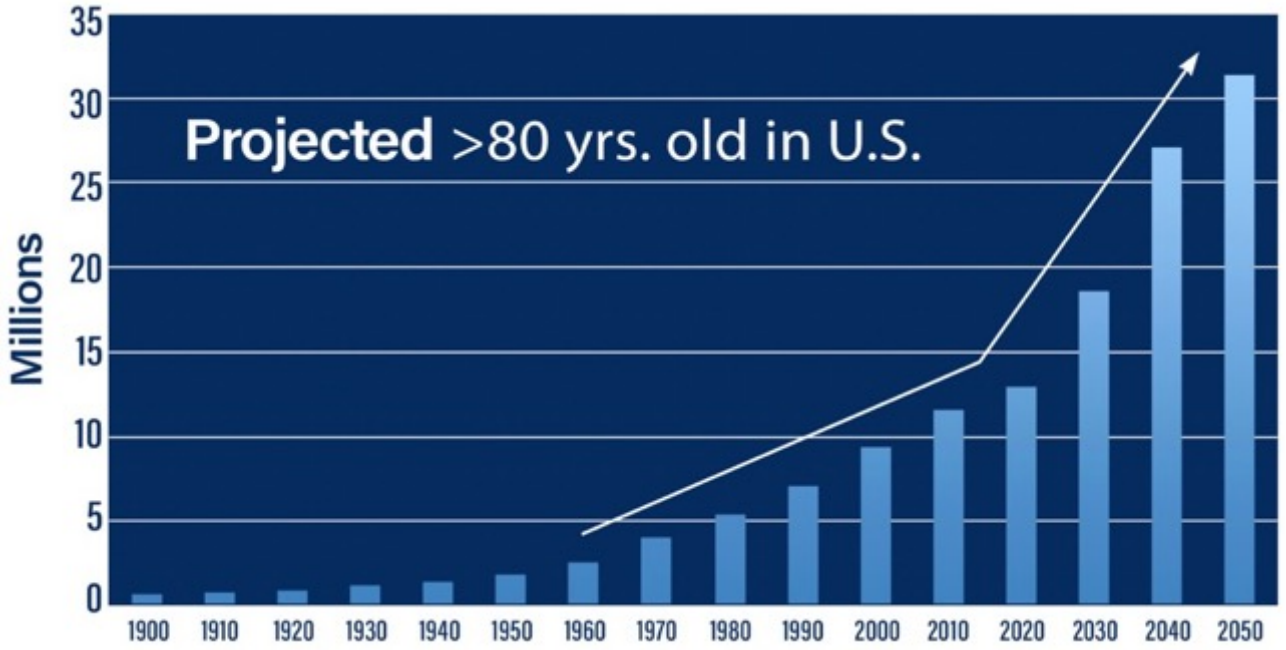
The matters discussed in this presentation include forward looking statements which are subject to various risks, uncertainties, and other factors that could cause actual results to differ materially from the results anticipated. Such risks and uncertainties include but are not limited to the success of Reverse Bioengineering and its parent company AgeX Therapeutics and its affiliates in developing new stem cell-based products and technologies; results of clinical trials of such products; the ability of Reverse and AgeX and its licensees to obtain additional FDA and foreign regulatory approval to market products; competition from products manufactured and sold or being developed by other companies; the price of and demand for such products; the ability of Reverse and AgeX and its subsidiaries to maintain patent and other intellectual property rights; and the ability of Reverse and AgeX to raise the capital needed to finance its current and planned operations. Any statements that are not historical fact (including, but not limited to statements that contain words such as "will," "believes," "plans," "anticipates," "expects," "estimates") should also be considered to be forward-looking statements. As actual results may differ materially from the results anticipated in these forward-looking statements they should be evaluated together with the many uncertainties that affect the business of Reverse and AgeX and its other subsidiaries, particularly those mentioned in the cautionary statements found in AgeX's Securities and Exchange Commission filings. Reverse and AgeX disclaims any intent or obligation to update these forward-looking statements.

AGEX THERAPEUTICS

Aging: The Demographic Trend of Our Time

Opportunity: A powerful new technology addressing the demand

- ~80% of $2.5T health care costs in U.S. associated with chronic disease
- The elderly commonly have two or more chronic degenerative diseases
- Induced Tissue Regeneration (iTR™) technology has the potential to reverse developmental aging and induce regeneration in numerous tissues of the body
- iTR research uncovers pan-cancer applications for both Tx and Dx



U.S. Census Bureau

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The Evolution of Aging: Antagonistic Pleiotropy

Concept is that nature selected for gene expression that confers a survival benefit early in life, but late in life results in aging and mortality of the soma

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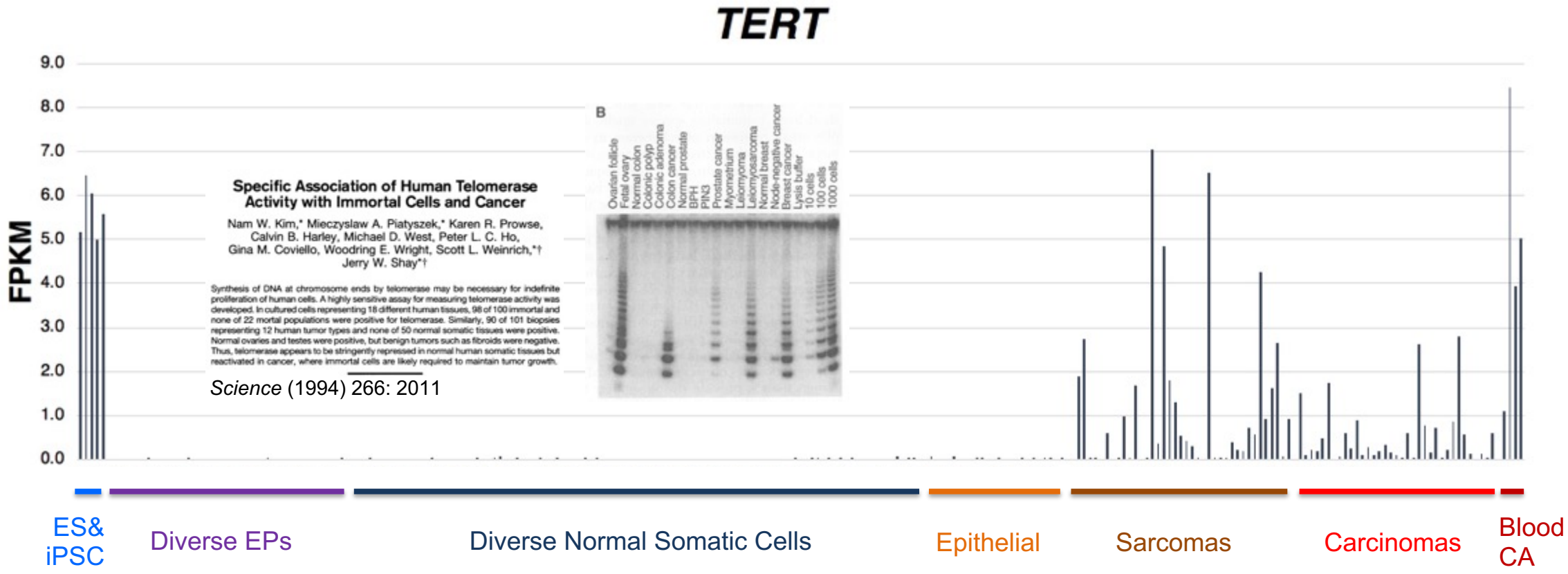
Somatic Restriction

Expression of Telomerase in Normal Somatic Cells & Cancer



AGEX THERAPEUTICS

Reprogramming Cellular Aging

Unrestricted
Immortal
Germ-Line

PT ⬇ *TERT* Cellular aging

iPSC

Reprogramming (reversing) developmental aging using defined genes:
(*SOX2, LIN28, MYC, OCT4, NANOG, etc.)*

Regen. Med. (2010) 5(3)

AGEX THERAPEUTICS

Tissue Regeneration

Unrestricted
Immortal
Germ-Line

PT Immortality — Cellular aging

EFT Regeneration

Example of regeneration remaining on in somatic cells

AGEX THERAPEUTICS

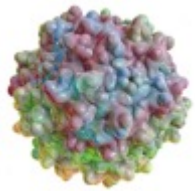
Induced Tissue Regeneration (iTR™)

∞ Unrestricted Immortal Germ-Line

PT Immortality — Cellular aging

EFT Regeneration — Repression of Regeneration

iTR — DR-iTR reprogramming (reversing) developmental aging only to regenerative state



iTR Viral Vector

AGEX THERAPEUTICS

Timing of Mouse Emb-> Fetal Transition (EFT)

Experimental

Confocal Microscopic Analysis of Scarless Repair in the Fetal Rat: Defining the Transition

Steven R. Beanes, M.D., Fei-Ya Hu, D.D.S., Chia Soo, M.D., Catherine M. H. Dang, M.D., Mark Urata, D.D.S., M.D., Kang Ting, D.M.D., D.M.Sc., James B. Atkinson, M.D., Prosper Benhaim, M.D., Marc H. Hedrick, M.D., and H. Peter Lorenz, M.D.

Los Angeles, Calif.

Plast. Reconstr. Surg. 2002 Jan;109(1):160-70.

wound harvest was used for controls. The wounds were fixed and stained with hematoxylin and eosin, antibody to type I collagen, and Sirius red for confocal microscopic evaluation. No E14 rat fetuses survived to wound harvest. Wounds created on E16 fetal rats healed completely and without scarring. E16 fetal rat hair follicle formation and collagen architecture was similar to that of normal, non-wounded skin. Wounds created on E18 fetal rats demonstrated slower healing; only 50 percent were completely healed at 72 hours compared with 100 percent of the E16 fetal rat wounds at 72 hours. Furthermore, the E18 wounds healed with collagen scar formation and without hair follicle formation. Confocal microscopy demon-

AGEX THERAPEUTICS

Timing of Mouse Emb-> Fetal Transition (EFT)

Data For Carnegie Stages Comparison Graph (Species/Days)

Species	Stage	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Human[2]	Days	20	22	24	28	30	33	36	40	42	44	48	52	54	55	58
baboon[3]	Days	23	25	27	28	29	30	31	33	35	37	39	41	43	45	47
monkey[4]	Days	21	22	25	28	29	30	32	34	36	37	38	40	42	44	46
marmoset[5]	Days	57		60		64		67				74				
mouse[6]	Days	9	9.5	10	10.5	11	11.5	12	12.5	13	13.5	14	14.5	15	15.5	16
rat[7]	Days	10.5	11	11.5	12	12.5	13	13.5	14	14.5	15	15.5	16	16.5	17	17.5
hamster[8]	Days	10	10.5	11	11.5	12	12.5	13	13.5	14	14.5	15	15.5	16	16.5	17
guinea pig[9][10]	Days	14.5	15	15.5	17	18	19	20	21	22	23	24	25	26	27	29
rabbit[11]	Days	8	8.5	9.5	10.5	11	12	12.5	13.5	14	14.5	15.5	16	16.5	17	18
sheep[12]	Days	15	16	17.5	18.5	19.5	20.5	22	23	24.5	25.5	27.5	29.5	30	33	
pig[13]	Days	14	15	16	17	18	19	20.5	21.5	23	24	25.5	27.5	29	30.5	32.5
chicken[14]	Days	1	1.5	2	2.25	2.5	3	3.25	3.75	4.75	5.5	6.25	7.25	7.75	8.5	10
dog	Days						27	28	29	30	34	36	37			
bat[15]	Days				40		44	46	50	54	60		70		80	

Rat Transition in skin:
(16.5-18.5 days)

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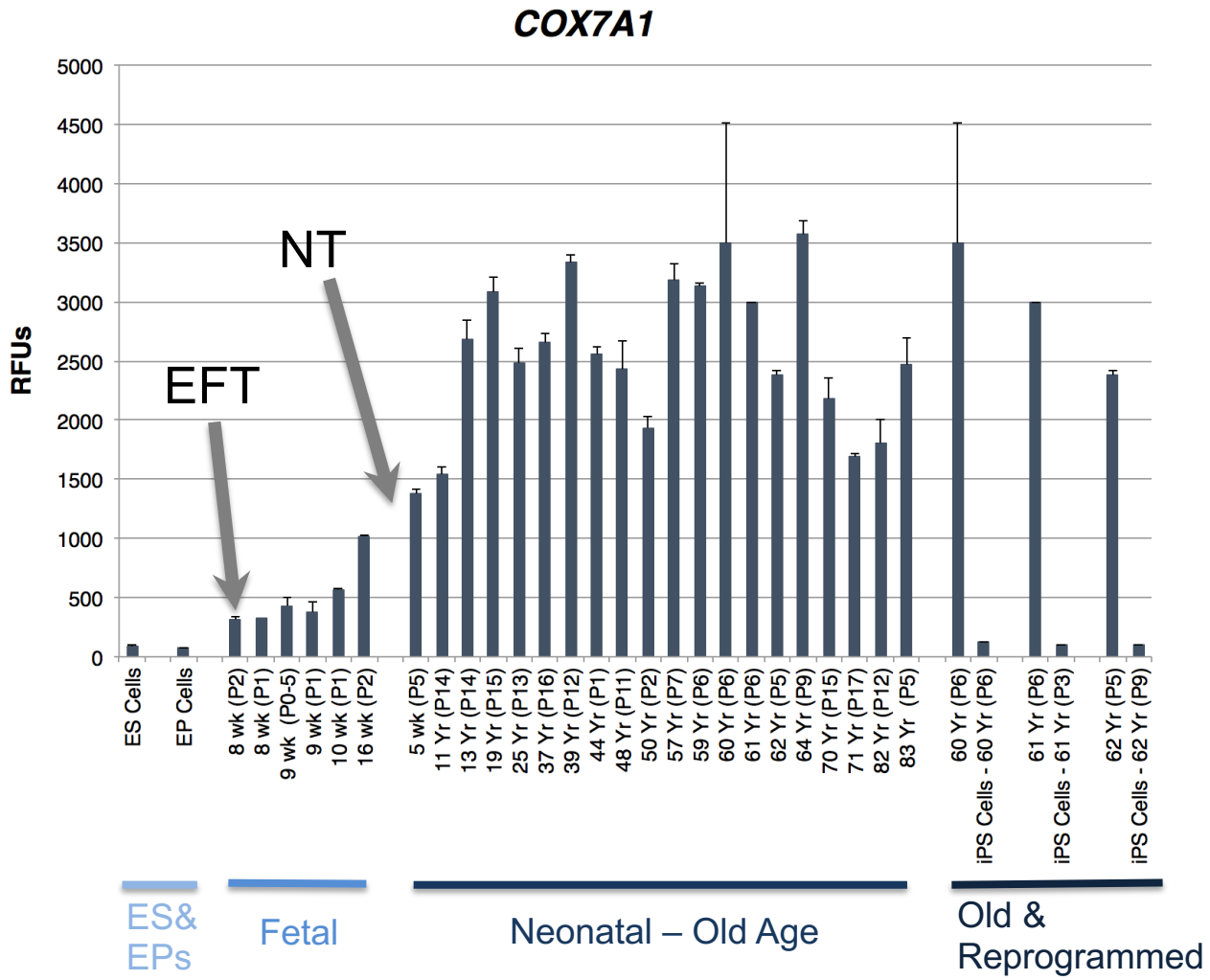
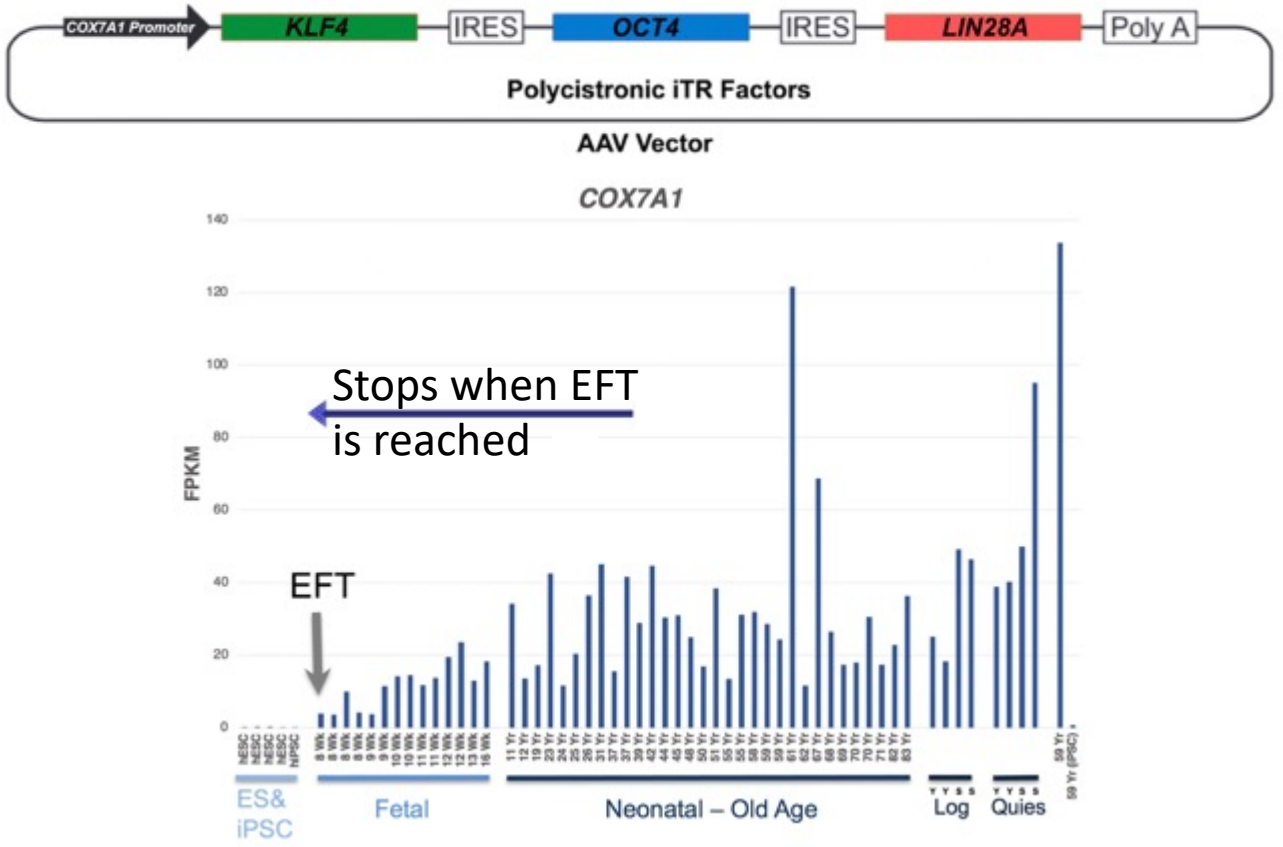
COX7A1 in Fibroblasts Throughout Development & Aging



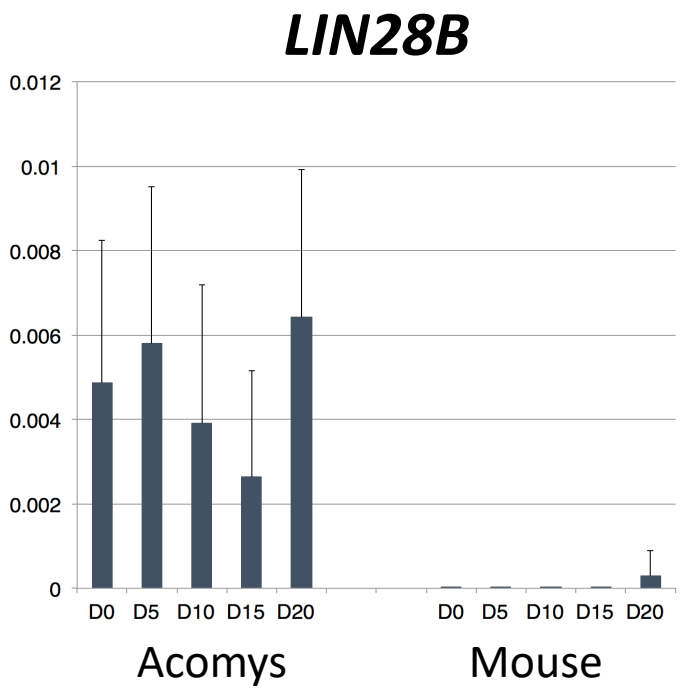
Precise Regulation: DR-iTR

Our proprietary Developmentally-Regulated (DR-iTR) precisely regulates reprogramming genes off with cellular resolution after iTR is reached

iTR Viral Vector



iTR – Segmental Example



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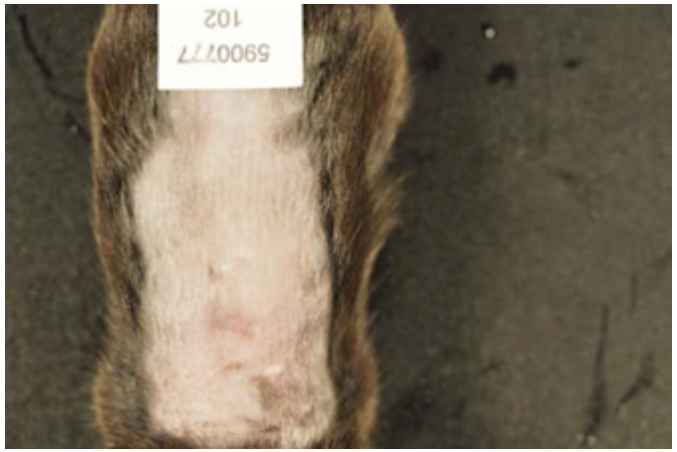
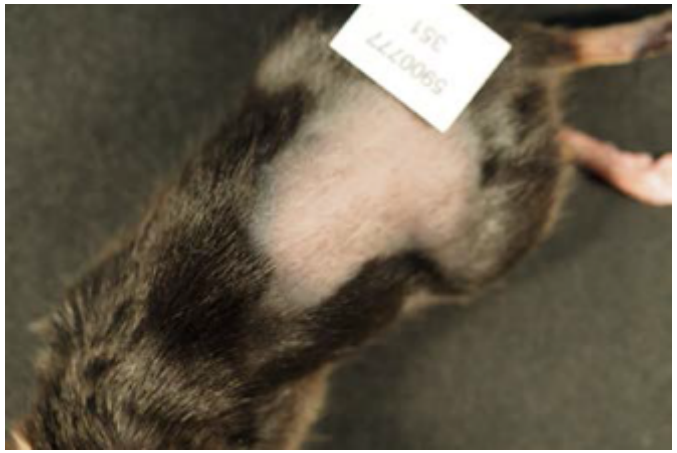
Segmental Reprogramming of Hair Regeneration



WT Control

***Cox7a1* -/-**



***Lin28a* +**

***Cox7a1* -/- and *Lin28a* +**

TESTING FACILITY:
Charles River Laboratories

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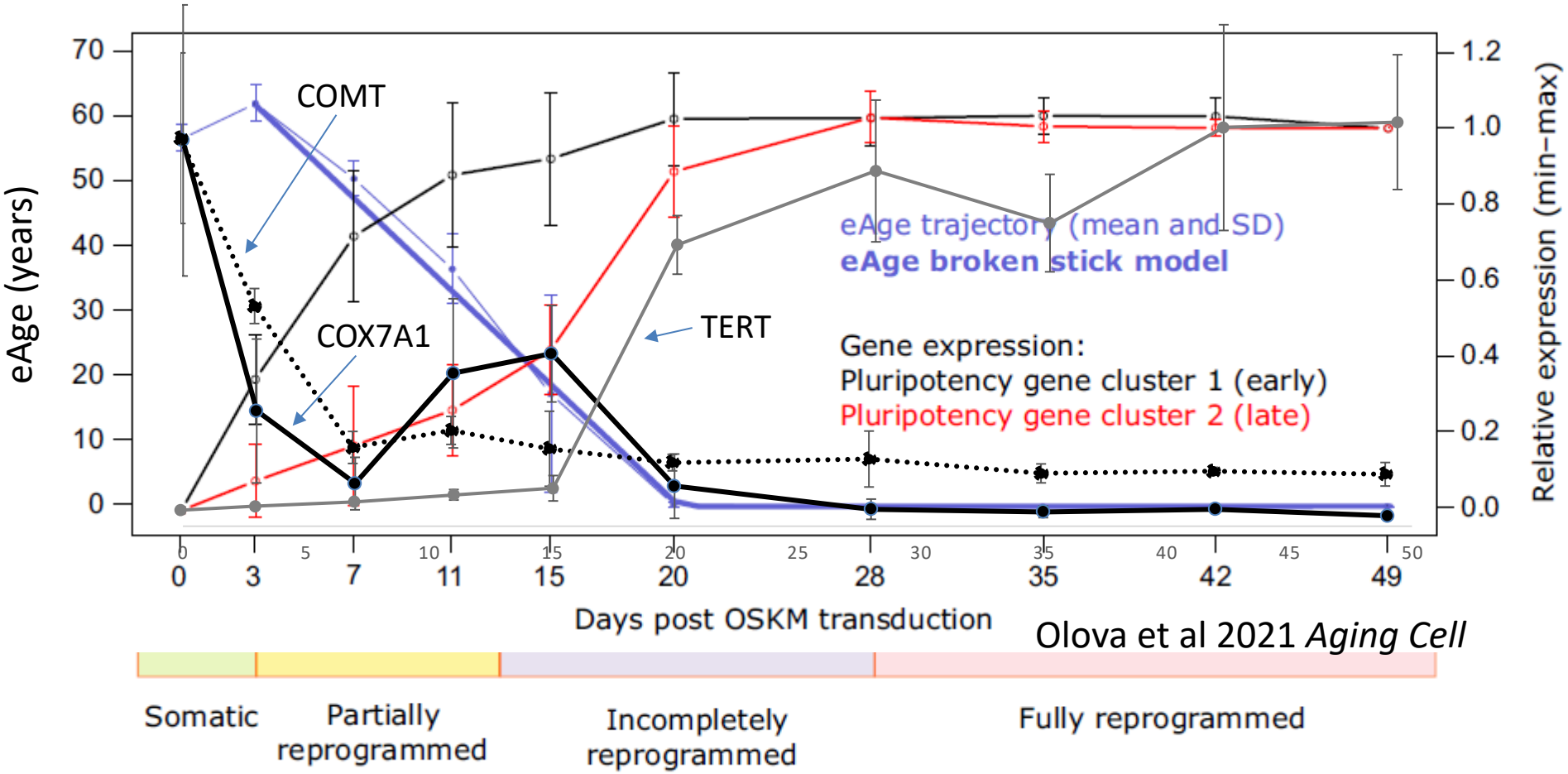
iTR without iPSCs

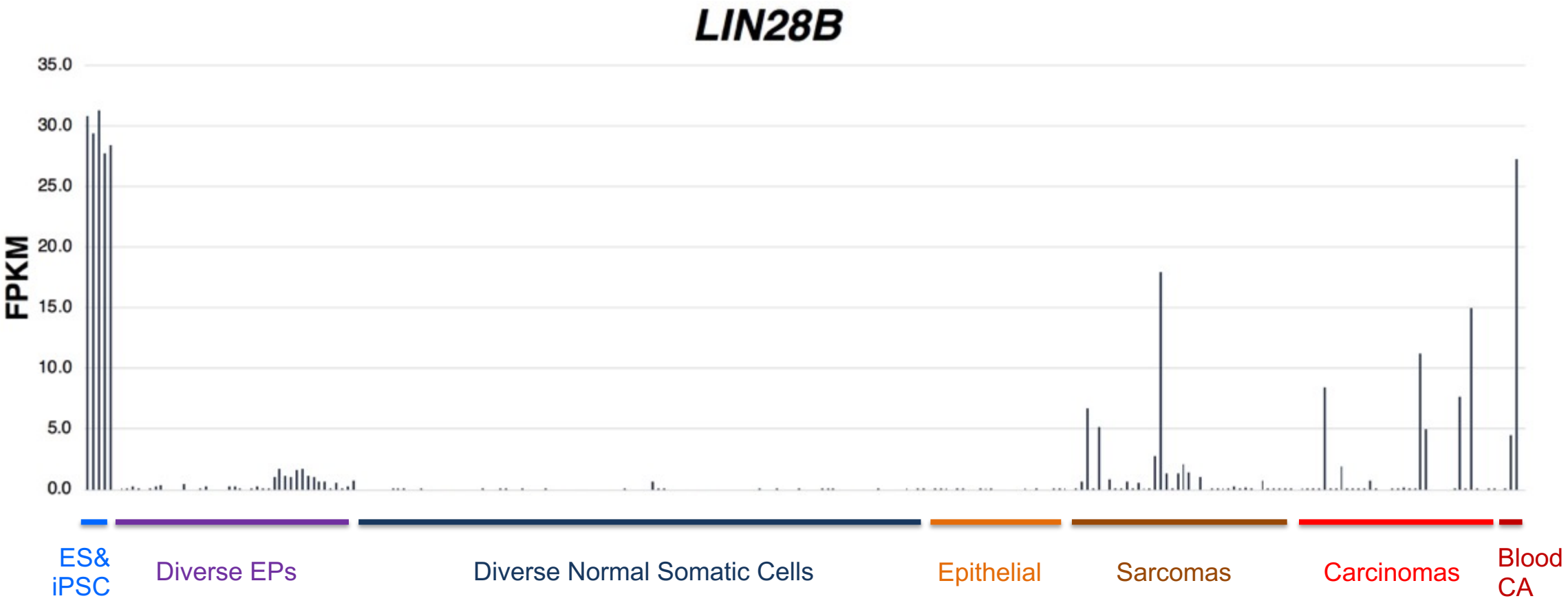


Olova et al 2021 *Aging Cell*

The Immortal & Regenerative Hallmarks of Cancer

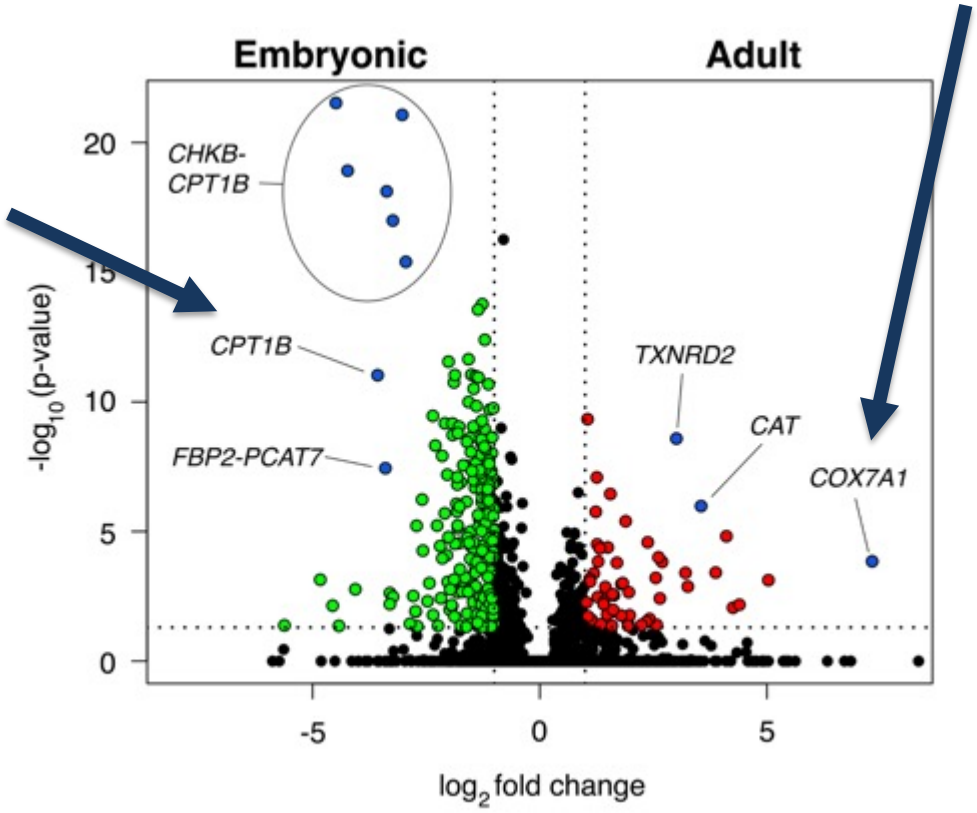
AGEX THERAPEUTICS

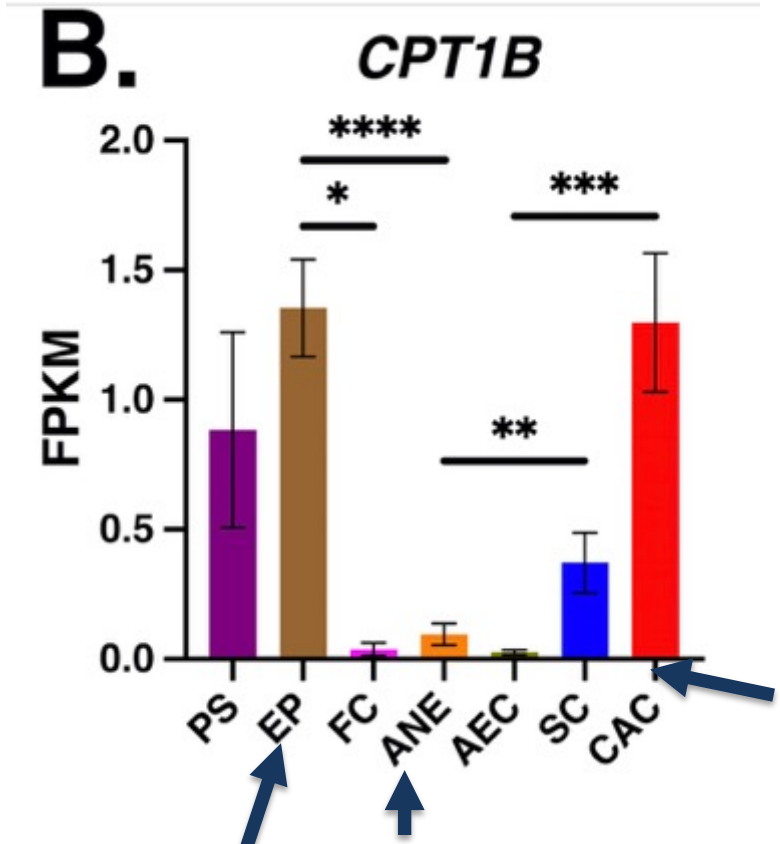
The Regenerative Hallmarks of Cancer: *LIN28B*



AGEX THERAPEUTICS

Examples of EFT Genes



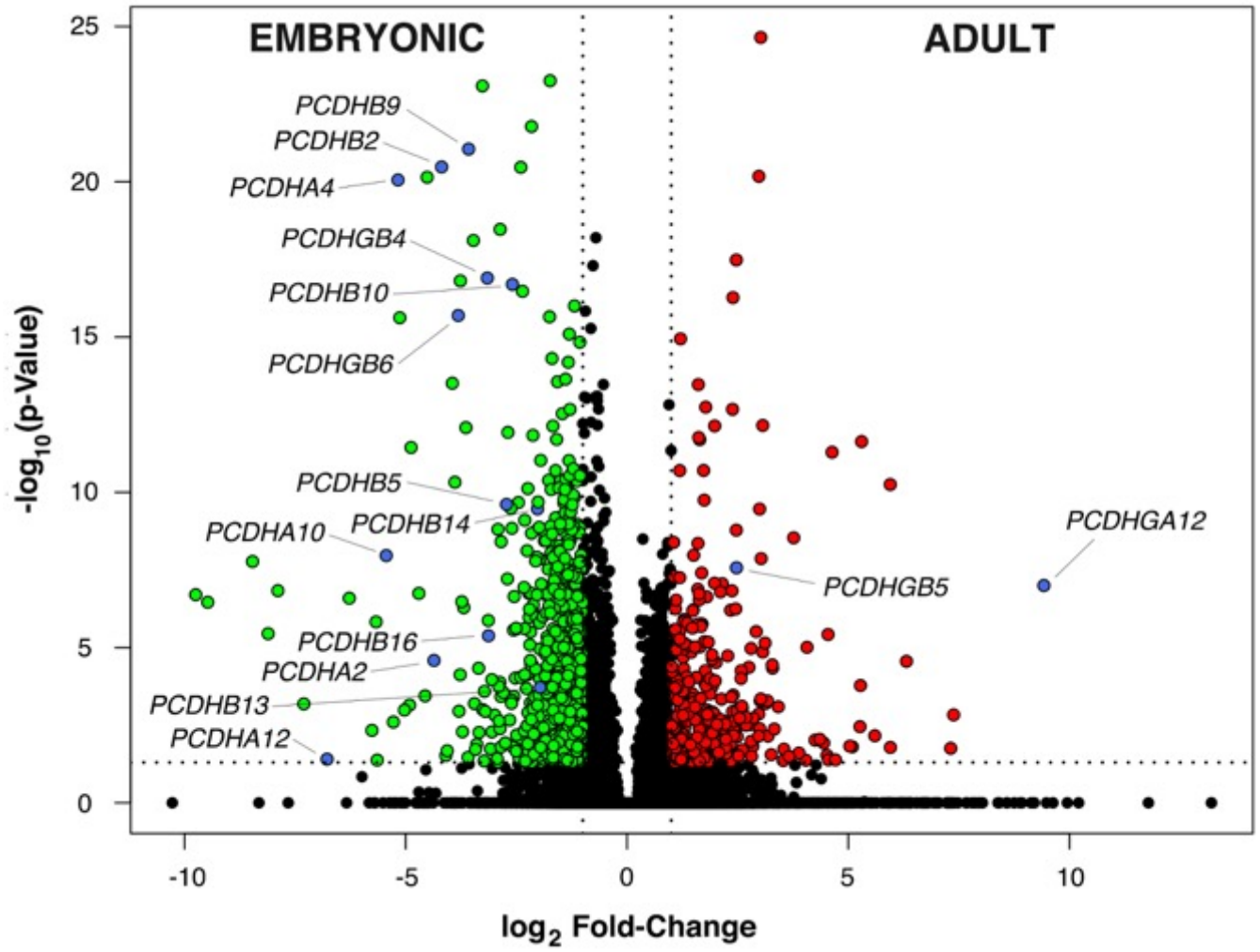


Diverse Cancer Cell Lines

Diverse PureStem Lines

Diverse Normal Adult Somatic Cell Types

Taking Lessons from the PCDH Locus

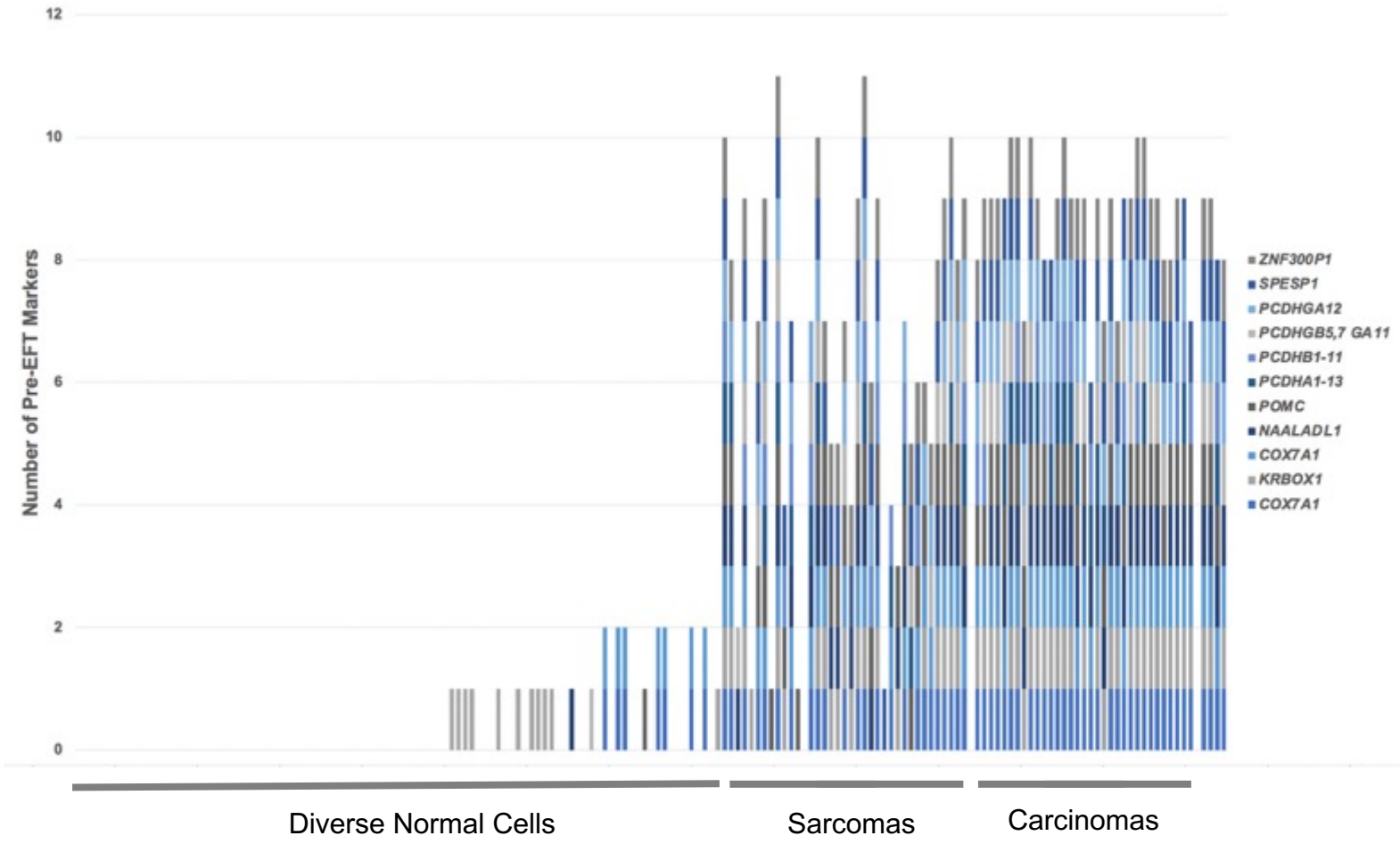


Pre-EFT Pan-Cancer Markers

Newly-discovered hallmark of cancer seen in:

82% Sarcomas
<u>100%</u> Carcinomas including:

- Breast Cancer
- Lung Cancer
- Brain Cancer
- Prostate Cancer
- Colon Cancer
- Liver Cancer
- Kidney Cancer



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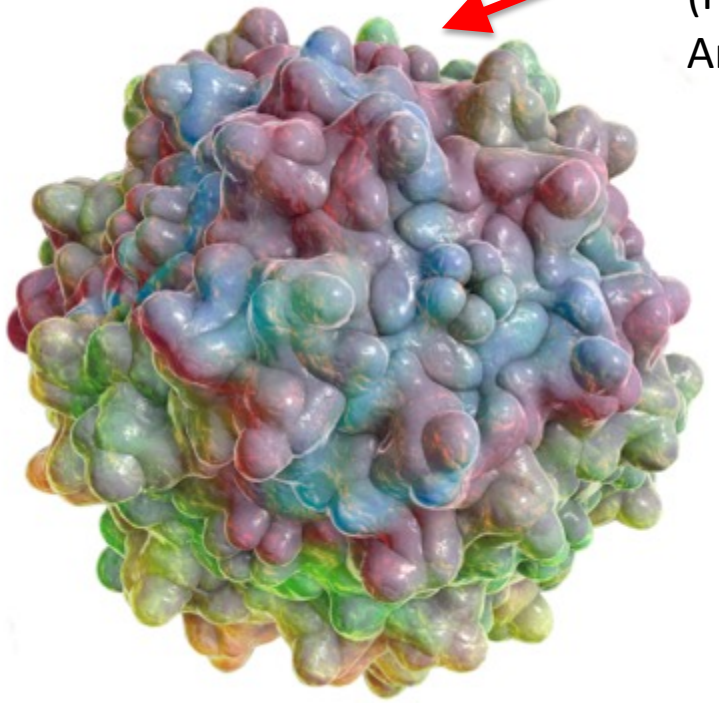
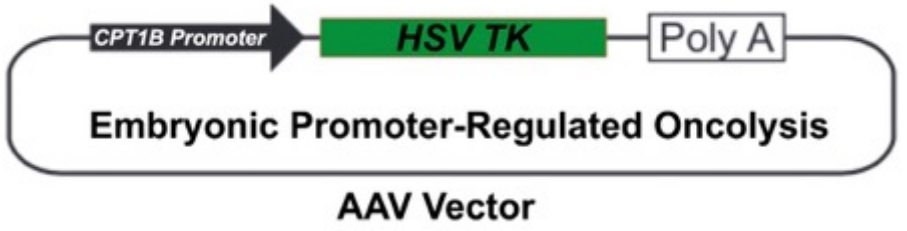
Cancer Therapeutics -*EPRO*

Vector to Precisely Target and Destroy Pre-EFT Cancer



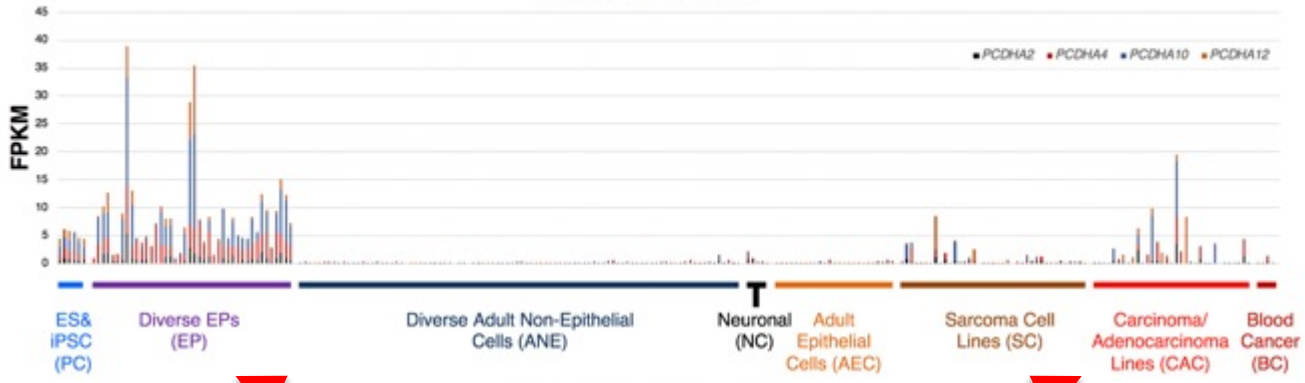
Binding Site for Proprietary (Patent Pending) Embryonic Antigens

EPRO Oncolytic Viral Vector



AAV Vector

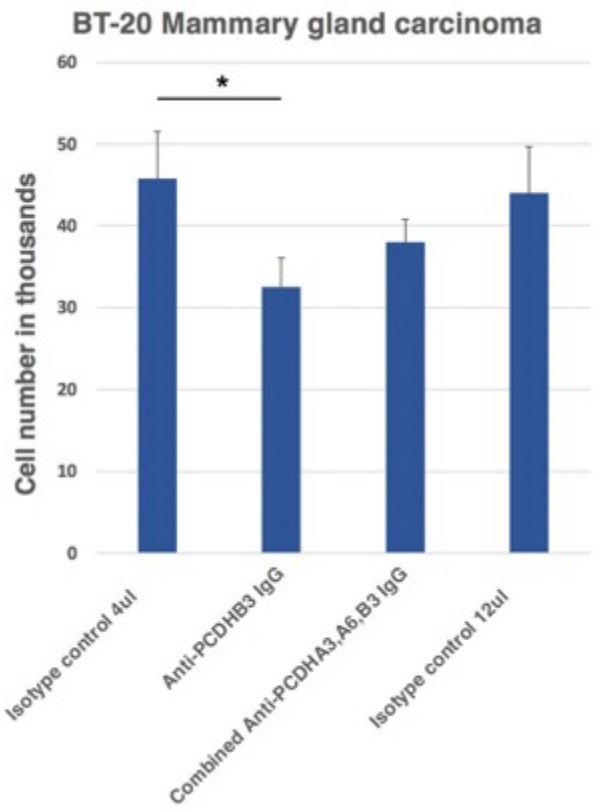
***PCDHA* Locus**

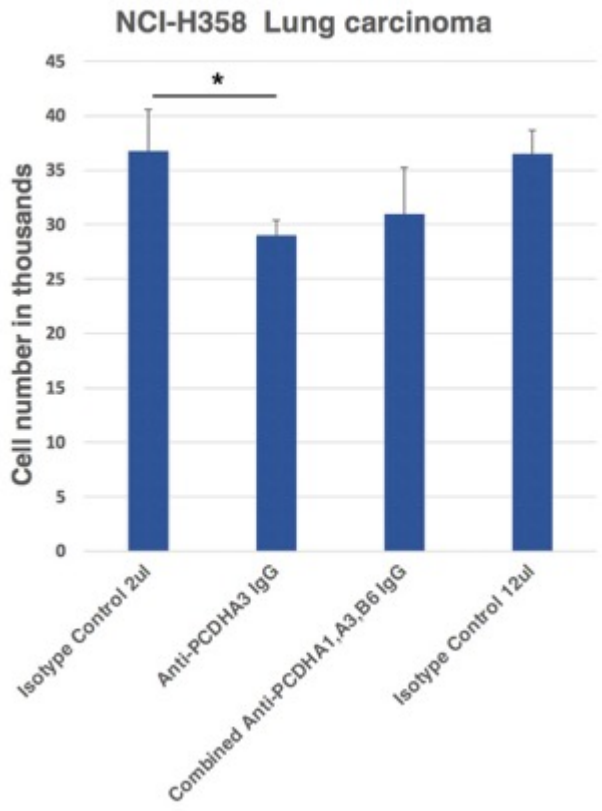


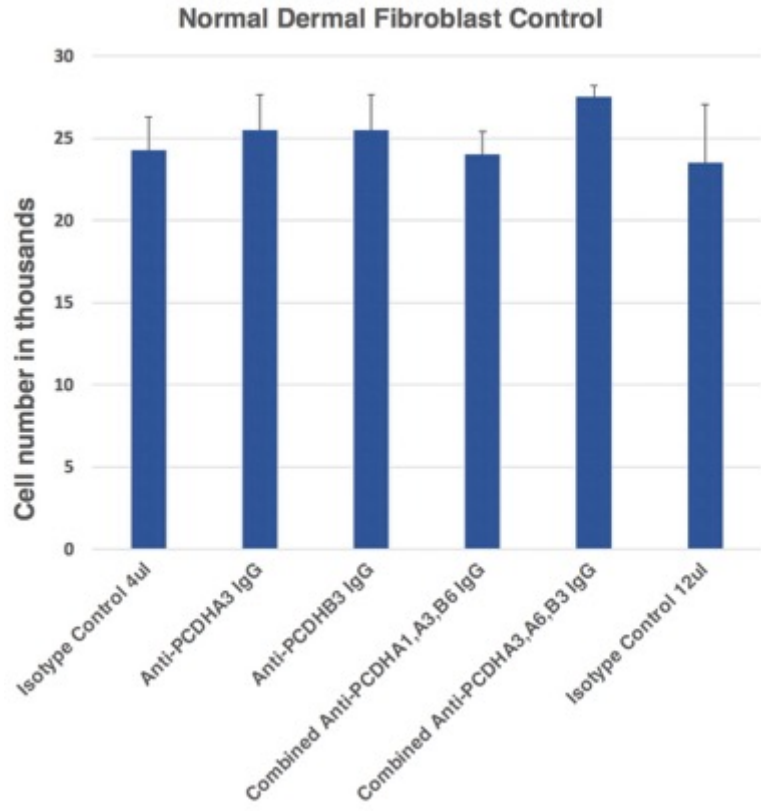
Example of Proprietary Antigens not Expressed in Most Adult Cells, but Expressed in Cancer

Cancer Therapeutics

Early Proof of Concept: Specific Targeting in Breast and Lung Cancer using antibody alone







AGEX THERAPEUTICS

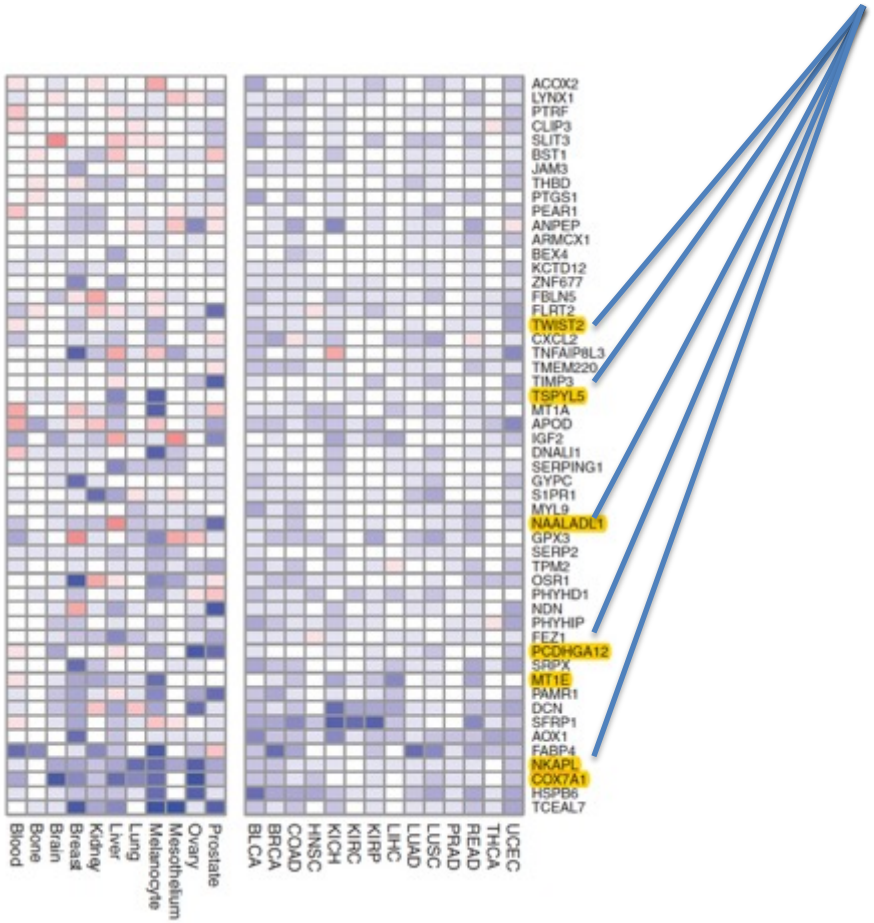
Embryonic Markers and Pan-Cancer Dx

Pre-EFT Markers

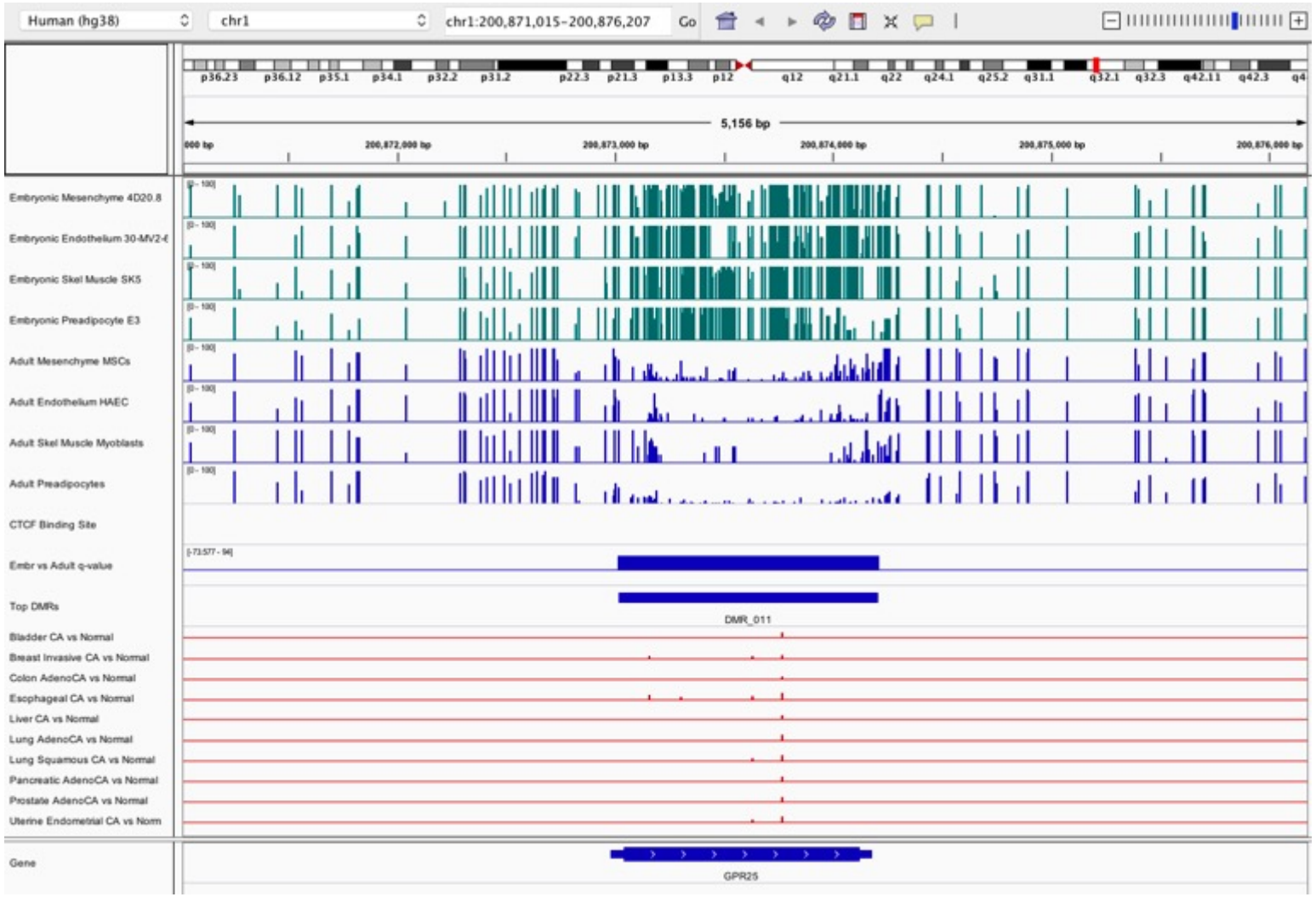
Transcriptome Analysis of Recurrently Deregulated Genes across Multiple Cancers Identifies New Pan-Cancer Biomarkers

Bogumil Kaczkowski[1], Yuji Tanaka[1,2], Hideya Kawaji[1,2,3], Albin Sandelin[4], Robin Andersson[4], Masayoshi Itoh[1,3], Timo Lassmann[1,5], the FANTOM5 consortium, Yoshihide Hayashizaki[3], Piero Carninci[1], and Alistair R.R. Forrest[1,6]

Cancer Res; 76(2); 1–11.



Robust Markers of Embryonic Cancer Cells for Diagnosis



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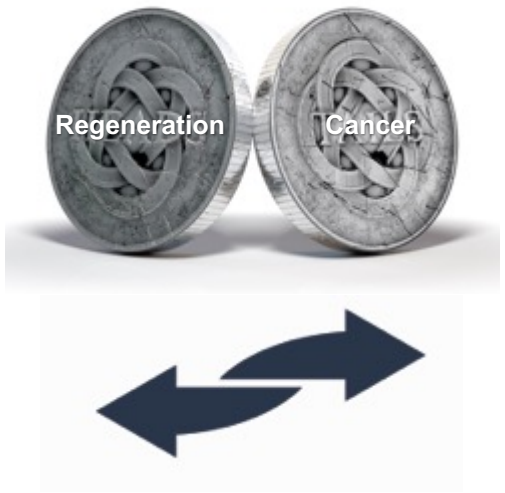
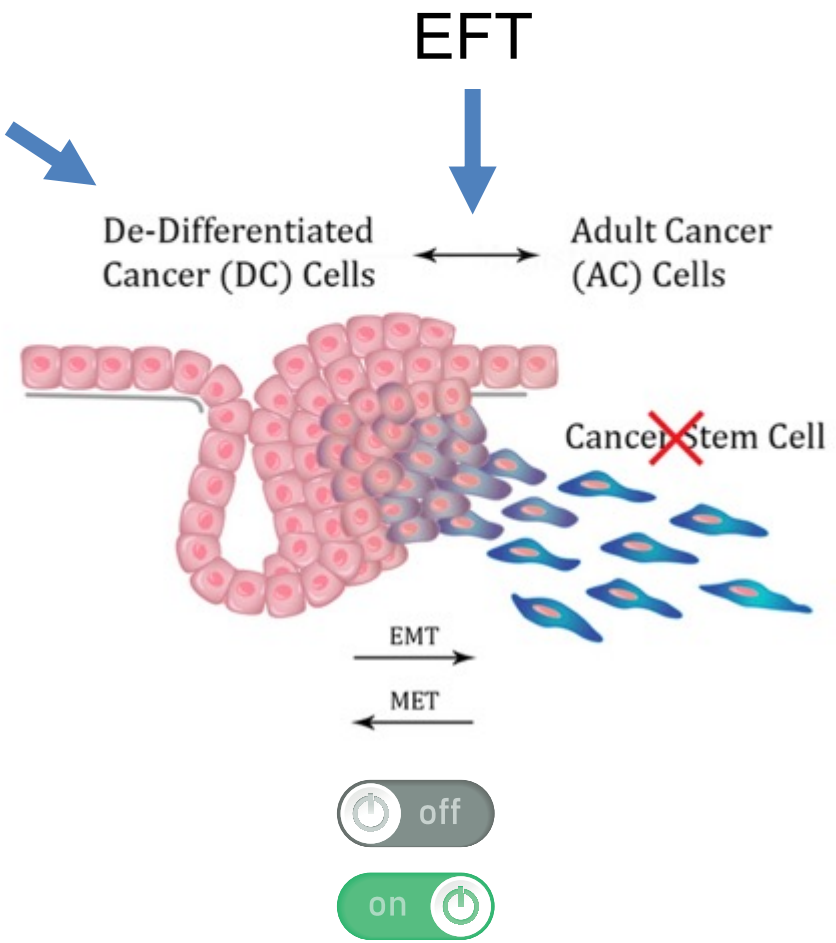
EFT & Novel Pan-Cancer Therapeutic Strategy

EPRO™
Target Pre-EFT cancer cells for destruction





The concept of antagonistic pleiotropy led to:

1) Telomerase as a pan-cancer hallmark.
2) More recently, the Pre-EFT hallmark of cancer and that cancer stem cells are not the more primitive cell.

These insights lead to novel pan-cancer therapeutic and diagnostic strategies.

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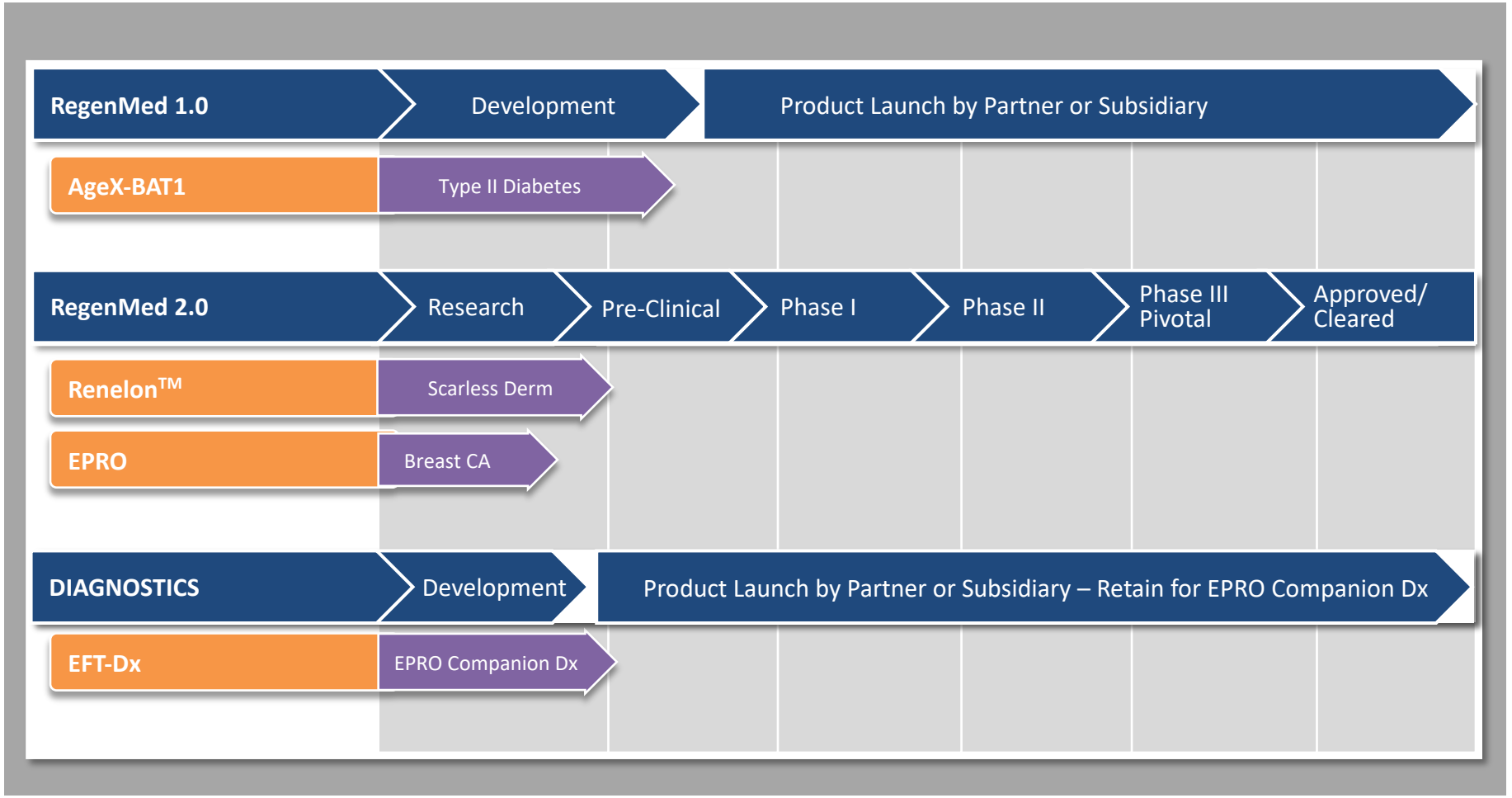
Product Pipeline



AGEX THERAPEUTICS

Significant Biotechnology Revolutions

Recombinant DNA Technology

- 1974 – Gene cloning technology developed
- 1976 - Moratorium on rDNA research initiated led to established guidelines on rDNA research
- 1989 – First $B product EPO
- Today, products from the use of rDNA technology are ubiquitous
- >140 clinical trials
- Current Global Market $75 B

Monoclonal Antibodies

- 1975 - Hybridoma technology developed
- 1997- First $B Product Rituximab
- Advances in Mab Engineering
- Today, eight of the 20 best-selling biotechnology drugs in therapeutic monoclonal antibodies
- > 200 clinical trials
- Current Global Market $44 B

Regenerative Medicine 1.0

- 1998 – First Pluripotent Stem Cells (PSCs) isolated
- 2001 – U.S. Federal funding restriction (reversed in 2009)
- 2010 – 1st PSC Clinical trial
- 2015 – Fuji acquires Cell. Dyn.
- 2015 – Astellas acquires Ocata
- 2019 – Bayer acquires BlueRock
- 2019 – Vertex acquires Semma
- 2021 – SANA IPO $6B M. Cap.
  2022 – LCTX $670M Roche
- Future – 1st $B product

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- Future – 1st $B product

Regenerative Medicine 2.0

- Induced tissue regeneration (iTR) in the body without cell transplantation. Works by reversing developmental aging
- 2010 – While at BioTime we publish evidence technology reverses developmental aging.
- 2013-Present first patents filed and owned by AgeX
- 2022 – Altos >$3B financing
- 2022 – Retro $180M financing

AGEX THERAPEUTICS

Summary

Therapeutic & Dx Opportunities Stemming from Partial Reprogramming

- Induction of Tissue Regeneration (iTR) and reversal of age markers in tissues afflicted with age-related degenerative disease
  - Initial development of *ex vivo* therapy in dermatology

- *EPRO*– Immuno-oncological targeting the destruction of numerous cancer cell types
  - Initial POC in breast cancer

- *Pan-Cancer Dx*– Detection of most cancer types. By liquid biopsy, determination of embryonic vs adult phenotypes, companion Dx to EPRO

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