Science in the Service of Medicine

Unique Targets.
Novel Mechanisms.
New Medicines.

VX15 (pepinemab) Antibody Treatment for Cancer and Huntington's Disease

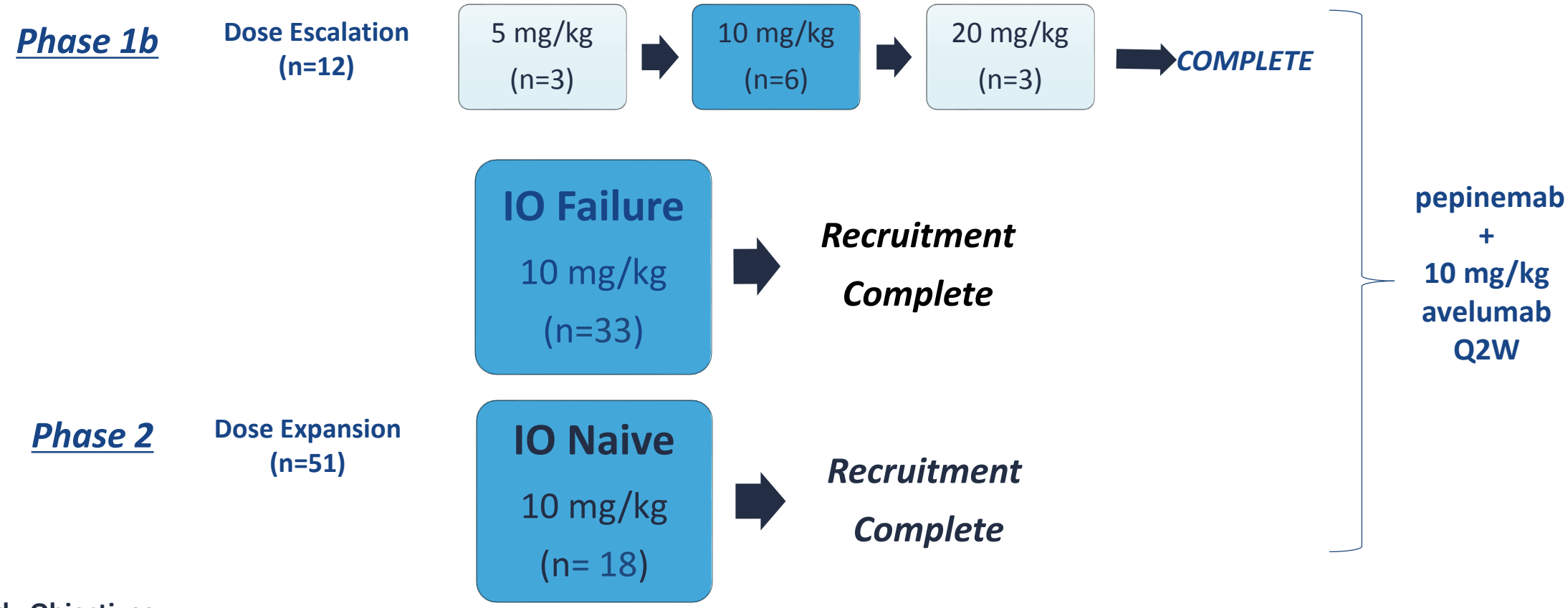
Forward Looking Statement

To the extent that statements contained in this presentation are not descriptions of historical facts regarding Vaccinex, Inc. (“Vaccinex,” “we,” “us,” or “our”), they are forward-looking statements reflecting management’s current beliefs and expectations. Such statements include, but are not limited to, statements about our plans, expectations and objectives with respect to clinical trials, and other statements identified by words such as “may,” “will,” “appears,” “expect,” “anticipate,” “estimate,” “intend,” “hypothesis,” “potential,” “advance,” and similar expressions or their negatives (as well as other words and expressions referencing future events, conditions, or circumstances). Forward-looking statements involve substantial risks and uncertainties that could cause our research and pre-clinical development programs, clinical development programs, future results, performance, or achievements to differ significantly from those expressed or implied by the forward-looking statements. Such risks and uncertainties include, among others, uncertainties inherent in the execution, cost and completion of preclinical and clinical trials, uncertainties related to regulatory approval, risks related to our dependence on our lead product candidate pepinemab (VX15/2503), and other matters that could affect our development plans or the commercial potential of our product candidates. Except as required by law, we assume no obligation to update these forward-looking statements. For a further discussion of these and other factors that could cause future results to differ materially from any forward-looking statement, see the section titled “Risk Factors” in our periodic reports filed with the Securities and Exchange Commission (“SEC”) and the other risks and uncertainties described in our Form 10-K dated March 13, 2019 and subsequent filings with the SEC.

Phase 1b/2 CLASSICAL- Lung Study Design

Combination Trial of Pepinemab with Avelumab in NSCLC

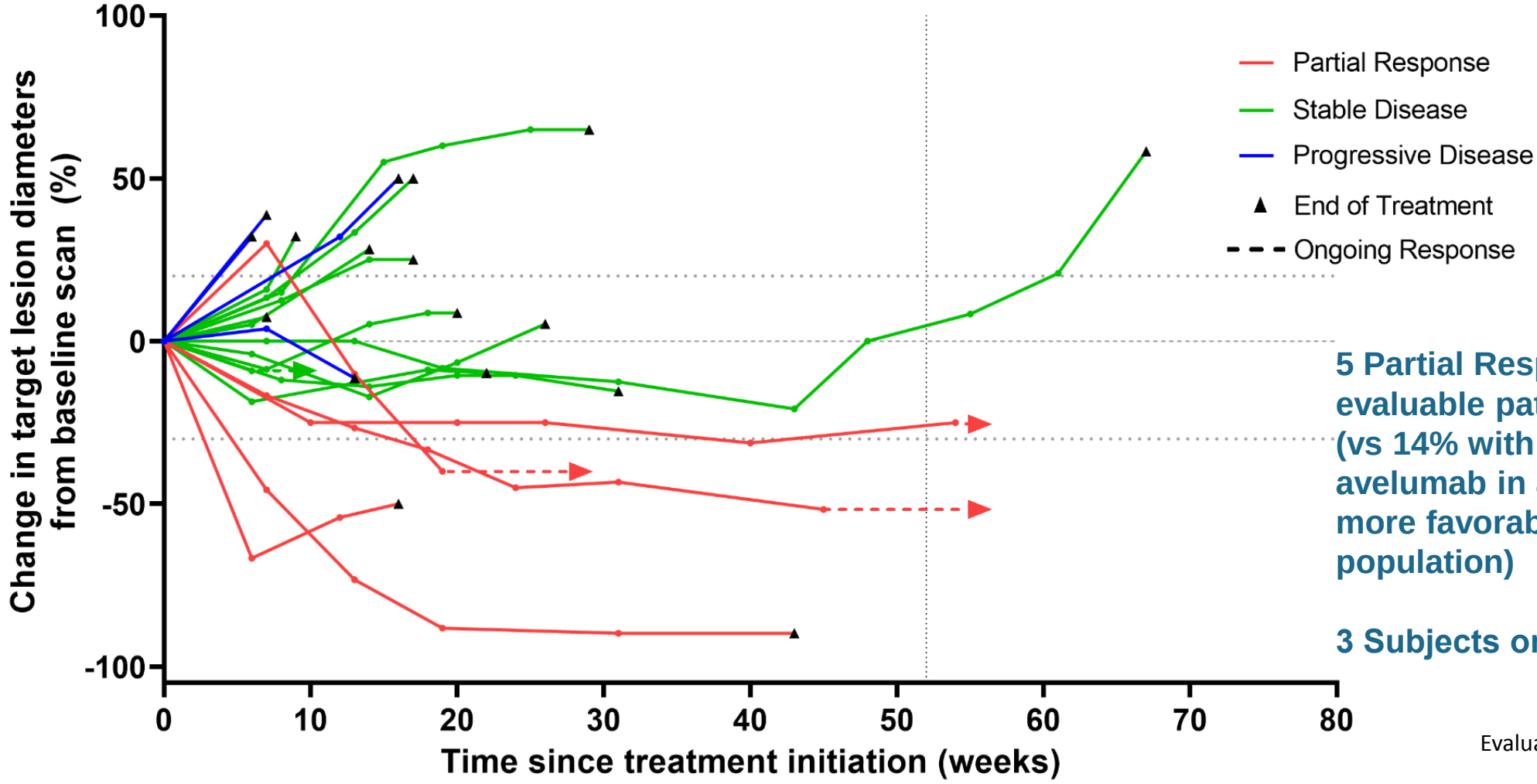
Co-funded by: MERCK



Study Objectives

- The primary objective of dose escalation is safety, tolerability, and identification of the RP2D for dose expansion.
- Secondary objectives include evaluation of efficacy, immunogenicity, and PK/PD, and an exploratory objective is to identify candidate biomarkers of activity

Percent Change in Target Lesion Diameter (IO Naïve Cohort)



5 Partial Responses among 20 evaluable patients = 25% (vs 14% with single agent avelumab in an earlier study of a more favorable IO naïve population)

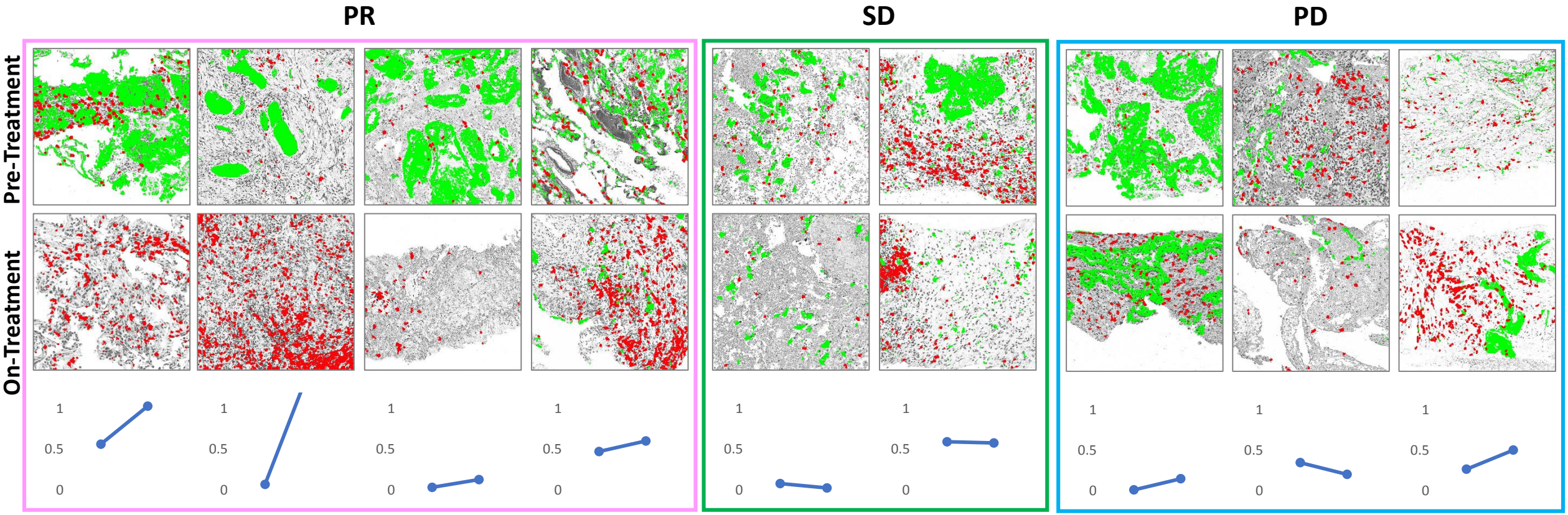
3 Subjects on study ≥ 1 year

Evaluable patients are shown

Lines are color-coded based on best overall response

CLASSICAL- Lung: IO Naive

Increase in CD8+ T cell infiltration

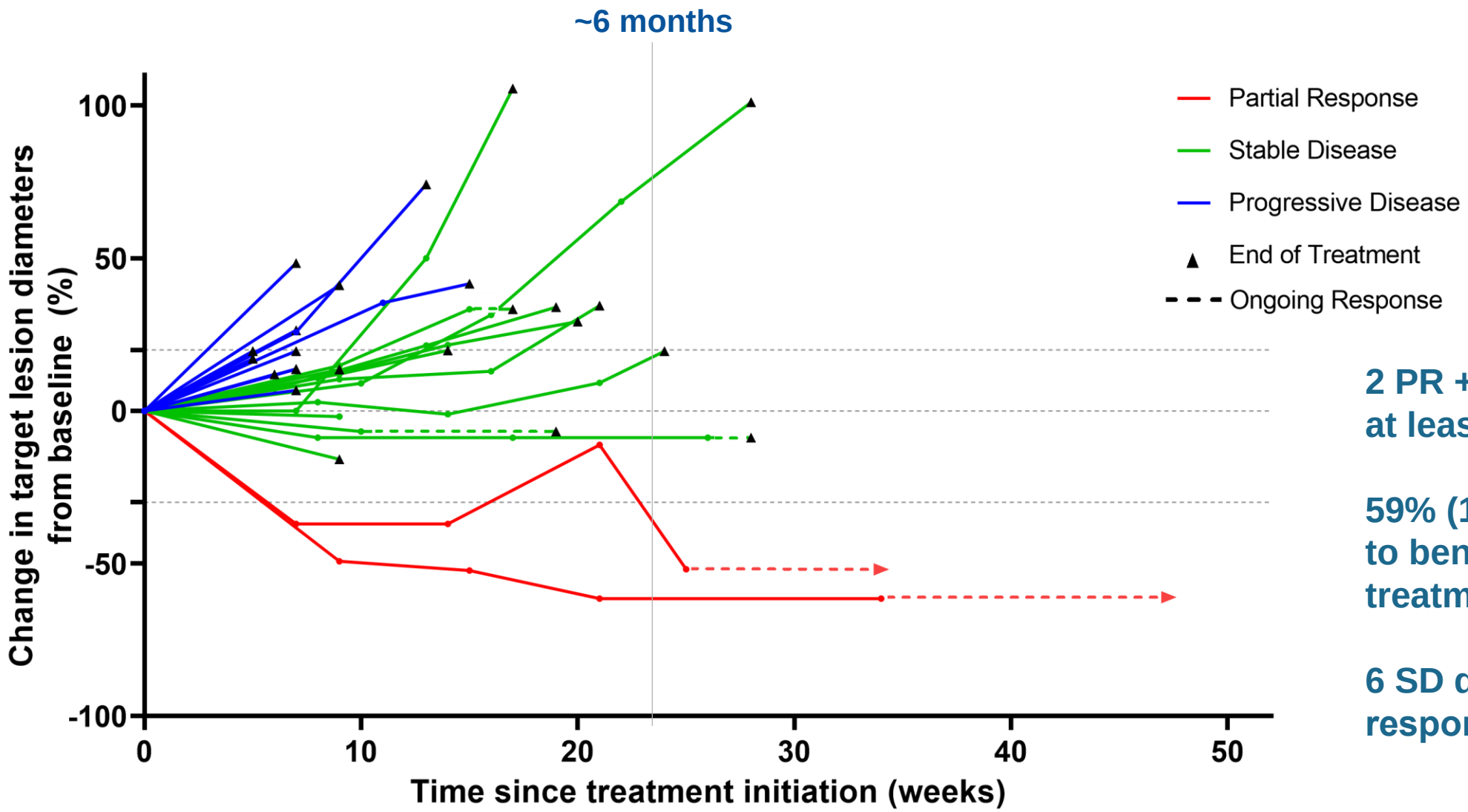


No or low tumor detected in these 4 biopsies from patients with PR

PD-L1 expression was low-negative in all 9 patients

Tumor (Cytokeratin+)
CD8+ T cells

Percent Change in Target Lesion Diameter (IO Failure)



2 PR + 3 SD on study at least ~6 months

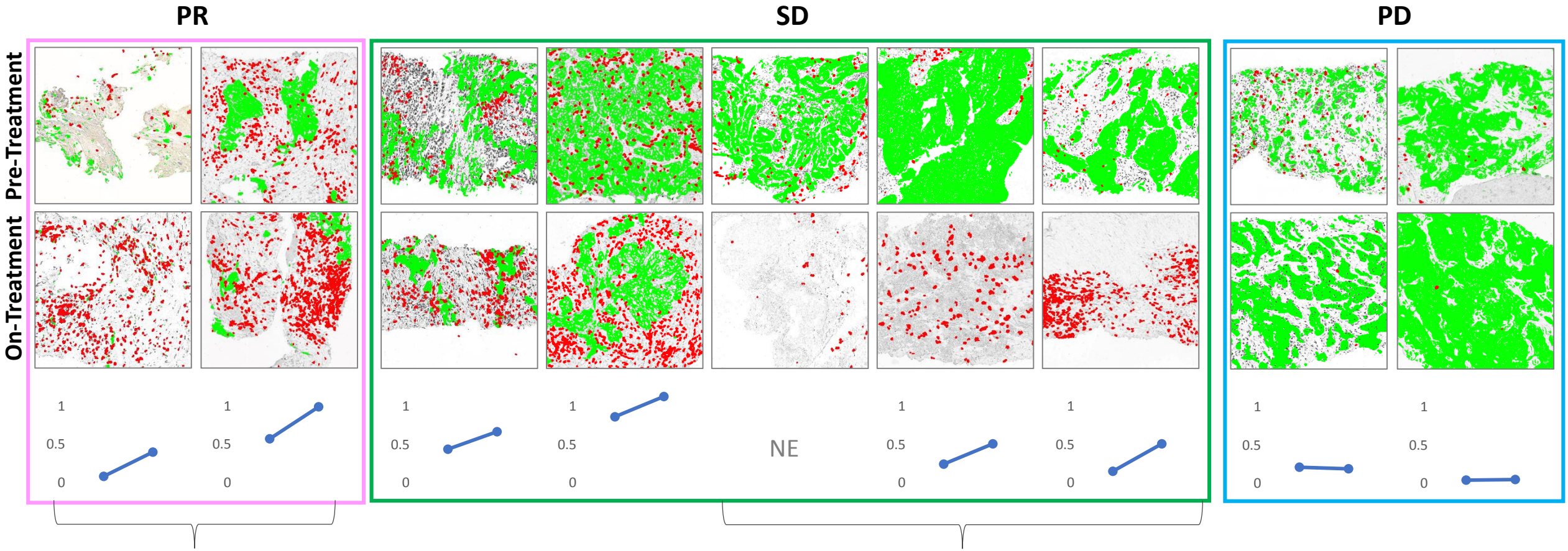
59% (17/29) appeared to benefit from treatment (PR or SD)

6 SD duration of response ≥ to prior IO

Lines are color-coded based on best overall response

CLASSICAL- Lung: IO Failure

Increase in CD8+ T cell infiltration



No or low tumor detected in these 2 biopsies from patients with PR

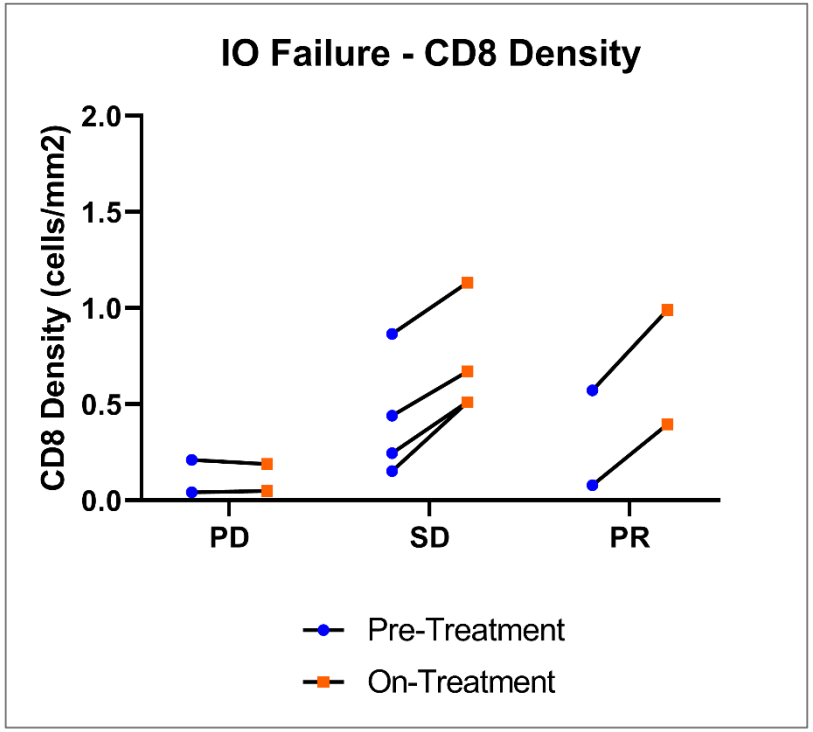
No tumor detected in these 3 biopsies from patients with stable disease
2 of these were PD-L1-negative

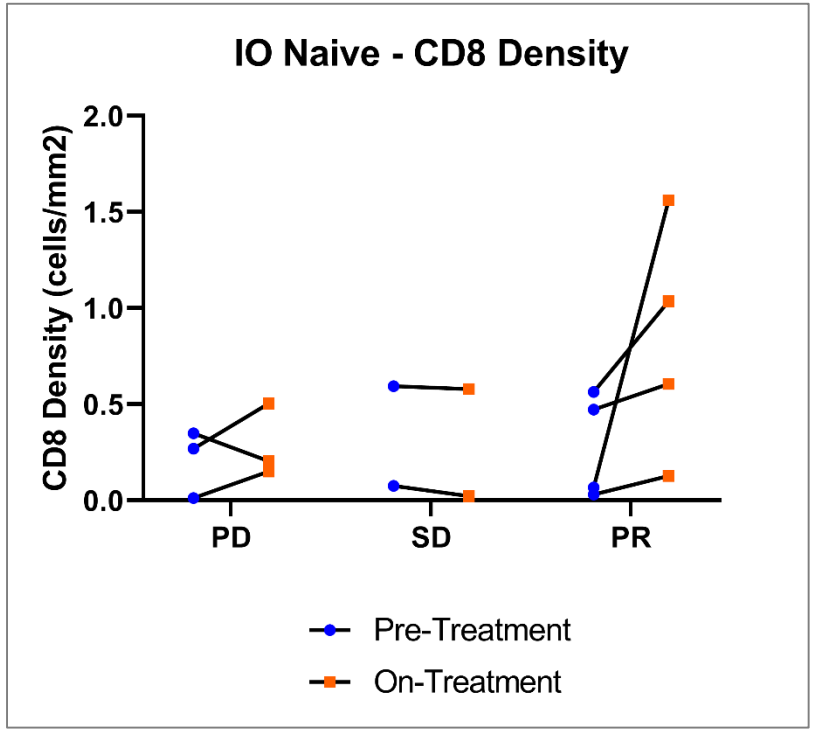
Tumor (Cytokeratin+)
CD8+ T cells
NE: not evaluable

CD8 Density generally increased following treatment

CLASSICAL-Lung

- CD8 density in tumor generally increased following treatment with pepinemab + avelumab
- Higher CD8 density appears to correspond with beneficial clinical response





- Matched pre and on-treatment from the same lesion
- Quantification of tumor bed across the entire biopsy section, excluding necrotic regions. Tumor bed was verified by pathologist review

Window-of-Opportunity Study: Colorectal cancer metastasis to liver
Pepinemab rapidly increases T cell infiltration into tumor bed

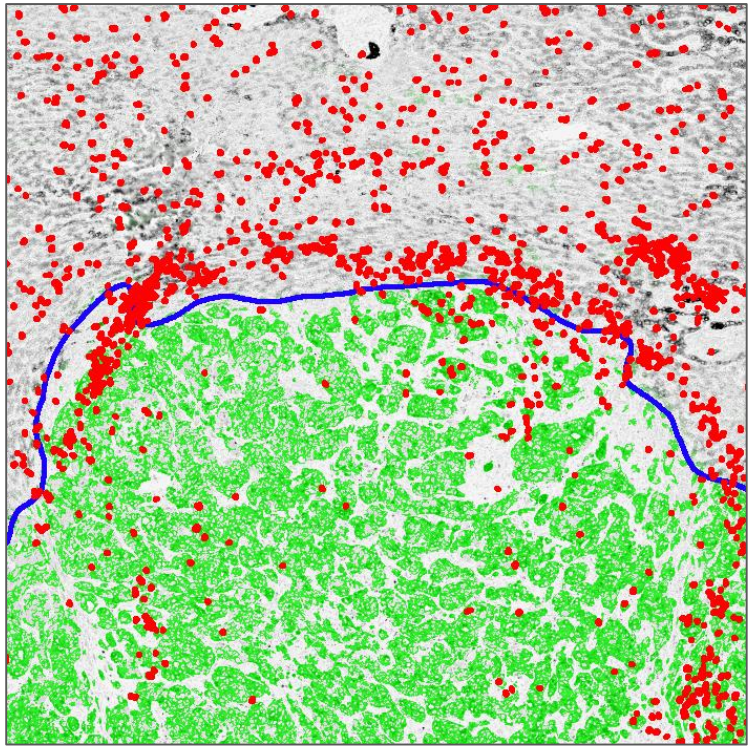
Winship Cancer Institute, Emory University

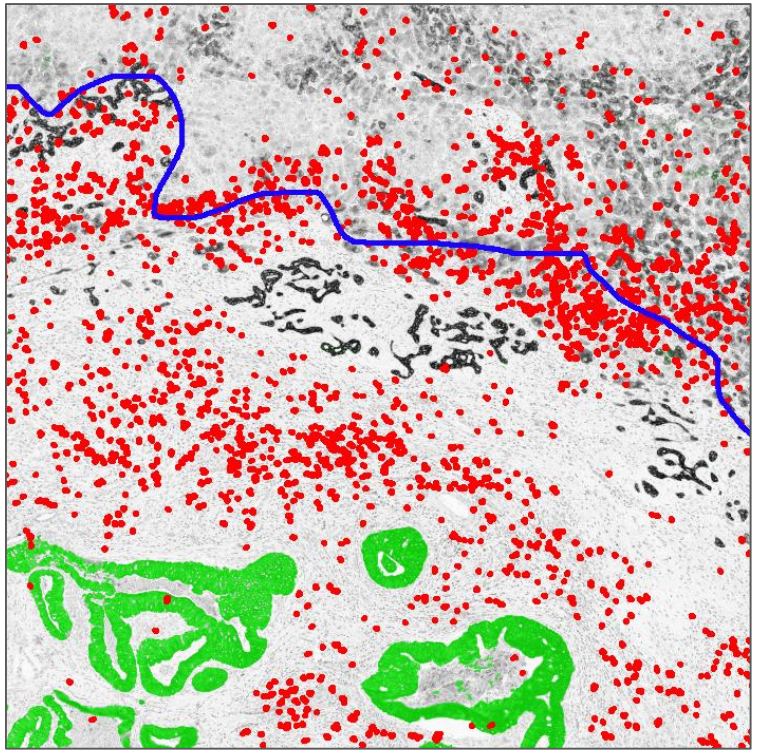
No treatment
T cells are trapped at margin and are largely excluded from tumor bed

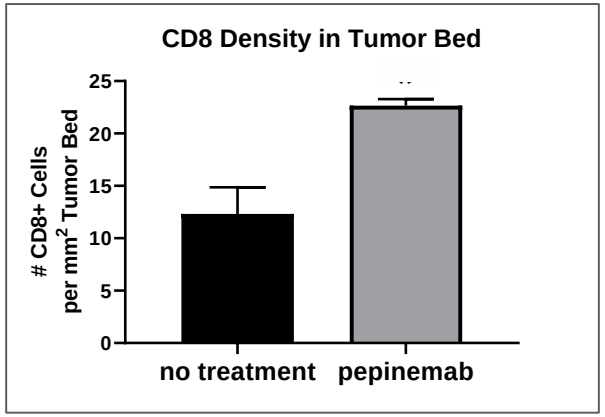
Pepinemab
T cells penetrate into the tumor bed. Tumor content is reduced and appears to be replaced by stroma.

Normal liver

Tumor Bed







CD8 density was determined from entire tumor bed (n= 2 sections/patient).

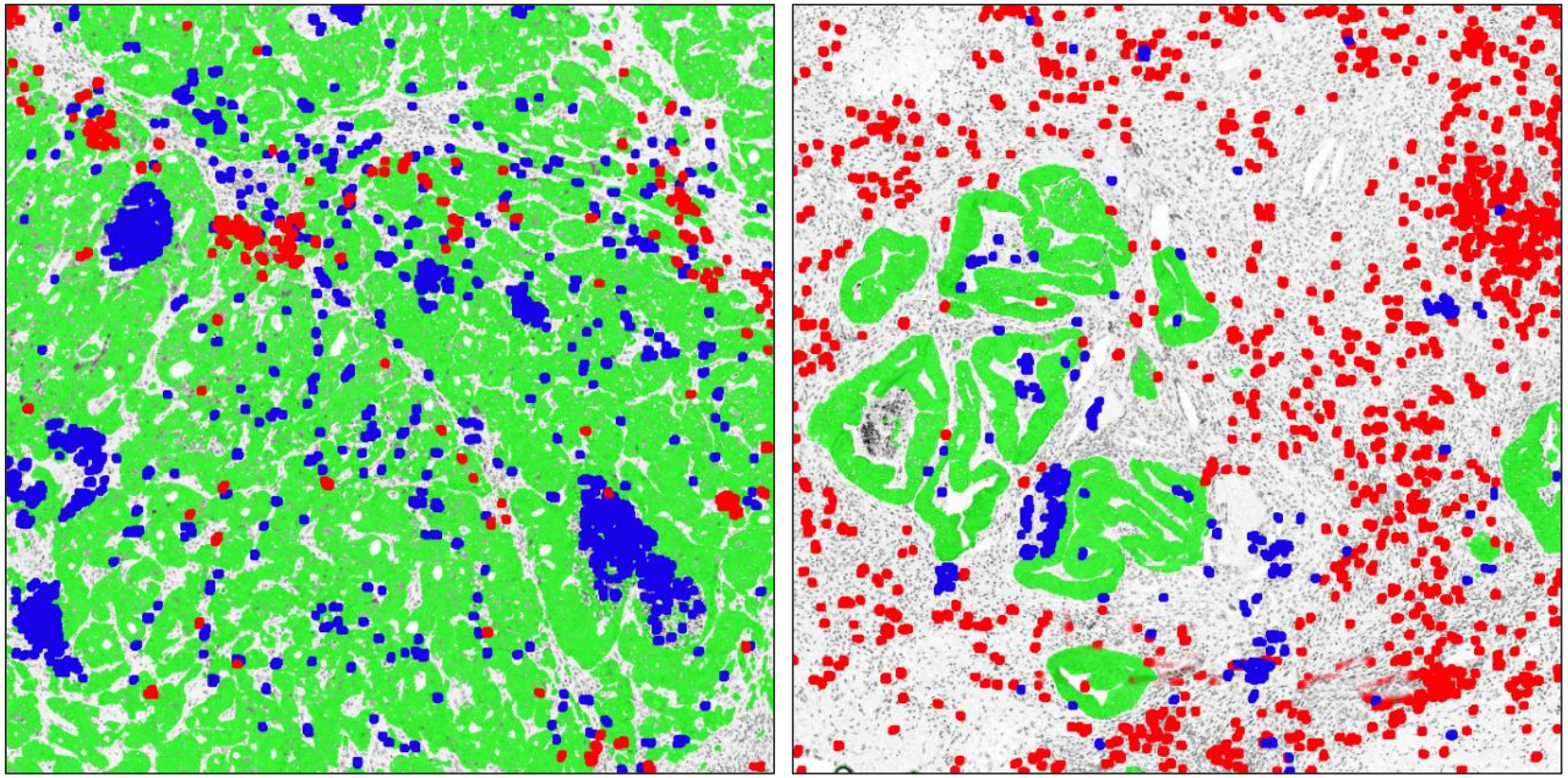
CD8+ T cells
Margin of tumor bed
Tumor nodules

Patients received neoadjuvant chemo therapy before immunotherapy and surgery

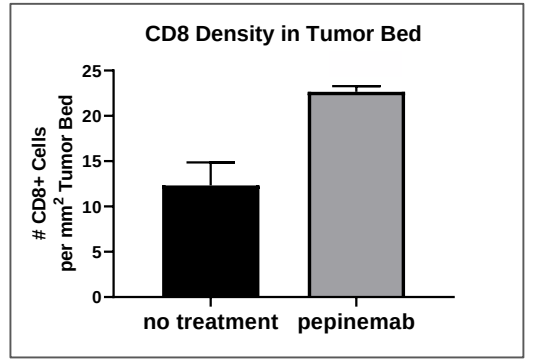
Window-of-Opportunity Study: Colorectal cancer metastasis to liver
Pepinemab rapidly reduced MDSC and increased T cells in center of tumor

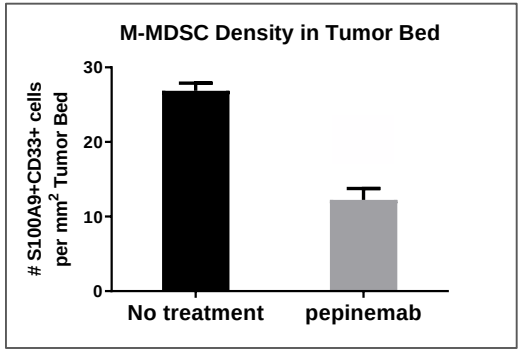
Winship Cancer Institute, Emory University

No treatment | **Pepinemab**



Patients received neoadjuvant chemo therapy before immunotherapy and surgery





Density was determined from entire tumor bed (n= 2 sections/patient).

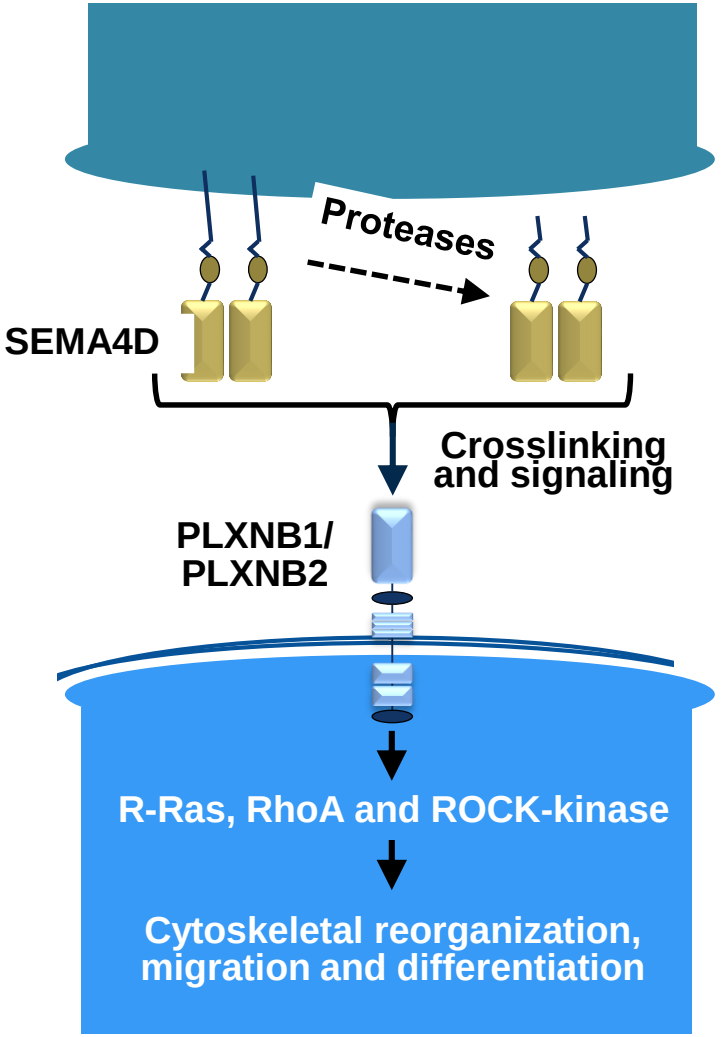
M-MDSC (S100A9+CD33+)
CD8+ T cells
Tumors (Cytokeratin+)

Semaphorin 4D (SEMA4D) Mechanism of Action

SEMA4D signals through PLXNB1 and PLXNB2 receptors to trigger dissociation of polymerized F-actin and collapse of cell's cytoskeleton

The cell cytoskeleton regulates process extension and cell migration

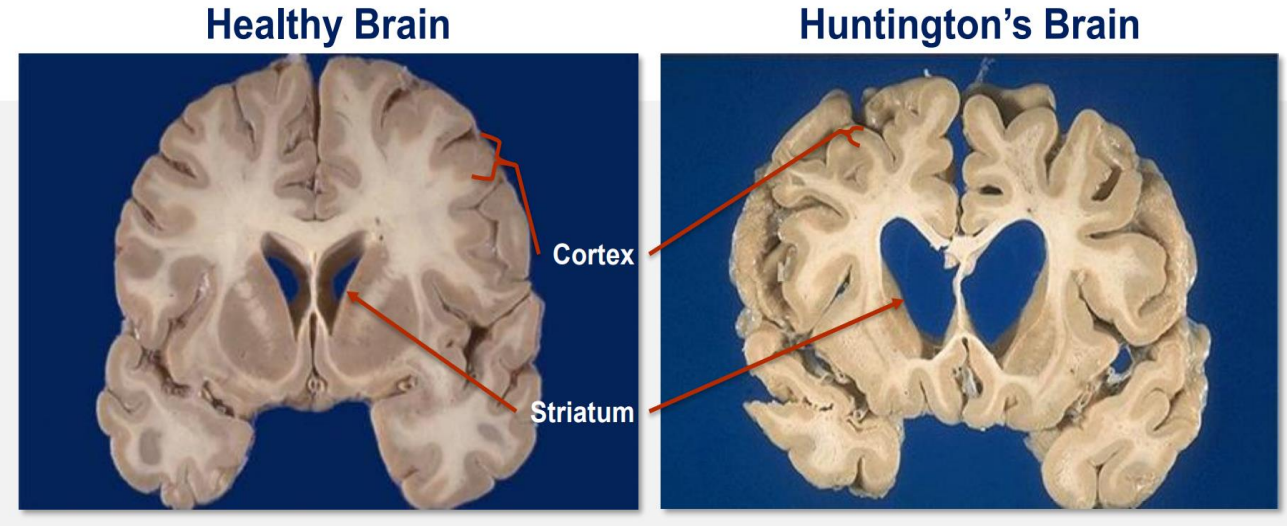
Pepinemab (VX15 antibody) binds to SEMA4D and blocks its signaling activity



Huntington's Disease (HD)

HD is an autosomal dominant neurodegenerative disease caused by mutation in a single gene

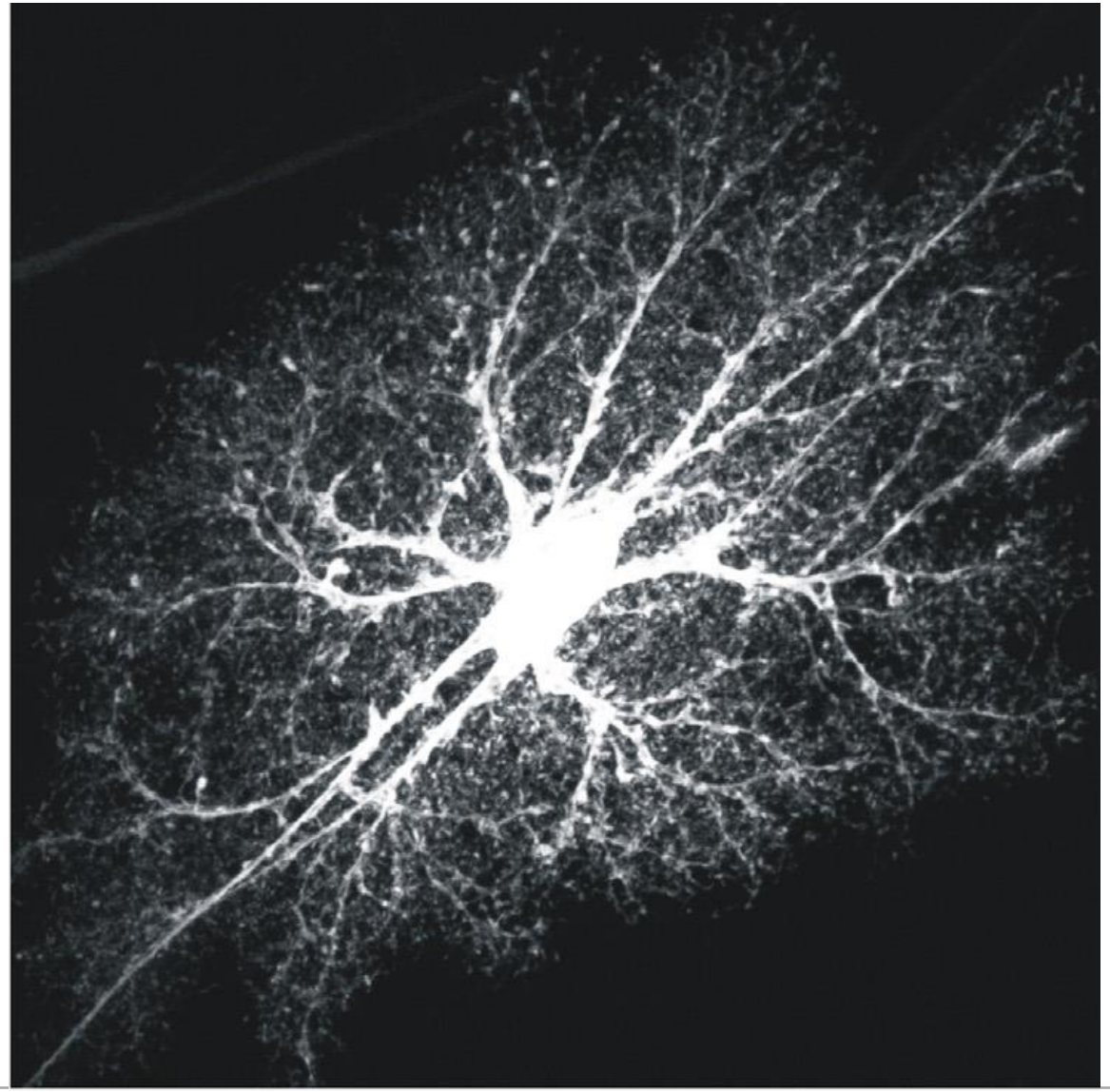
- Neuronal degeneration and severe atrophy is observed in multiple brain regions
- **Symptoms usually appear between the ages of 30 to 50**



Estimated patient population ~30,000 manifest disease and 100,000 pre-manifest with inherited mutation (prodromal) in the U.S. Similar number in EU 5

There are currently no approved treatments to alter the course of HD

Astrocytes reach out to touch and interact with other brain cells



Astrocyte “arms” provide essential functional support to neurons.

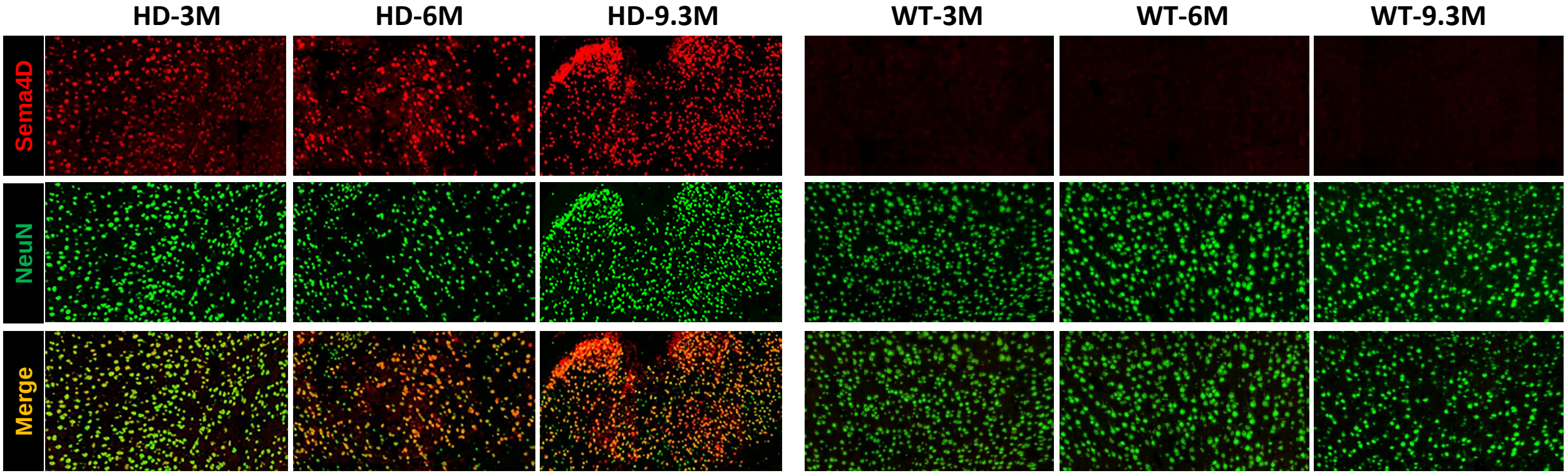
- Fully cover capillaries and facilitate glucose uptake from circulation
- Cradle synapses and recycle glutamate
- Positioned to couple energy metabolism with neuronal activity

Astrocytes Undergo Inflammatory Transformation that Aggravates Brain Damage in HD

- **How do astrocytes recognize and respond to damage?**
  - SEMA4D is upregulated on neural cells during underlying disease progression
  - Astrocytes express high levels of receptors for SEMA4D
  - SEMA4D triggers depolymerization of F-actin associated with loss of normal astrocyte functions and transition to inflammatory state

SEMA4D is progressively upregulated in NeuN+ neurons of HD mice

Q175 transgenic mouse model of HD

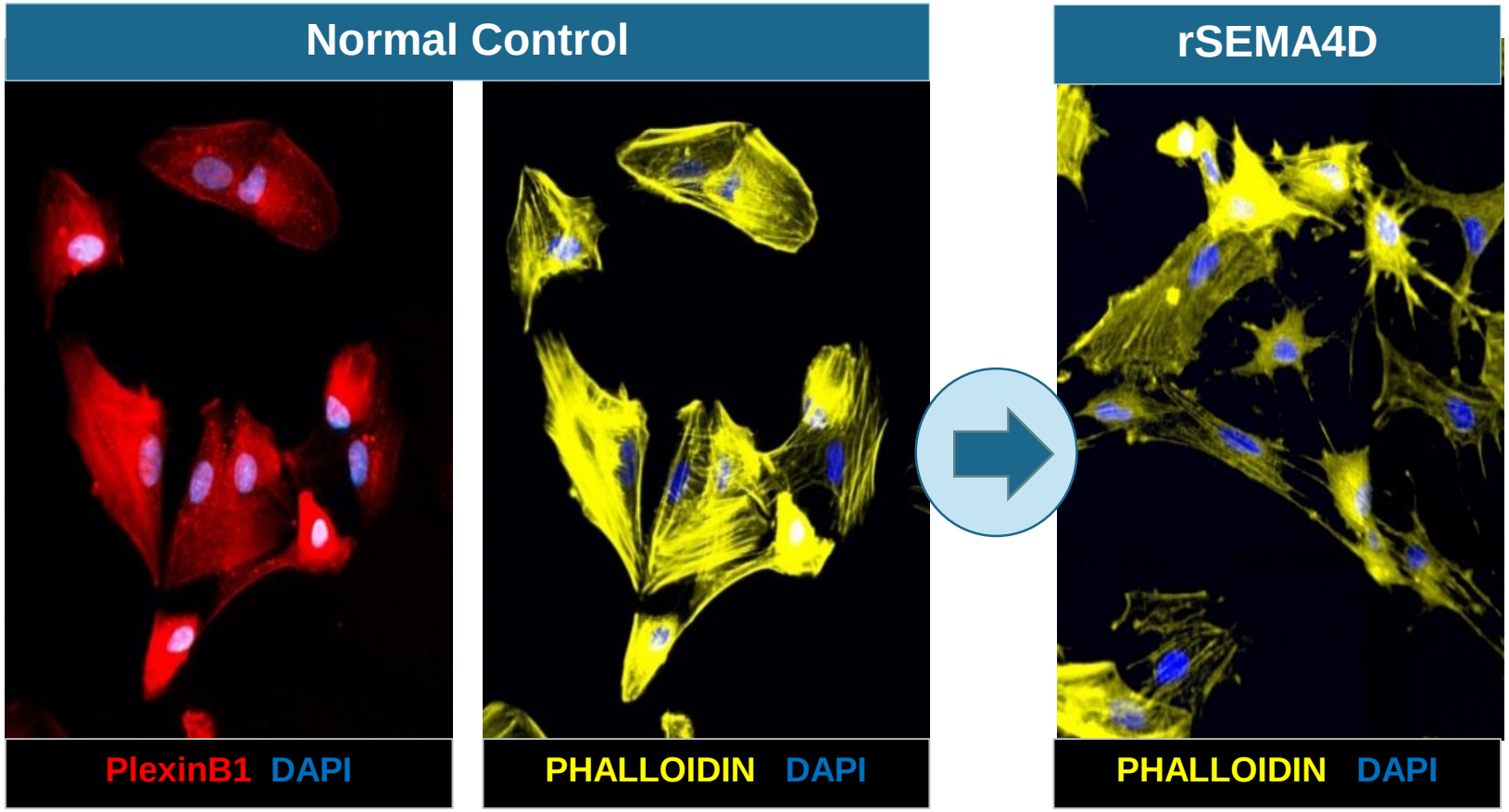


- **SEMA4D expression is upregulated in HD mice as disease progresses, compared to low expression in WT control.**
  - SEMA4D is upregulated early in disease, prior to onset of symptoms, which occurs ~ 5 months of age in Q175 HD transgenic mice.
- **SEMA4D co-localizes with NeuN+ neurons.**

NeuN/Sema staining of retrosplenial cortex region of Q175 knock-in mouse model of HD and age-matched wild type (WT) littermate controls. Representative images are shown from analysis of 3 mice/time-point. M = months of age.

SEMA4D Inhibits Cell Migration and Process Extension

A



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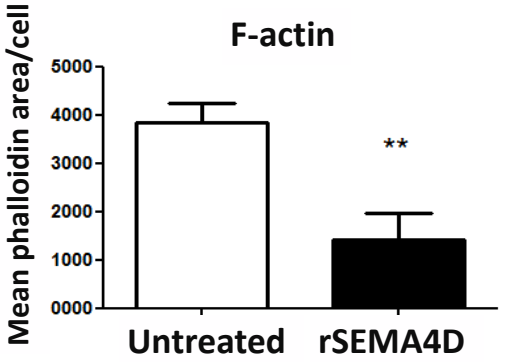

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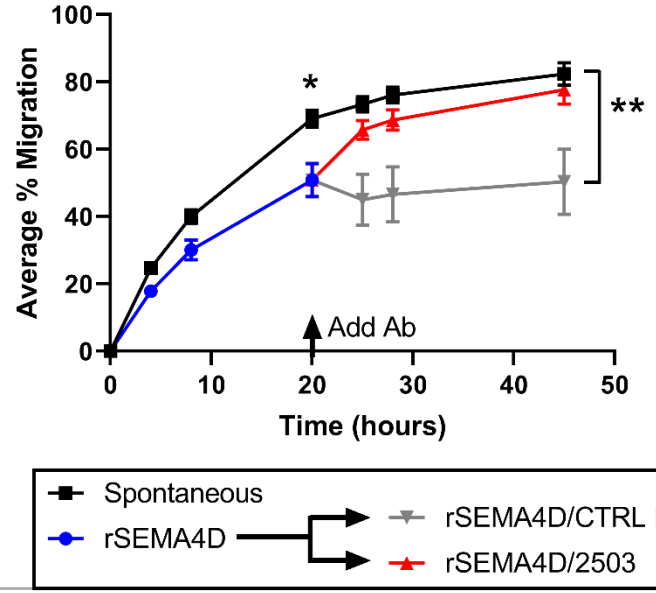
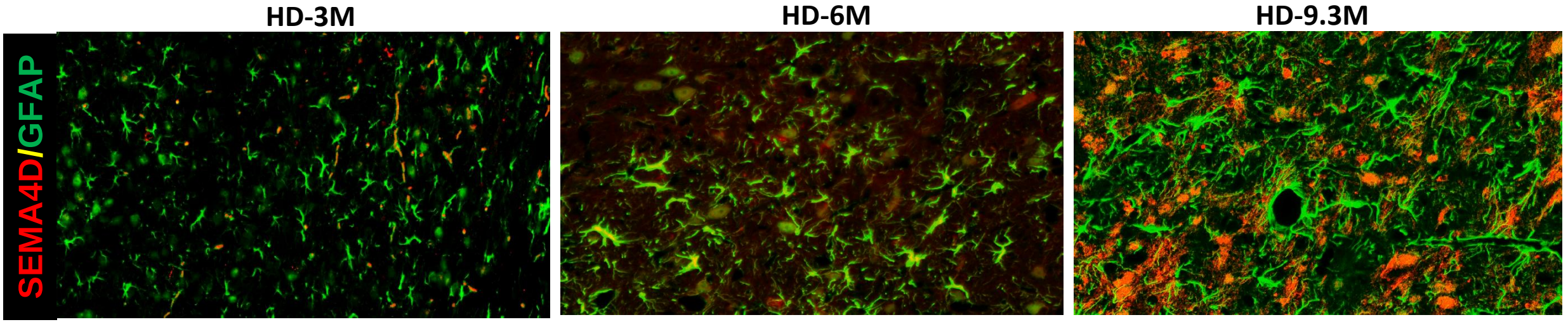


SEMA4D+ cells are in close proximity to PLXNB1+ astrocytes

Q175 transgenic mouse model of HD



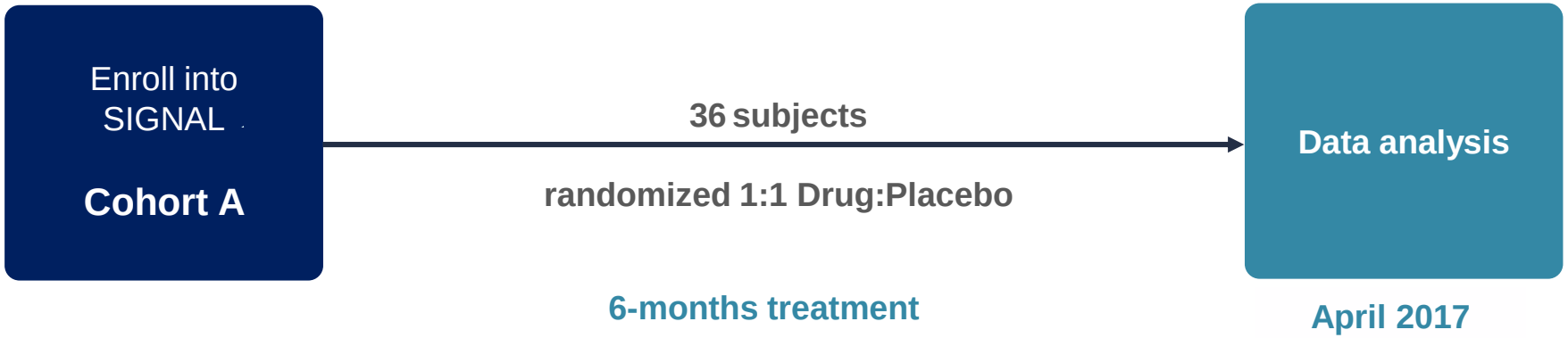
- Astrocytes transform to activated inflammatory state with disease progression
- Astrocytes express PlexinB receptors for SEMA4D, and are in close proximity to SEMA4D+ cells.

GFAP/SEMA4D staining of caudoputamen region of Balb/c control and Q175 knock-in HD mice. Representative images (20X) are shown from analysis of 3 mice/time-point. M = months of age.

Astrocytes Undergo Inflammatory Transformation that Aggravates Brain Damage in HD

- **Hypothesis: Blocking F-actin depolymerization will reduce inflammatory transformation and preserve normal astrocyte function. This will be reflected in increased glucose uptake.**

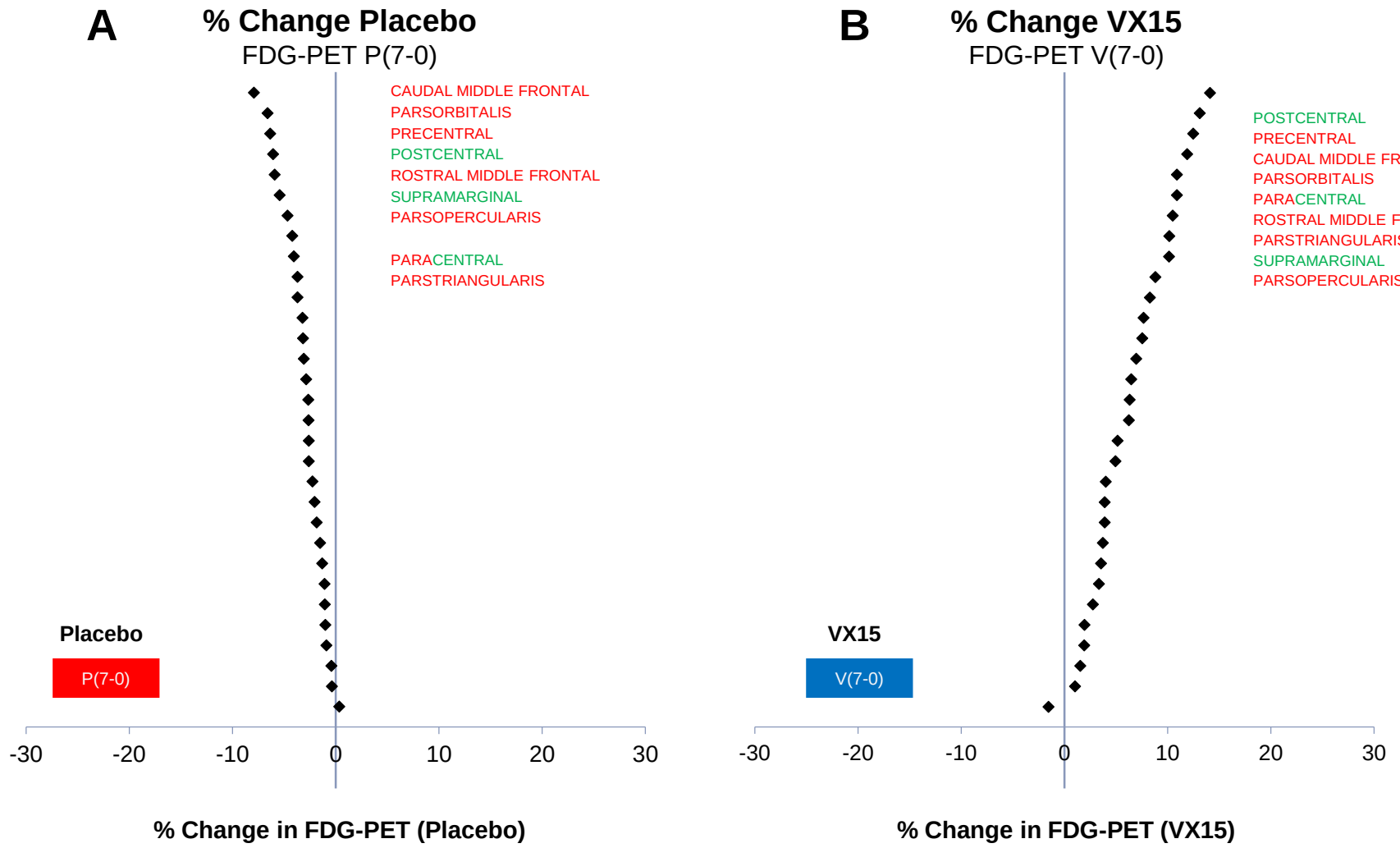
Huntington's Disease Clinical Trial Design: Cohort A



Cohort A provided important data to determine required sample size and treatment duration for potentially pivotal Cohort B study and also identified a biomarker of treatment effect

Disclaimer: VX15 (pepinemab) is under clinical investigation for the treatment of Huntington's disease and has not been demonstrated to be safe and effective for this indication. There is no guarantee that VX15 (pepinemab) will be approved for the treatment of Huntington's disease by the U.S. Food and Drug Administration or by any other health authority worldwide.

% Change from baseline for each treatment group (FDG-PET)



Left panel (A): Average change in FDG-PET signal for each brain region of interest (ROI) during 6 months of treatment in the placebo group (n=8) expressed as a % of baseline at start of treatment.
for each brain region of interest (ROI) during 6 months of treatment.

Right panel (B): Average change in FDG-PET signal for each ROI during 6 months of treatment in the VX15 group (n=11).

Each dot represents one of 31 ROI.
Left and Right hemispheres were highly correlated with Pearson correlation coefficient = 0.976 at $p<0.0001$. Only the mean of Left and Right is plotted for each ROI.

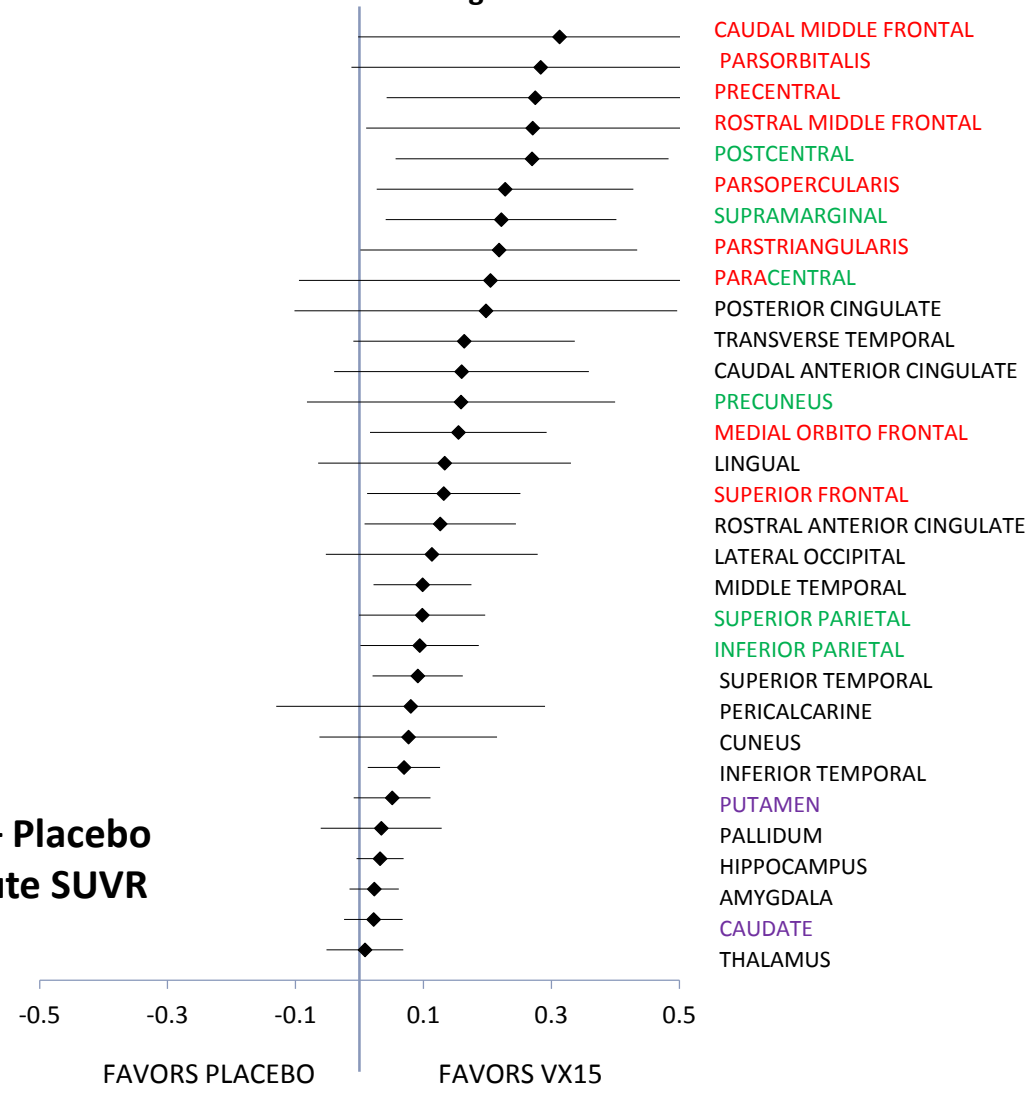
frontal lobe (red)

parietal lobe (green)

Clinical Trial: FDG-PET Treatment Effect - Mean Change Over 6 Months

C

FDG PET V(7-0)-P(7-0)
Difference in LS Means: Region AVEs

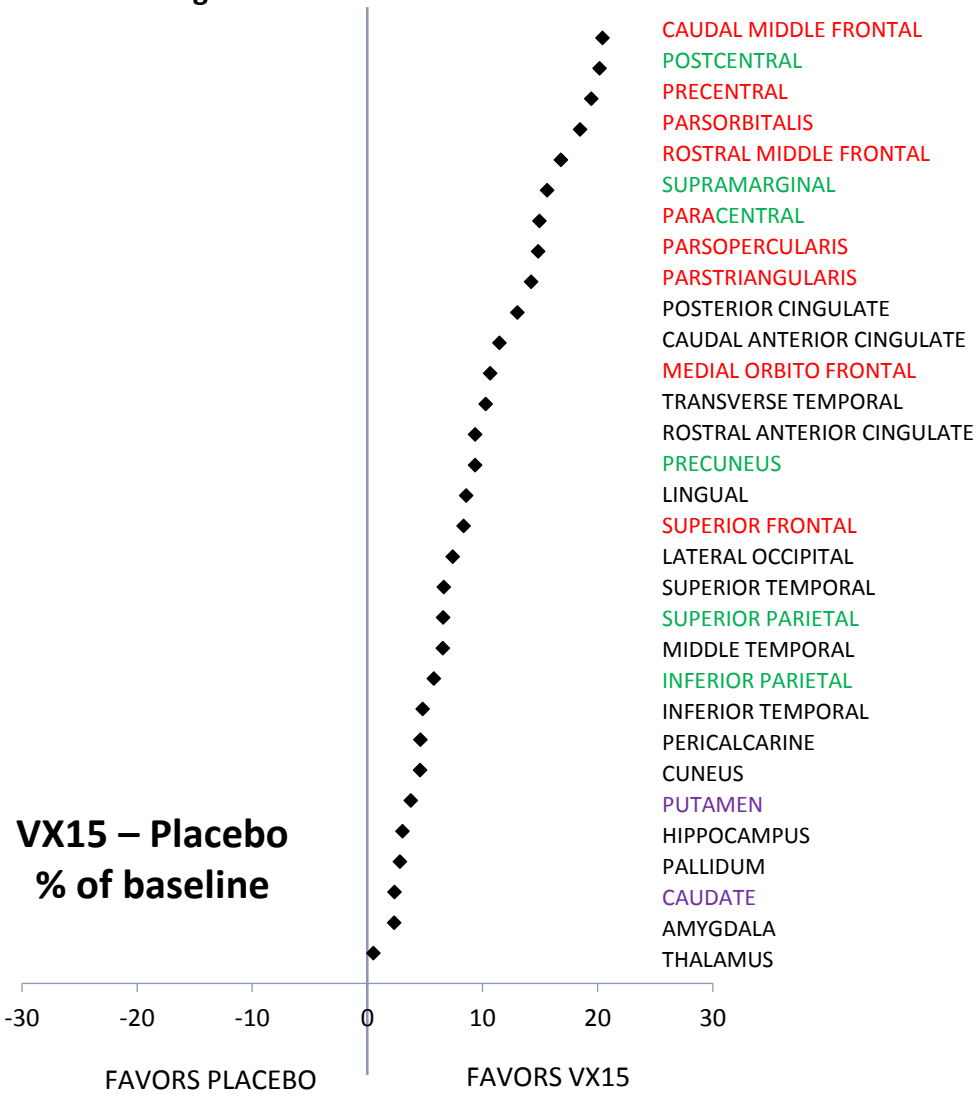


VX15 – Placebo absolute SUVR

Effect Size (difference in LS means)

D

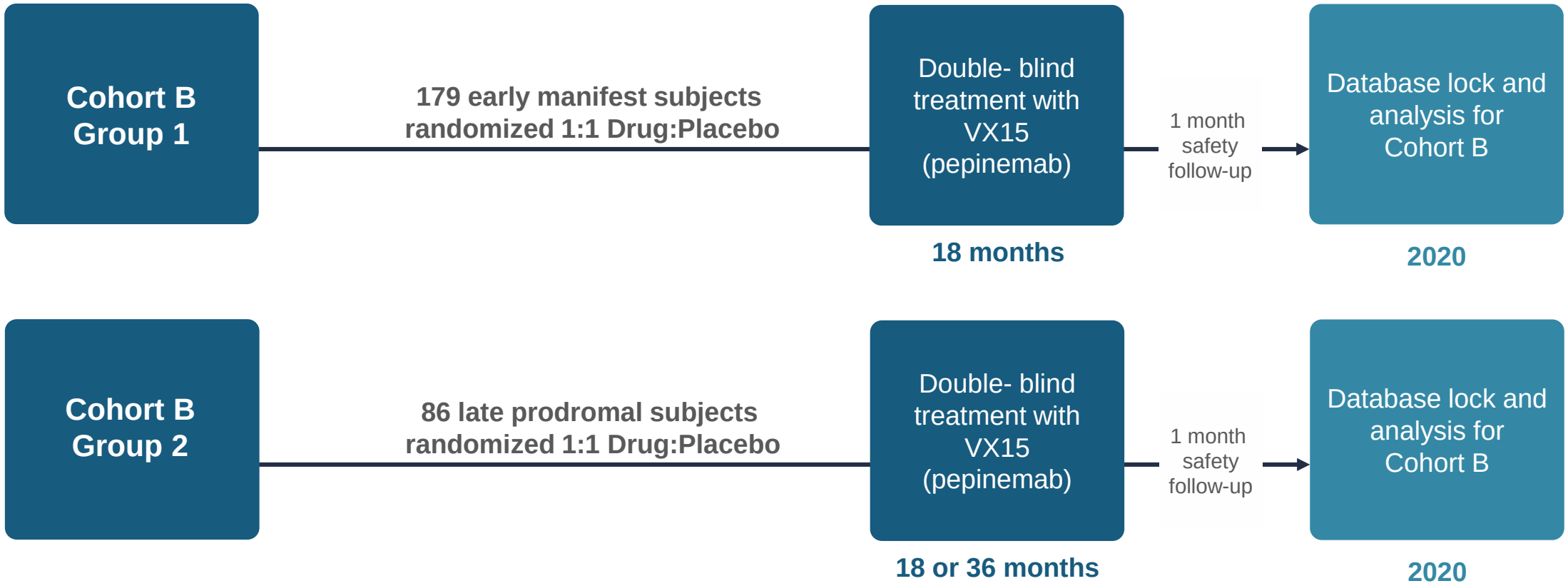
FDG PET V(7-0)-P(7-0)
% Change VX15 vs Placebo: REGION AVEs



VX15 – Placebo % of baseline

% Change in FDG PET (VX15 vs Placebo)

Huntington's Disease Clinical Trial Design: Cohort B

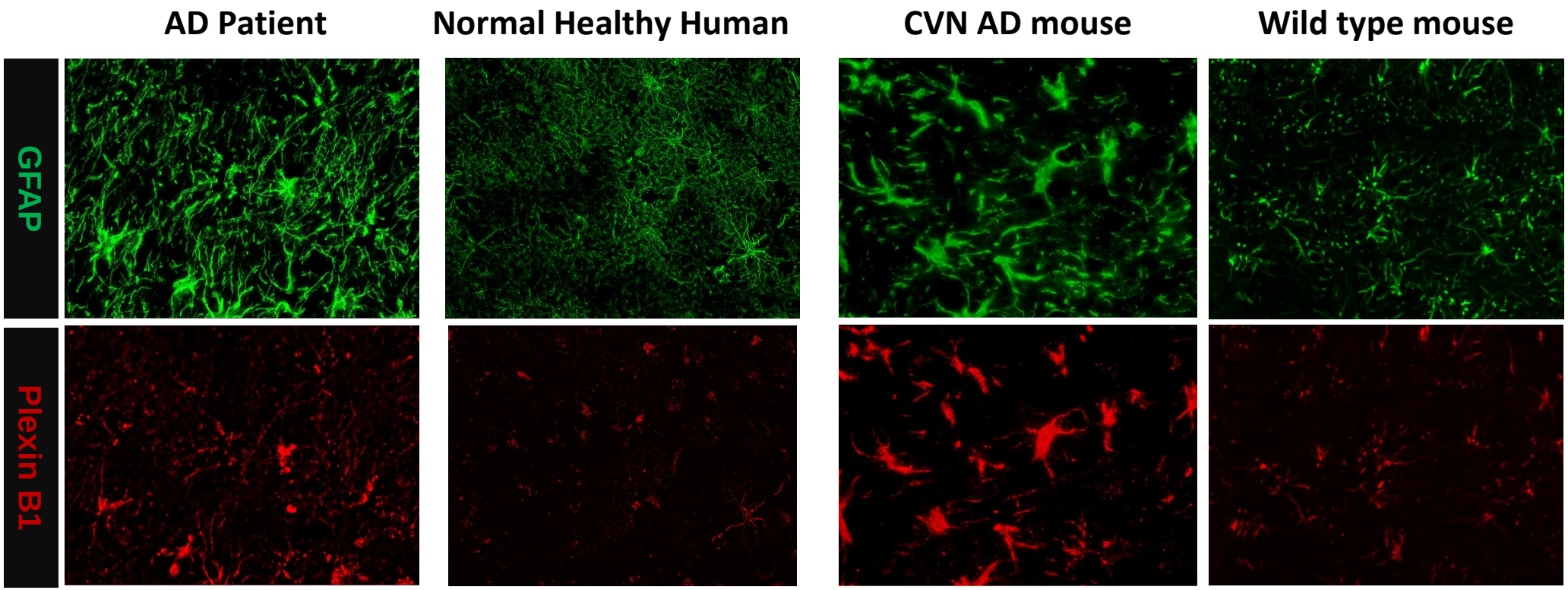


Enrollment in Cohort B was completed on December 31, 2018
Last patient last visit anticipated late June, 2020
Top-line data, November 2020

Plexin-B1 receptors for SEMA4D are also expressed on GFAP+ astrocytes in AD

Alzheimer's Disease brains

- Note change in GFAP+ cell morphology consistent with activated astrocytes in diseased brains
- **PLXNB1 is co-expressed on GFAP+ astrocytes**



Robust Patent Estate

VX15 (pepinemab) US Patents and Patent Applications

Key Composition of Matter Claims	**US No. 8,496,938 issued 7/30/13)** ***Expected Exclusivity to 2030 (before patent term extension)***
Key Additional Method of Use Claims for Treatment of Cancer and Neurodegenerative Diseases	US No. 9,243,9068 issued 1/26/16 US No. 9,249,227 issued 2/2/16 Filed: 2014 – 2015 Expected Exclusivity to 2035 (before patent term extension)

Total Patent Franchise	US	EU
Granted / allowed	26	11
Pending	15	13

Anticipated Milestones

Event	Timing
Publish SIGNAL Cohort A Data in Huntington's Disease	Q1 2020
Estimated Topline Clinical Data for combination therapy in **NSCLC**	Q1 2020
Estimated Topline Clinical Data for **SIGNAL Cohort B study in HD**	Q4 2020
Estimated Completion of combination Window-of-Opportunity studies at Emory University (Melanoma, HNSCC, colorectal and pancreatic cancer)	H1/H2 2020

Vaccinex Corporation

Clinical-stage immunotherapy company focused on the discovery and development of antibody therapies for neurodegenerative diseases and cancer

VCNX (NASDAQ)	
Recent close	$7.30 (09/20/2019)
Shares outstanding	14.9M
Market cap	$108.6M
Headquarters	Rochester, NY
Employees	45 (34 in R&D)
IPO (proceeds $40M)	August 2018
PIPE (proceeds $13.8M)	July 2019
Underwriters and Analysts	Oppenheimer, BTIG, Ladenburg