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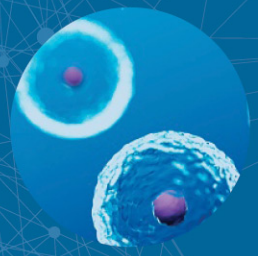
AGIOS 2025 VISION

March 2020 Corporate Presentation



Forward Looking Statements

This presentation and various remarks we make during this presentation contain forward-looking statements within the meaning of The Private Securities Litigation Reform Act of 1995. Such forward-looking statements include those regarding Agios' plans, strategies and expectations for its and its collaborator's preclinical, clinical and commercial advancement of its drug development programs including TIBSOVO® (ivosidenib), IDHIFA® (enasidenib), mitapivat, vorasidenib, AG-270 and AG-636; the potential benefits of Agios' product candidates; Agios's strategic vision and goals for 2025; its key milestones for 2020; its estimates regarding its balance of cash, cash equivalents and marketable securities for the year ended December 31,2019; its plans regarding future data presentations; its financial guidance regarding the period in which it will have capital available to fund its operations; and the potential benefit of its strategic plans and focus. The words "anticipate," "expect," "hope," "milestone," "plan," "potential," "possible," "strategy," "will," "vision," and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. Such statements are subject to numerous important factors, risks and uncertainties that may cause actual events or results to differ materially from Agios' current expectations and beliefs. For example, there can be no guarantee that any product candidate Agios or its collaborators is developing will successfully commence or complete necessary preclinical and clinical development phases, or that development of any of Agios' product candidates will successfully continue. There can be no guarantee that any positive developments in Agios' business will result in stock price appreciation. Management's expectations and, therefore, any forward-looking statements in this presentation and various remarks we make during this presentation could also be affected by risks and uncertainties relating to a number of other important factors, including: Agios' results of clinical trials and preclinical studies, including subsequent analysis of existing data and new data received from ongoing and future studies; the content and timing of decisions made by the U.S. FDA, the EMA or other regulatory authorities, investigational review boards at clinical trial sites and publication review bodies; Agios' ability to obtain and maintain requisite regulatory approvals and to enroll patients in its planned clinical trials; unplanned cash requirements and expenditures; competitive factors; Agios' ability to obtain, maintain and enforce patent and other intellectual property protection for any product candidates it is developing; Agios' ability to maintain key collaborations; and general economic and market conditions. These and other risks are described in greater detail under the caption "Risk Factors" included in Agios' public filings with the Securities and Exchange Commission. Any forward-looking statements contained in this presentation and various remarks we make during this presentation speak only as of the date hereof, and Agios expressly disclaims any obligation to update any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law.

We are driven by our sense of urgency to help patients.

"On a bad day, it's like watching some electronic toy slowly lose the battery."
—Tamara S., Minnesota

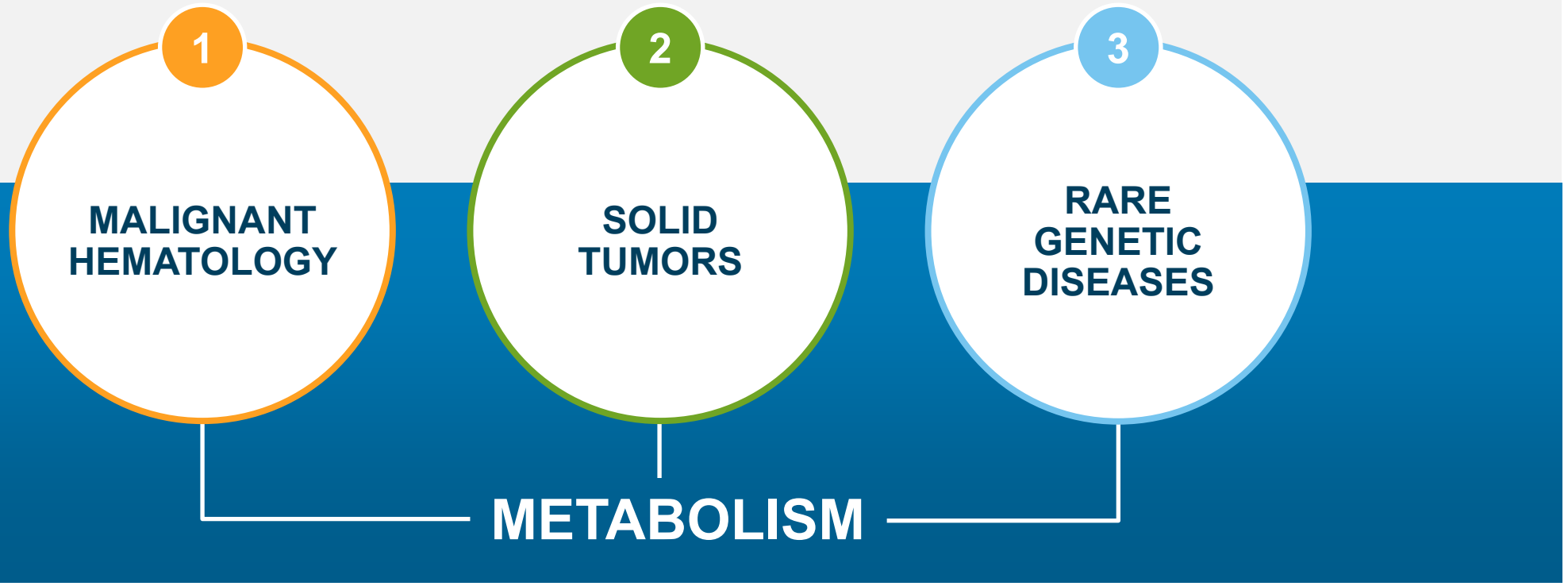
"The disease has affected my career. I spent 11 years to get a PhD in nutrition...My heart wants more but my body can't handle it."

—Tamara S., Minnesota

Currently 50 years old. Diagnosed with PK deficiency at the age of 6.

Our Strategy is Clear

For more than a decade, our mission has been to create differentiated, small molecule medicines for patients in three focus areas – malignant hematology, solid tumors and rare genetic diseases – based on our unique expertise in cellular metabolism and adjacent areas of biology



Our People and Culture Fuel Incredible Productivity, Strategic Focus and Continuity from Early Research to Market

10 YEARS

Productive Research Engine	Creative Clinical Development	Patient-centric Approach	"Other Side Of Possible" Culture
7 INVESTIGATIONAL NEW DRUG CANDIDATES	**70+** PEER-REVIEWED PUBLICATIONS	**15+** RESEARCH PROGRAMS	**1,500+** PATIENTS TREATED IN OUR CLINICAL TRIALS

2 MEDICINES APPROVED **+ 4** ADDITIONAL MOLECULES IN CLINICAL DEVELOPMENT

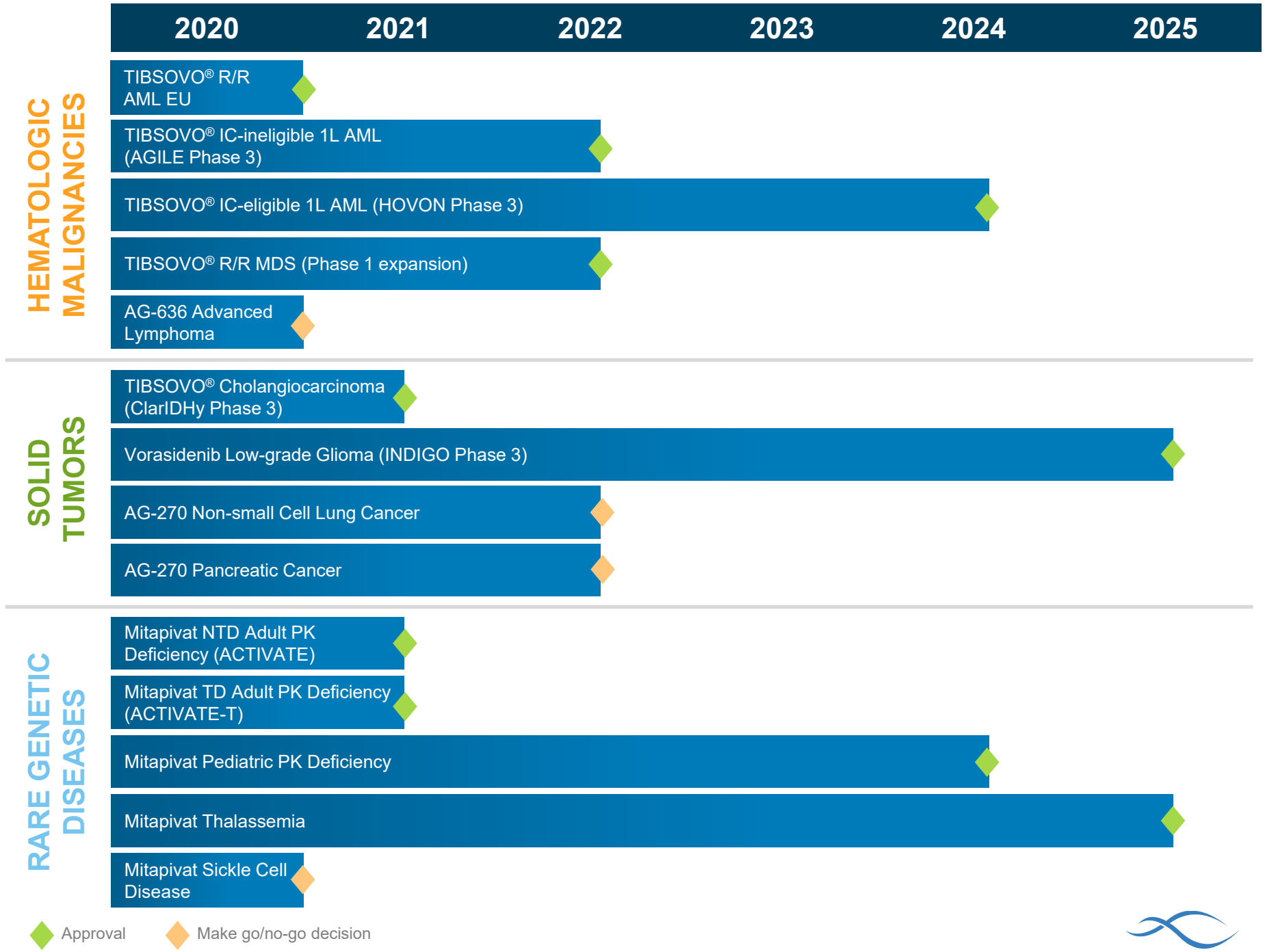
~550

HIGH CALIBER EMPLOYEES WITH 1 VISION

Agios 2025 Vision: Focused Innovation. Ambitious Development. Transformative Treatments for Patients Across Three Focus Areas.

	NOW	2025
COMMERCIAL	2 MEDICINES	4 MEDICINES
LABEL EXPANSION	2 INDICATIONS	8+ INDICATIONS
PRODUCTIVE DISCOVERY ENGINE	4 MOLECULES IN THE CLINIC	6+ MOLECULES IN THE CLINIC
FINANCIAL	$105-115M EXPECTED U.S. TIBSOVO® 2020 REVENUE	CASH FLOW POSITIVE

Multiple Potential Near- and Long-term Value Drivers Across All Focus Areas



Highly Productive Research Engine with Optionality Across Focus Areas

Program	Target Discovery	Target Validation	Drug Discovery	Drug Candidate
Malignant Hematology				
MAT2A Follow-Ons			●	
Macrophage I-O Target			●	
Tumor I-O Target			●	
Genetically Defined Heme Target			●	
Metabolic I-O Exploratory Programs	●	●		
Other Exploratory Programs	●	●		
Solid Tumor				
MAT2A Follow-Ons			●	
Macrophage I-O Target			●	
Tumor I-O Target			●	
Genetically Defined Solid Tumor Target			●	
Metabolic I-O Exploratory Programs	●	●		
Other Exploratory Programs	●	●		
Rare Genetic Diseases				
AG-946 (Pyruvate Kinase Activator Follow-On)				●
Phenylketonuria (PKU)			●	
Erythroid Porphyria			●	
Friedreich's Ataxia			◐	
Other Exploratory Programs	◐	◐		

● Metabolic Target ● Non-Metabolic Target ◐ Metabolic and Non-Metabolic Targets ▬ Bristol-Myers Squibb Collaboration

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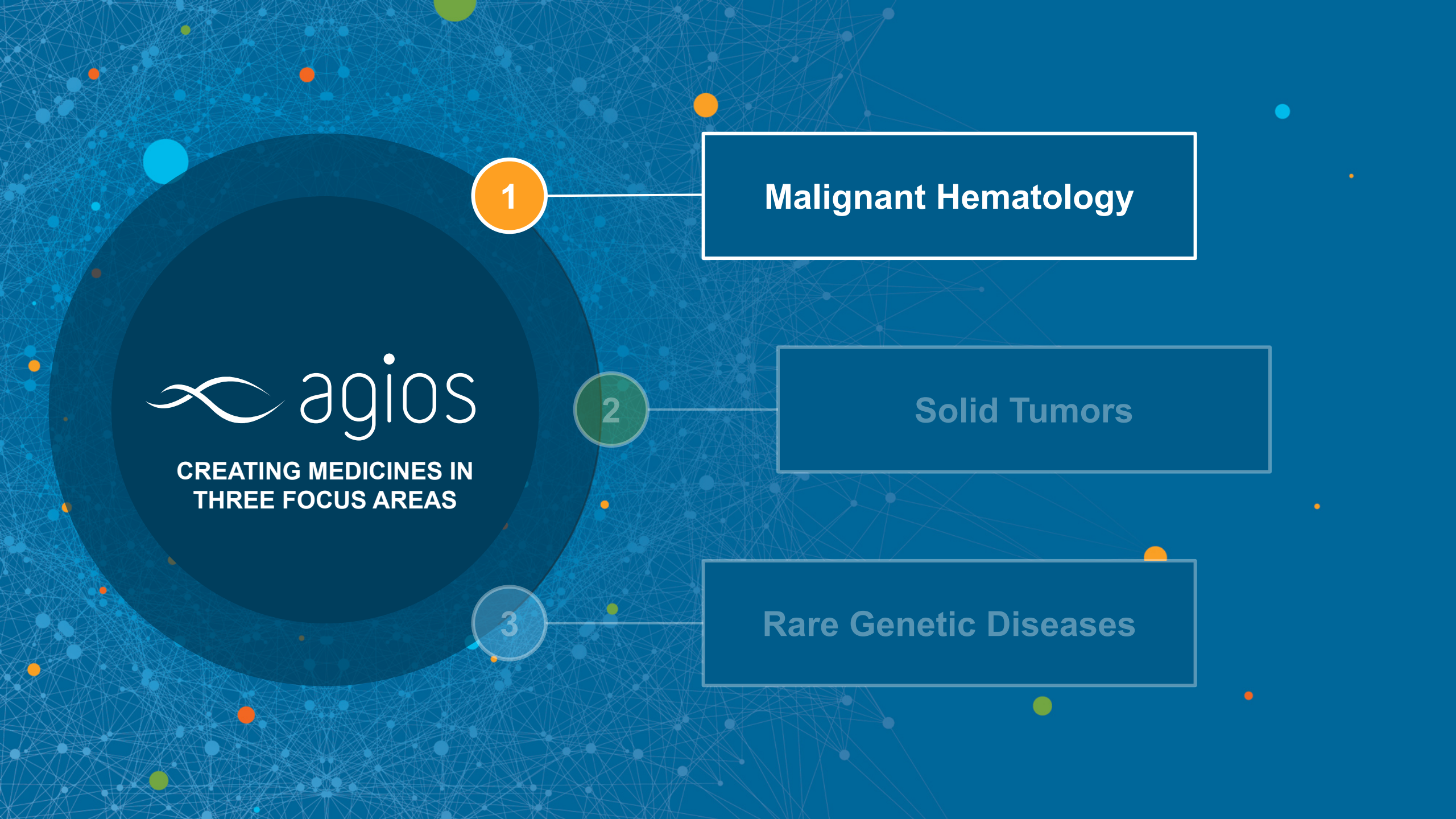
CREATING MEDICINES IN THREE FOCUS AREAS

1. Malignant Hematology
2. Solid Tumors
3. Rare Genetic Diseases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Significant Growth Potential in Malignant Hematology

~4K PATIENTS IN U.S. & EU

IDH1 Mutant Acute Myeloid Leukemia (AML)

TIBSOVO®

R/R AML	U.S. Approval; MAA Under Review
1L Monotherapy	U.S. Approval
1L HMA Combo	Phase 3
1L 7+3 Combo	Phase 3

<1K PATIENTS IN U.S.

IDH1 Mutant Myelodysplastic Syndrome (MDS)

TIBSOVO®

R/R MDS	Phase 1 Expansion

~55K PATIENTS IN U.S. & EU

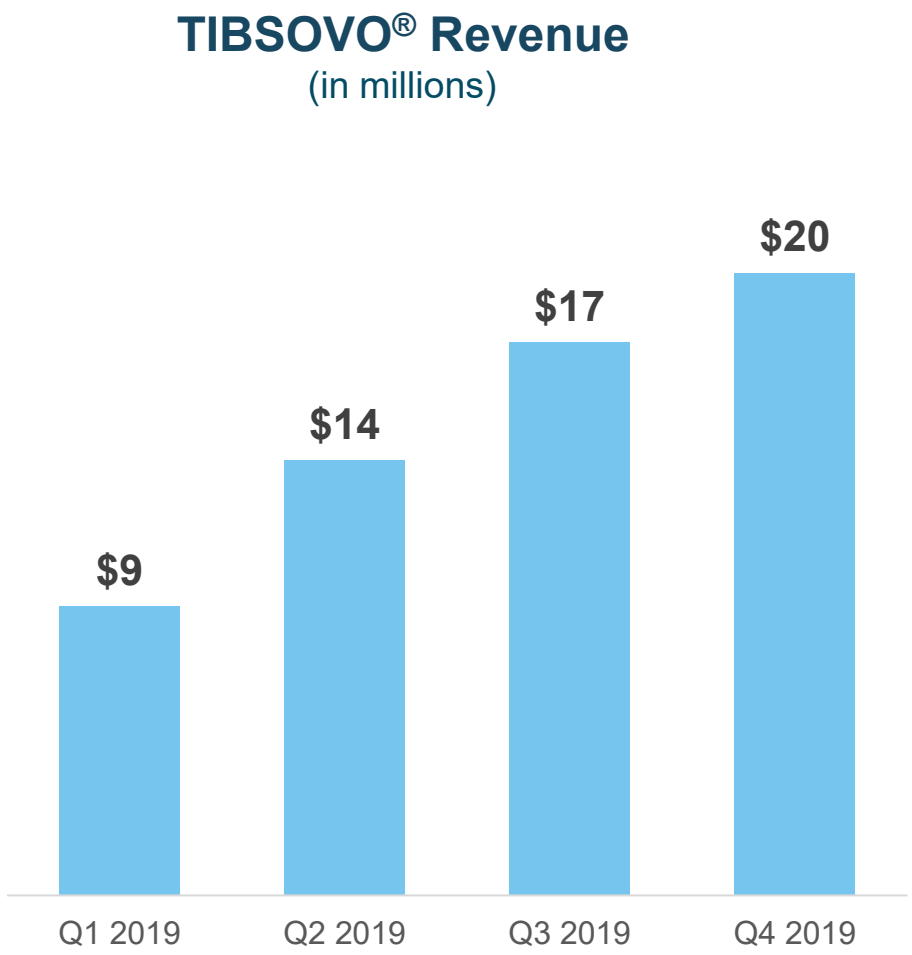
Mantle Cell and Diffuse Large B Cell Lymphoma

AG-636

R/R Lymphoma	Phase 1

Source: Agios estimates, market research, SEER, MDS Foundation, Datamonitor

Successful TIBSOVO® Launch in R/R and Frontline AML Result of Focused Commercial Effort



$60M
Full Year 2019 Product Revenue

$105 – 115M
U.S. Net Sales Guidance for 2020

~515
Unique Prescribers as of Q4 2019

>1,000
Patients Treated Since Launch

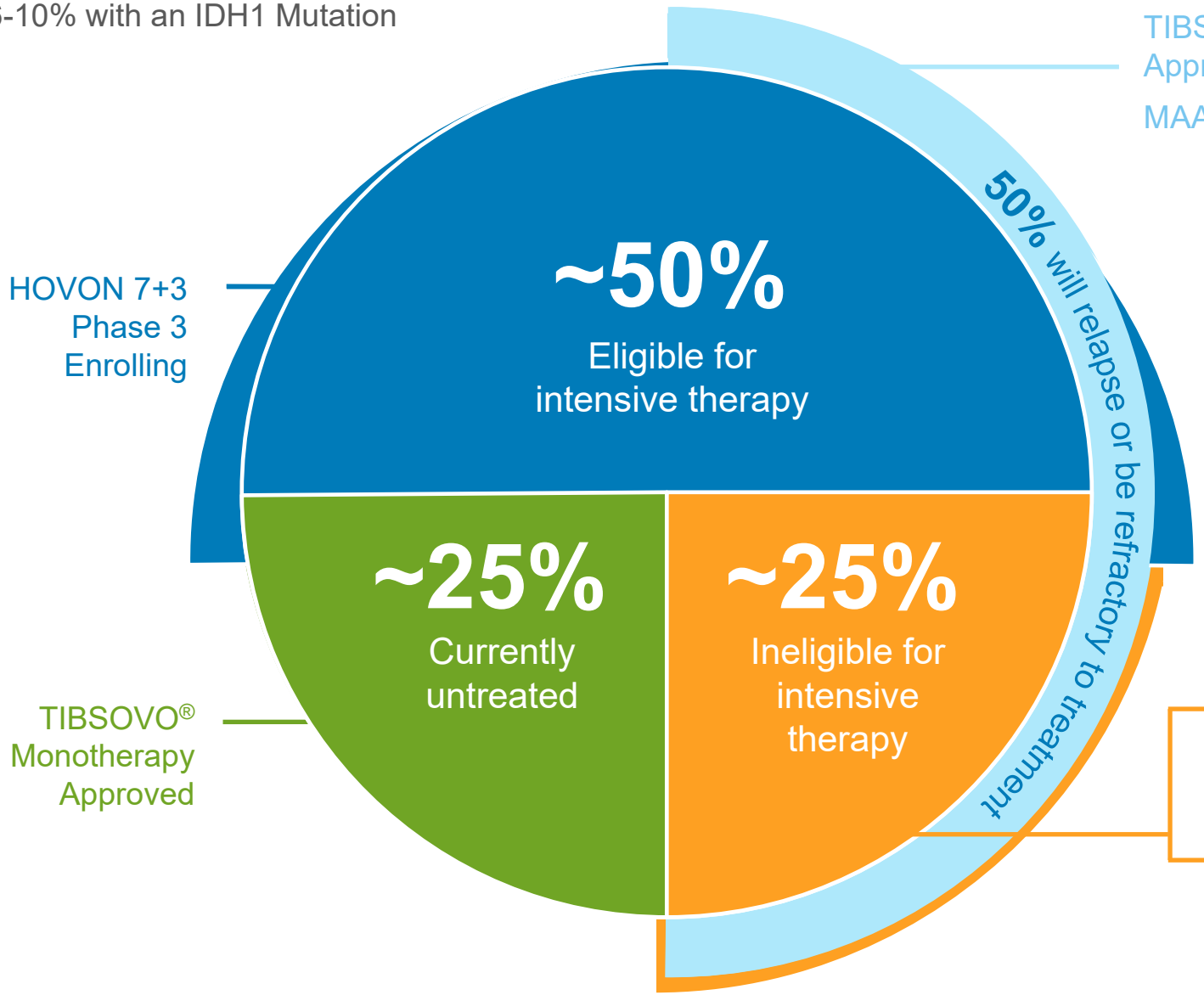
Source: Agios estimates

Core commercial capabilities support two additional TIBSOVO® indications by YE 2022

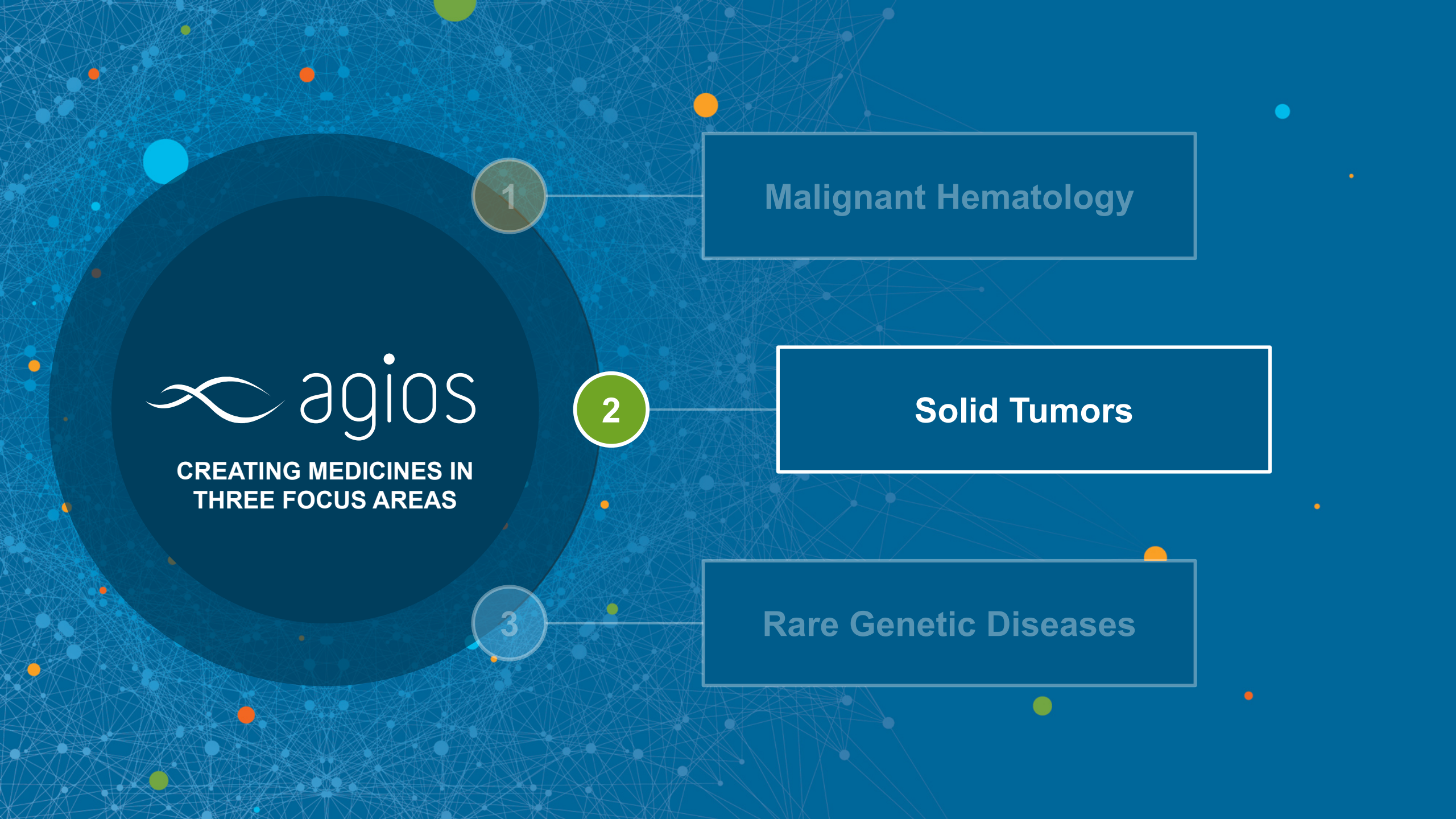
Advancing Toward Largest Opportunity for mIDH1 AML: Intensive and Non-Intensive Therapy Combinations

50K AML Patients Diagnosed Per Year in U.S. and EU

6-10% with an IDH1 Mutation



Sources: SEER. Cancer Stat Facts: AML 2015 and Epiphany EPIC oncology numbers; American Cancer Society. AML 2017.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Four Distinct Solid Tumor Opportunities Across Three Clinical Molecules

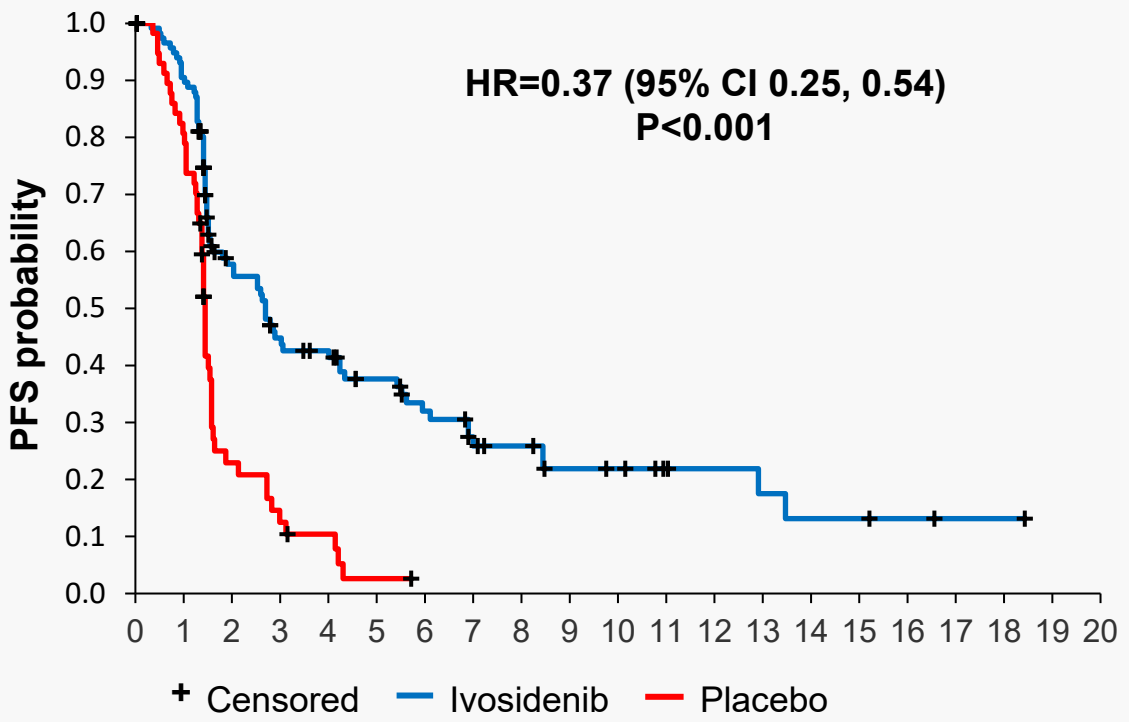
~2-3K PATIENTS IN U.S. & EU	~9K PATIENTS IN U.S. & EU	~9K PATIENTS IN U.S.	~10K PATIENTS IN U.S.
IDH1 Mutant Cholangiocarcinoma	**IDH Mutant Low Grade Glioma**	**MTAP-Deleted Non-Small Cell Lung Cancer**	**MTAP-Deleted Pancreatic Cancer**
TIBSOVO®	**Vorasidenib**	**AG-270**	**AG-270**
R/R Cholangio sNDA 2020	**Low-grade Glioma** Phase 3	**2nd Line NSCLC** Phase 1 Combo	**1st or 2nd Line Pancreatic Cancer** Phase 1 Combo

Source: Agios estimates, market research

Established Utility of IDH Inhibition in Solid Tumors with Positive ClarIDHy Phase 3 Study of TIBSOVO® in Second-line or Later Cholangiocarcinoma

Mature OS from ClarIDHy Phase 3 expected mid-2020; sNDA planned by YE

Phase 3 ClarIDHy Study Achieved Primary Endpoint, Demonstrating Statistically Significant Improvement in PFS



LOW SURVIVAL RATES

~9%

FIVE-YEAR OVERALL SURVIVAL RATE

FEW TREATMENT OPTIONS

0

APPROVED THERAPIES FOR mIDH1 PATIENTS

POSITIVE CLARIDHY RESULTS

63%

REDUCTION IN RISK OF DISEASE PROGRESSION OR DEATH FOR PATIENTS TREATED W/ TIBSOVO®

Sources: CDC National Program of Cancer Registries (NPCR); Epiphany Partners Epic Oncology; Decision Resources; Market Research; Borger DR et al. Oncologist 2012;17:72-9.; Kipp BR et al. Hum Pathol 2012;43:1552-8.; Goyal L et al. Oncologist 2015;20:1019-27; data from ESMO 2019

Global Phase 3 INDIGO Study of Vorasidenib in IDH Mutant Low-Grade Glioma Open and Enrolling

SIGNIFICANT 2-HG SUPPRESSION

>90%

2-HG SUPPRESSION IN RESECTED mIDH1 GLIOMAS ACROSS ALL DOSES TESTED

IMPRESSIVE PRELIMINARY EFFICACY DATA

33% ORR

IN THE VORASIDENIB ARM OF THE PERIOPERATIVE STUDY

ENCOURAGING PHASE 1 DATA

22 mo.

MEDIAN TREATMENT DURATION IN VORASIDENIB PHASE 1

INDIGO | INVESTIGATING VORASIDENIB IN GLIOMA

1:1 double-blind randomization (n=366)

Stratified by 1p19q status and baseline tumor size

- Vorasidenib 50 mg QD orally Continuous 28-day cycles (n=183)
- Matched placebo* (n=183)

*centrally-confirmed progressive disease will permit unblinding and crossover

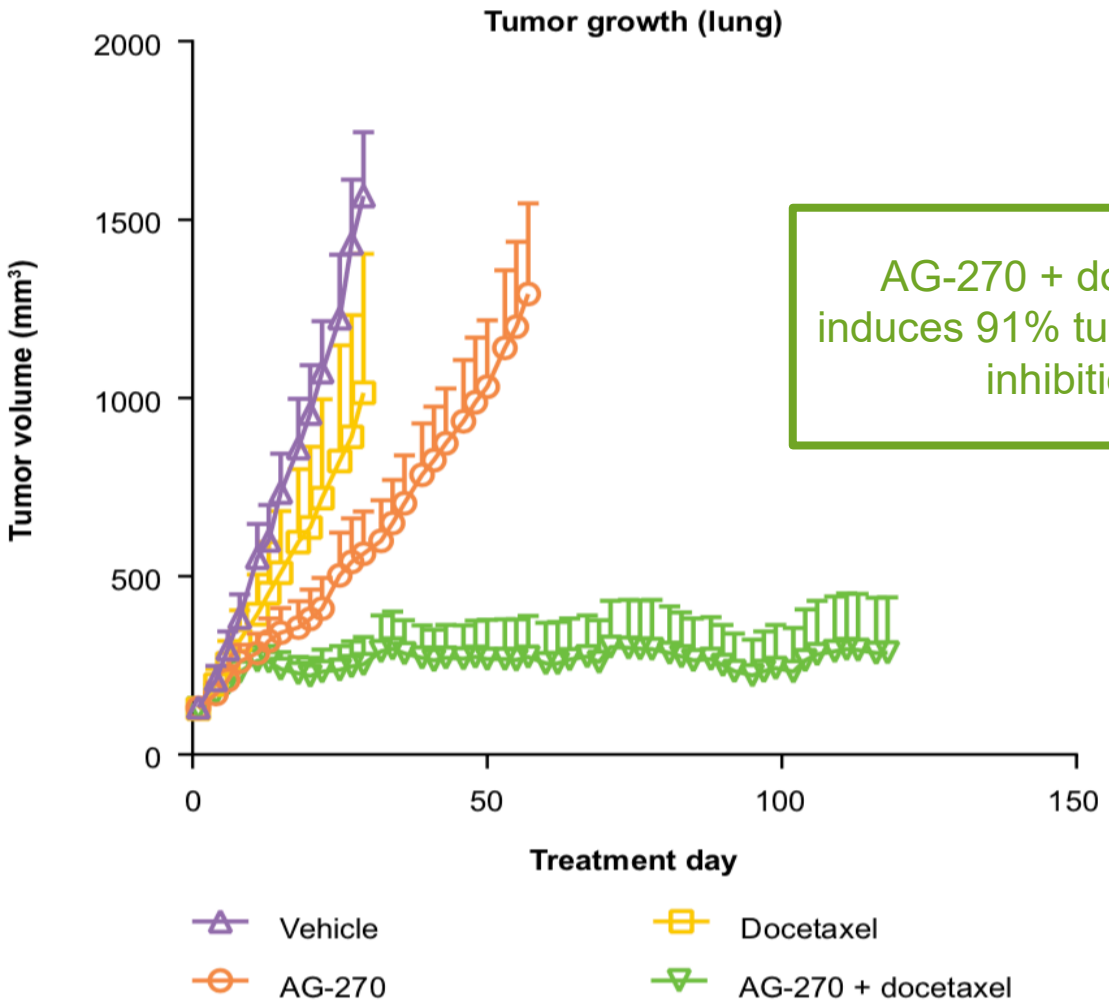
Endpoints

Primary: Progression free survival (by BIRC)

Secondary/Exploratory: Tumor volume, safety, ORR, OS, QOL, seizures, neuro-cognitive function, time to next intervention

BIRC = blinded independent review committee, ORR = overall response rate, OS = overall survival, QOL = quality of life, WHO = World Health Organization; Source: Data presented at SNO 2019

AG-270, MAT2A Inhibitor, Preclinical Data Supports Combination with Taxanes; Two Phase 1 Combination Arms Enrolling Patients



AG-270 + docetaxel induces 91% tumor growth inhibition

4 of 8 animals were tumor free at last dose and remained tumor free until the arm was terminated on Day 141

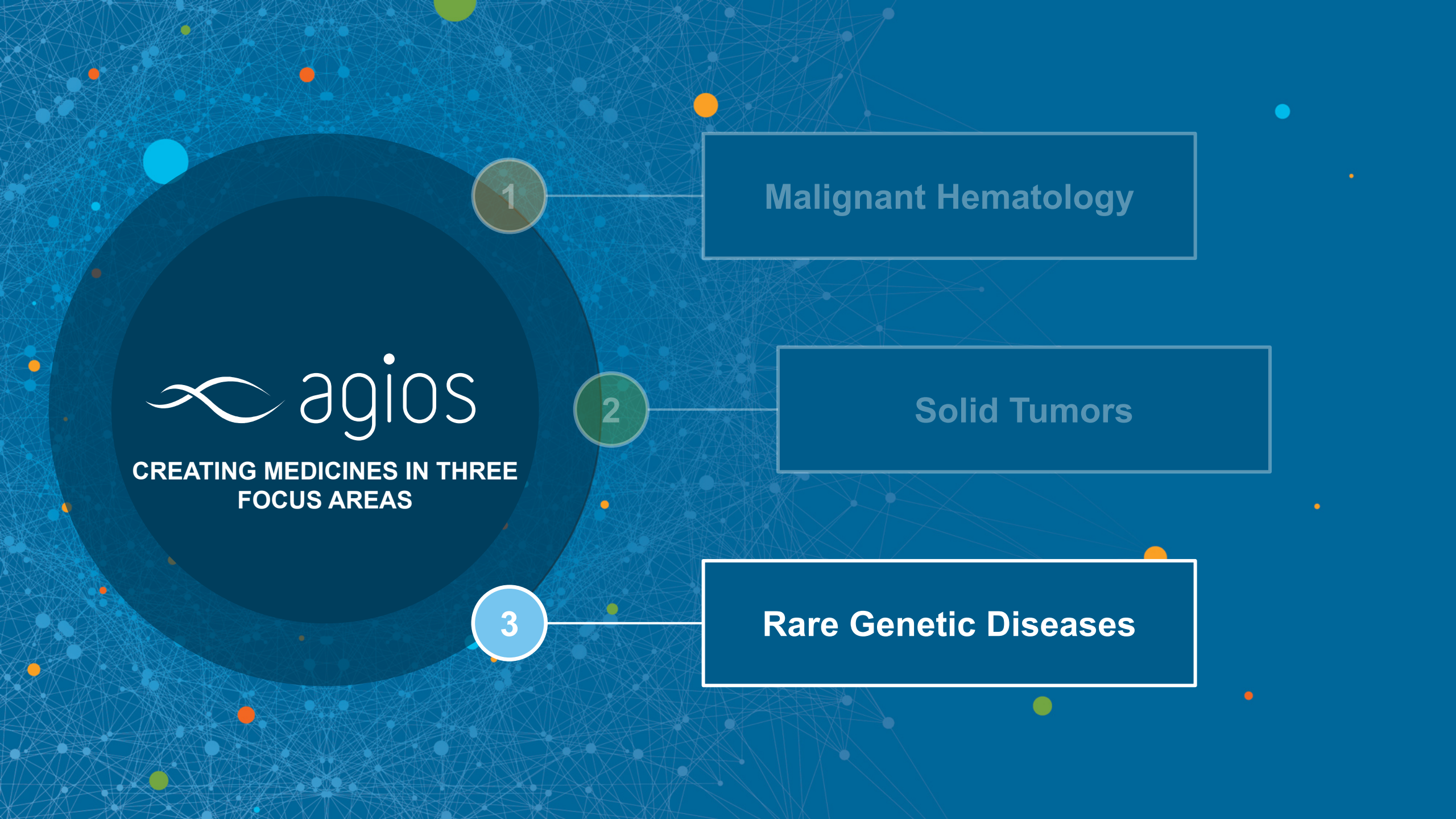
Source: Data presented at AACR-NCI-EORTC 2019

PHASE 1 COMBINATION ARMS INITIATED

AG-270 + docetaxel in MTAP-deleted NSCLC (2^{nd} line)
N = up to 40

AG-270 + nab-paclitaxel and gemcitabine in MTAP-deleted pancreatic ductal adenocarcinoma (1^{st} or 2^{nd} line)
N = up to 45

Modest near-term investment to enable pivotal strategy decision by YE2022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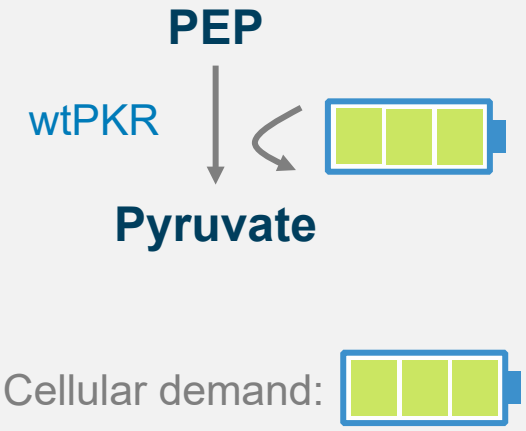
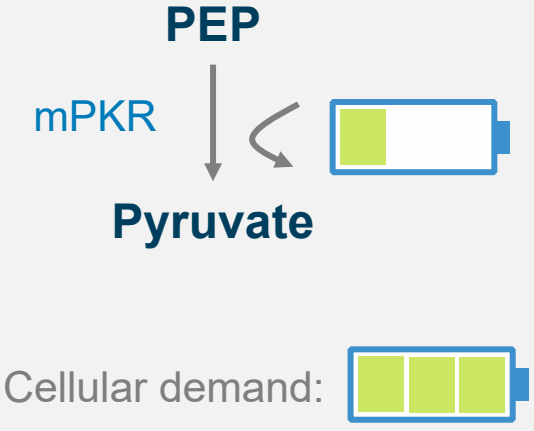
PKR Activation Represents Unique Mechanism of Action with Potential to Address Broad Range of Hemolytic Anemias

Normal Red Cell



ATP production meets demand

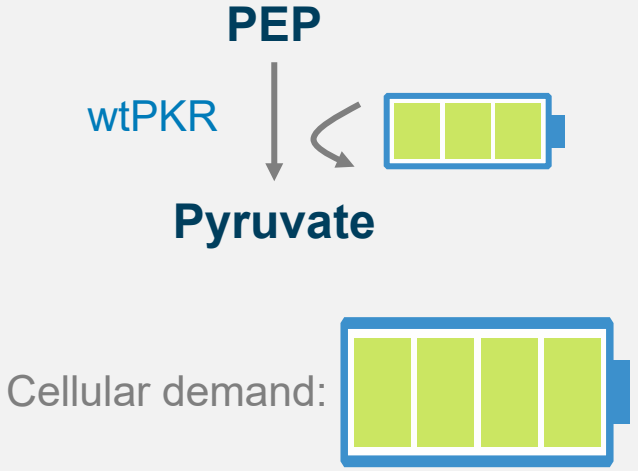
Pyruvate Kinase Deficiency



Inadequate production: ATP deficiency

- Proof-of-concept achieved
- Adult PK deficiency approval expected in 2021
- Pediatric PK deficiency pivotal strategy to be finalized in 2020

Other Hemolytic Anemias

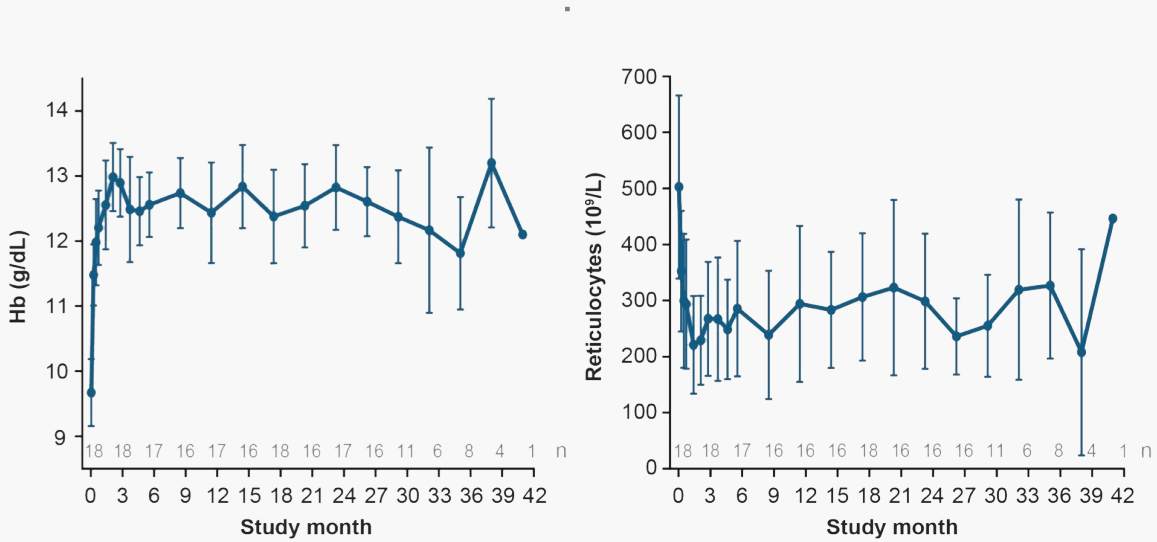


Increased demand: ATP deficiency

- Thalassemia proof-of-concept achieved
- NIH sponsored trial in sickle cell disease ongoing

Mitapivat has Potential to be First Disease-modifying Therapy for Patients with PK Deficiency

Improvements in Hemoglobin and Other Hemolysis Markers Maintained for More Than 3 Years in Responding Patients from DRIVE PK Extension



Chronic daily dosing with mitapivat for a median of 3 years and up to 42 months was well tolerated

COMPLICATIONS & COMORBIDITIES REGARDLESS OF TRANSFUSION STATUS

HIGHER LIFETIME RATES OF PULMONARY HYPERTENSION, OSTEOPOROSIS, AND LIVER CIRRHOSIS

SUPPORTIVE CARE ONLY

0

APPROVED THERAPIES

HIGH RISK OF IRON OVERLOAD

38%

OF PATIENTS NOT RECEIVING REGULAR TRANSFUSIONS EXPERIENCE IRON OVERLOAD

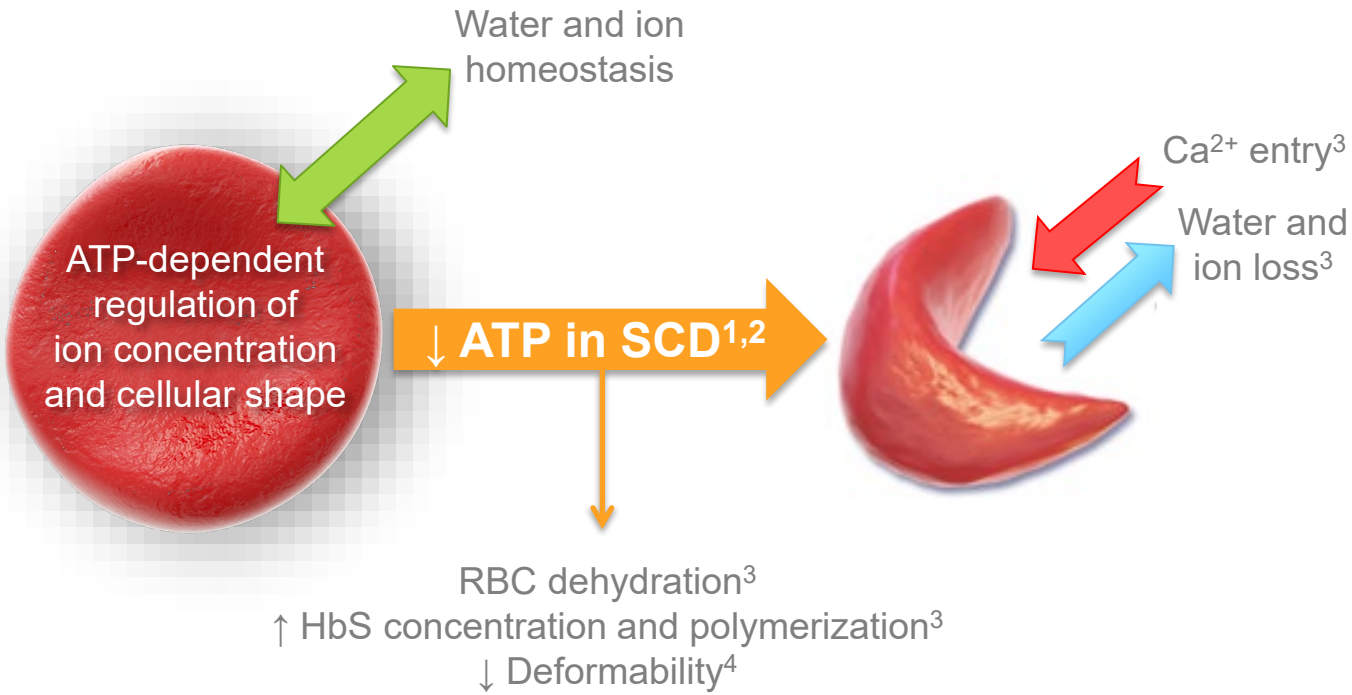
Source: Data presented at ASH 2019; van Beers EJ, et al. Haematologica. 2019;104(2):e51-e53.

Topline data from ACTIVATE and ACTIVATE-T expected by YE 2020

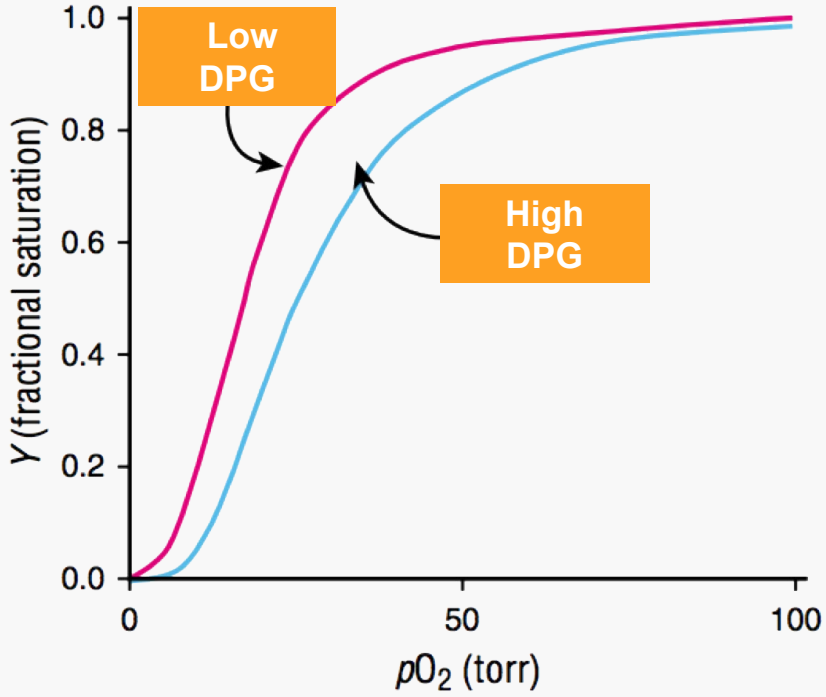
Clinical Proof-of-concept for Mitapivat Established in Non-transfusion-dependent Thalassemia

- 7 of 8 efficacy evaluable patients achieved a hemoglobin increase of ≥1.0 g/dL from baseline in at least one assessment (weeks 4 – 12)
- In responding patients, the mean hemoglobin increase from baseline was 1.76 g/dL (range, 0.9 – 3.3 g/dL)
- Majority of adverse events were Grade 1 or 2 and consistent with previously published Phase 2 data for mitapivat in patients with PK deficiency
- Updated Phase 2 thalassemia data to be submitted for presentation at EHA and pivotal strategy to be finalized by YE 2020

Therapeutic Hypothesis for Wildtype PKR Activation in Sickle Cell Disease: 2,3-DPG and ATP Modulation Improves Anemia and Reduces Sickling



2,3-DPG Shifts the Oxygen Saturation Curve



ATP, adenosine triphosphate; HbS, sickle cell hemoglobin; RBC, red blood cell; SCD, sickle cell disease.

1. Palek J, Liu SC. J Supramol Struct. 1979;10(1):79-96. 2. Glader BE, et al. Br J Haematol. 1978;40(4):527-32.
3. Bogdanova A, et al. Int J Mol Sci. 2013;14(5):9848-72. 4. Park Y, et al. Proc Natl Acad Sci USA. 2010;107(4):1289-94.

Expect to establish proof-of-concept for PKR activation in sickle cell disease by mid-2020

PKR Activation Has Potential Broad Utility Across Hemolytic Anemias

~3-8K PATIENTS IN U.S. & EU

Pyruvate Kinase Deficiency

NTD Adult PKD	Phase 3 Enrollment Closed
TD Adult PKD	Phase 3 Enrollment Closed
Pediatric PKD	Pivotal Plan by YE

~18-23K PATIENTS IN U.S. & EU

β- and α-Thalassemia

NTD β- and α-Thalassemia	Phase 2
Thalassemia	Pivotal Plan by YE

~120-135K PATIENTS IN U.S. & EU

Sickle Cell Disease

Adult SCD	NIH CRADA

Source: Agios estimates, market research

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Agios 2020 Key Milestones

HEMATOLOGIC MALIGNANCIES

- Achieve full-year U.S. revenue for TIBSOVO® $105-115M
- Receive CHMP opinion for TIBSOVO® in mIDH1 relapsed/refractory AML
- Complete enrollment in AGILE Phase 3 trial of TIBSOVO® + azacitidine in frontline mIDH1 AML
- Complete enrollment in MDS arm of TIBSOVO® Phase 1

SOLID TUMORS

- File sNDA for TIBSOVO® in mIDH1 previously treated cholangiocarcinoma

RARE GENETIC DISEASES

- Topline data in PK deficiency from ACTIVATE and ACTIVATE-T
- Present data from mitapivat Phase 2 thalassemia study and finalize pivotal trial strategy in thalassemia
- Achieve proof-of-concept for mitapivat in sickle cell disease
- Initiate first-in-human study for next generation PKR activator, AG-946

RESEARCH

- Achieve at least 1 new development candidate


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AGIOS 2025 VISION:
Focused Innovation. Ambitious Development.
Transformative Treatments for Patients Across Three Focus Areas.
4
MEDICINES
8+
INDICATIONS
6+
MOLECULES IN THE CLINIC
$
CASH FLOW POSITIVE