

## Agenus Enabling Partners

Agenus has developed a broad portfolio of innovative I-O agents and platforms. Our highly productive discovery engine has enabled us to outpace industry standards. To learn how, please see [Issue 4](#). We have formed partnerships with leading biopharma companies (GSK, Merck, and Incyte) to maximize the market opportunity of our pipeline. Our expertise in cancer immunology as well as our suite of discovery capabilities have helped advance each of our partnered programs towards important value inflection points, including commercial launch, over the past year.

### Agenus' QS-21 Enables GSK Vaccines



Agenus' proprietary QS-21 Stimulon® is believed to be one of the most potent adjuvants known. It is derived from a saponin extract of the Chilean soap bark tree. QS-21 Stimulon® is a key component in several GSK vaccines, including the most efficacious shingles vaccine, Shingrix®, which has demonstrated >90% efficacy, as well as the first ever malaria vaccine, Mosquirix®.

QS-21 Stimulon® improves a vaccine's effectiveness by inducing strong antibody and cell-mediated immune responses. It also plays a key role by boosting immune response in older adults who often experience age-related decline in immunity. In October 2017, the U.S. Food and Drug Administration (FDA) granted marketing authorization to GSK for Shingrix® for the prevention of shingles in adults aged 50 years and older. The Center for Disease Control and Prevention recently declared Shingrix® as the preferred shingles vaccine for approximately 62 million eligible adults in the United States. As a result, Shingrix® revenues have exceeded expectations, **tripling** analyst estimates for 2018, its first year of commercial sales. GSK has forecast that annual revenues will exceed \$600M this year – comparable to the \$668M in revenues generated by Zostavax in 2017 after >10 years on the market. Additionally, in 2017, the World Health Organization announced that Mosquirix® will be made available to select African countries as a prophylactic measure targeted for young children.

## Agenus Has Enabled Merck to Deliver a First-In-Class Antibody to the Clinic

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In 2014, Agenus entered into a license and research collaboration agreement with Merck for the discovery and development of therapeutic antibodies to novel cancer immune checkpoints. Under the terms of the agreement, as amended, Agenus undertook the discovery and optimization of fully human antibodies against an undisclosed checkpoint target using its proprietary antibody discovery platforms.

Last month, Agenus [announced](#) the initiation of Merck's Phase I clinical trial with an Agenus discovered antibody. We have already received payments totaling \$10M from Merck and are eligible to receive additional milestones as this molecule progresses through development, and if approved, additional milestones and royalties on sales.

## Agenus Has Enabled Incyte's I-O Portfolio With 4 Clinical Stage Antibodies

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In 2015, Agenus announced a global license, development and commercialization agreement with Incyte for the discovery and development of novel immuno-therapeutics using our proprietary antibody discovery platforms, including Retrocyte Display<sup>®\*</sup>. The initial collaboration included checkpoint antibodies targeting GITR, OX40, LAG-3 and TIM-3, and additional undisclosed targets. Our collaboration added therapeutic antibody expertise to Incyte's small molecule discovery capabilities and significantly expanded their I-O portfolio.

Of these antibodies, [GITR \(INCAGN01876\)](#), [OX40 \(INCAGN01949\)](#), and [LAG-3 \(INCAGN02385\)](#) are in clinical trials and [TIM-3 \(INCAGN02390\)](#) is expected to enter the clinic this year. Agenus has already received \$145M as part of this collaboration and remains eligible to receive up to an additional \$450 million in future potential development, regulatory and commercial milestones.

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\* Retrocyte Display<sup>®</sup> is an Agenus proprietary retroviral technology that enables a highly diverse library (>1x10<sup>9</sup>) of human IgG molecules to be displayed on the surface of B-lineage cells. This innovative cell-displayed expression platform permits the rapid generation of fully human and humanized therapeutic antibodies with high affinity and target specificity.

## Enabling New Partners

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Agenus continues to deliver new and innovative products from its discovery pipeline at an unprecedented pace. Agenus discovery platforms are on track to deliver 13 INDs in ~3 years, an I-O industry record.

Driven by our diverse portfolio, knowledge and our capabilities, we are advancing partnership discussions with various companies. These discussions range from product-licensing deals to potentially much larger collaborations. Further, we are actively pursuing research collaborations to opportunistically explore the synergies of our technology platforms with partners' platforms to build novel agents that can disrupt the future landscape of I-O.

We expect to conclude multiple transactions by the end of this year.