AGENUS' NEXT GENERATION CANCER VACCINE PLATFORMS

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agenus

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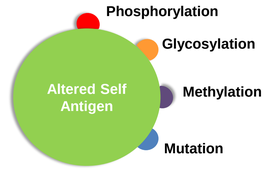
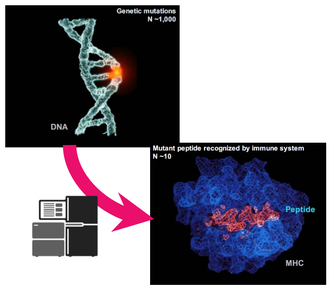
TUMOR SPECIFIC NEO-ANTIGENS

We design our vaccines to target neoantigens that are specifically presented on tumor cells. These include individualized and shared immunogenic DNA mutations and peptides with post-translational modifications (PTMs) specifically presented on tumor cells.



AIM™ IDENTIFIES IMMUNOGENIC MUTATIONS



The Agenus Immunogenic Mutation (AIM™) workflow comprises rapid multi-sample NGS profiling followed by advanced bioinformatics and computational immunology algorithms for mutation characterization and selection.

The AIM™ algorithm incorporates best-in-class mutation identification and HLA binding algorithms. Further, AIM™ integrates proprietary findings using MS ligandome data, immunological response in humans and mice, and TCR functionality.

VACCINE STRATEGY

Robust vaccine format | **Highly specific tumor targets** | **TME & immuno-modulatory agents**

AutoSynVax™

On-demand manufacture

Identify and functionally characterize mutations ← Sequence tumor genome

Identify candidate immunogenic neoantigens

Synthesize individualized vaccine

PhosphoSynVax™

Ready-to-ship

PTTs characterized from multiple tumor types

Synthesize tumor-type-specific PTTs

Pre-assembled tumor-type-specific PTT vaccines

Patient tumor

Patient Vaccine

VACCINE FORMAT

HSP70 as a carrier enables rapid APC uptake through scavenger receptors CD91

Recombinant heat shock protein 70 (HSP70)

HSP70 - peptide complex

Synthetic long peptides

Long peptides enable endogenous peptide processing in APCs

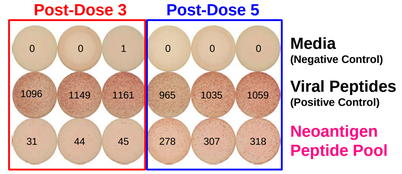
QS-21 Stimulon® saponin enables effective class I and II peptide presentation

QS-21 Stimulon® Adjuvant

Synthetic Vaccine

CLINICAL IMMUNE RESPONSE

Under compassionate use, we treated a metastatic hepatocellular carcinoma (HCC) patient. AIM™ identified 24 non-synonymous mutations and 13 prioritized for vaccine inclusion. AutoSynVax™ long peptides were manufactured. The patient was dosed every two weeks. The T-cell response was measured by ELISpot using pooled short mutation-containing peptides



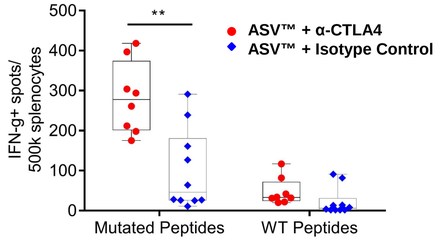
SHARED PHOSPHO-NEOANTIGENS

We identified 100's of HLA ligands that are shared, specifically presented on tumor cells, and recognized by central memory T cells from healthy donors.

PHASE 1 AutoSynVax™ TRIAL

- **Multiple sites**
- **Enrollment completed**
- **First patient successfully dosed**
- **Safety and immunological readout expected 2017**
- **Planned combination with immunomodulatory agents**

SYNERGIZES WITH mAbs



PRECLINICAL IMMUNOLOGICAL & TUMOR REPONSE

Agenus vaccines mediates tumor control (left), immune memory (middle) and phospho-peptide recognition (right)