

An Exclusive Interview With...



Raymond Miller, Ph.D.
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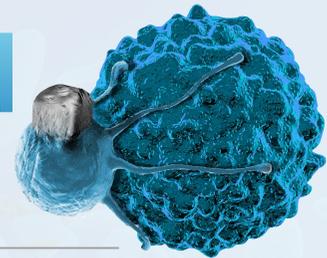
Raymond Miller Ph.D. is a Senior Global Product Manager with GenScript managing customized reagent services used in molecular diagnostics and therapeutics research.

He earned his Ph.D. in Biochemistry and Molecular Biology at Virginia Polytechnic Institute and State University studying the differences in olfaction using comparative genomics approaches.

Dr. Miller has almost 10 years of life science industry experience in the development and support of a wide range of proteomics and genomics products in several organizations including Bio-Rad Laboratories, Agilent Technologies, and GenScript.

His current focus is on market research, product development, and commercialization strategy for therapeutic materials used in cell and gene therapies along with molecular diagnostics.

Neoantigen Based Therapies Summit



Personalized Neoantigen-Based Cancer Vaccines & Immunotherapies

Using Predictive Bioinformatics Algorithms to Determine Neoantigen Peptide Synthesis Difficulty & Subsequent Production Methodology

GenScript has been a key player in the gene and cell therapy space for some time now, why have you decided to enter into the world of neoantigen-based therapeutics?

For the past 17 years, GenScript has been helping the research and early drug discovery communities by producing top-notch molecular biology and protein based reagents. Our main focus was ensuring that our synthetic platforms and quality control analytics were able to meet the needs of a wide array of customer applications.

In the past few years, the field of immuno-oncology has significantly expanded due to the promising results from clinical trials focusing on monoclonal antibodies, check point inhibitors, T-cell therapies such as CAR-T and TCR, and now personalized

cancer vaccines. Due to the mechanism of these therapies, they all require reagents with extremely high specificity and affinity for their target. This need, combined with the reliability and technical strength of GenScript's services seemed like a perfect fit, especially for the neoantigen community.

Why do you believe that the neoantigen field is such an area of interest currently?

It has been shown for some time now that throwing standard methods of care such as chemotherapy and radiation at every type of cancer is not efficacious. It is because of this that clinicians have moved away from bombarding cancerous tissue with these toxic treatments and moved towards a more genetics and tumour specific based approach. However,

despite the prevalence of therapies against targets such as shared tumour associated antigens and common oncogenes, many patients still do not respond positively to treatment.

Therefore, we are now in the era of personalized therapeutics, meaning that each patient will not only have their tumour analysed for unique mutations (neoantigens) but also, have their immune system analysed for how it responds to that tumour. In turn, once we understand how an individual's own body responds to their cancer, we can then manipulate that immune system to not only target but initiate a highly specific and strong anti-tumour killing response which can effectively stop cancer progression and even reduce overall tumour size. On top of the early results showing strong efficacy of neoantigen-based vaccines, because these therapeutics

are so personalized, they can easily be combined with other immune-based standard methods of care, such as checkpoint inhibitors, to enhance that anti-tumour response and give the patient an overall better chance of survival.

Who has GenScript been currently collaborating with in the field and how have you supported their work?

Currently, GenScript is working with many top players in not only the immunotherapy field but in the world of neoantigen vaccines and TCR therapeutics. Specifically, we have produced thousands of highly difficult neoantigen peptides for Avidia Technologies' novel SNAP (Self-assembling Nanoparticles based on Amphiphilic Polymer) platform. SNAP is eloquently designed to self-assemble into nanoparticles of uniform size which packages peptide antigens and immunostimulants into nanoparticles that target antigen-presenting cells, leading to high magnitude tumor-specific T cell responses. On the other side of the spectrum, we have also worked with 3T Biosciences to create libraries of neoantigen peptides which they identified through their proprietary discovery technology. These peptides were used for TCR screening, in order to identify high affinity binders with strong effector function for TIL style therapeutics.

At GenScript, we truly believe that neoantigen based therapeutics are a key aspect in the future of immuno-oncology, and therefore have structured our services to work well for all applications from initial TCR screening, to peptide vaccine development, and clinical efficacy screening. It is because of this, that we have the honor to provide reagents for such field changing institutes such as Avidia Technologies and 3T Biosciences.

What makes GenScript's work with neoantigens unique compared to other key players in this field?

At GenScript, we prefer to be partners in our customer's research, rather than simply a provider of off the shelf reagents. We accomplish this through our fully custom service lines which allow customers to be in charge of every step of their project and give them full flexibility in terms of service specifications, time line, and quality control.

GenScript offers reliable neoantigen peptides for precision therapeutic discovery. At GenScript we have the technical means & experience to synthesize large numbers of challenging neoantigen peptides and provide tailored optimization tools for downstream applications. Specifically, neoantigen peptides can

be extremely difficult to synthesize in a short turn-around-time due to their intrinsic characteristics. As opposed to other key players in the neoantigen peptide market, we pride ourselves in providing a highly technical and flexible service, which allows for the delivery of everything from large quantities of highly pure modified peptides to high throughput small scale overlapping peptide libraries all completely dependent on our customer's requirements.

Join GenScript at the Neoantigen-Based Therapies Summit in Boston, MA on November 3-5, 2020.

For more information, visit www.neo-antigen.com

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GenScript is the leading contract research organization in the world providing gene, peptide, protein, CRISPR, and antibody.

Since its foundation in 2002, GenScript has grown exponentially to proudly serve over 100 countries through partnerships with scientists conducting fundamental life science research, translational biomedical research, and early stage pharmaceutical development.

Currently, GenScript is working with world leaders in the Immuno-oncology field to build strong early discovery platforms for neoantigen based therapeutics, such as personalized cancer vaccines and TCR engineering, through their expertise in NGS, CRISPR, and neoantigen peptide synthesis- all with the goal to Make Research Easy. For more information, visit

www.genscript.com