# NanoValent Receives Patent for Novel Targeted Polymerized Nanoparticles

By **Danielle Garcia** -August 20, 2019


NanoValent Pharmaceuticals, a development stage pharmaceutical company progressing a new class of anti-cancer therapeutics called *targeted nanospheres* (TNS), has received United States Patent No. 10,369,104 from the U.S. Patent and Trademark Office relating to its application of targeted polymerized nanoparticles in cancer.

Founded in 2006, NanoValent is developing and commercializing a new generation of Targeted Nanospheres (TNS). Working in close collaboration with Children's Hospital Los Angeles (CHLA), the company aims to develop superior therapeutics for patients restricted by current treatment options and working with other pharmaceutical companies to optimize or expand the utility of additional therapeutics.

**Novel approach**

"This is a key moment in the history of NanoValent and its ambitions to create significant new therapeutic tools for the treatment of cancers and other significant

unmet medical needs," noted Timothy Enns, Chief Executive Officer and President of NanoValent Pharmaceuticals.

"NanoValent started with an extensive IP asset portfolio covering earlier generation nanosphere chemistry, but in partnership with Children's Hospital Los Angeles (CHLA) we were able to team novel chemistry with biological antitumor activity making this patent the most significant yet to be allowed. This granted patent recognizes the uniqueness of our invention and should form the foundation of potential commercial value in the United States. Our lead candidate, NV103 (CD99 targeted irinotecan) is in advanced pre-IND testing focused on *Ewing Sarcoma* (ES), but this patent forms the foundation for commercially defending NV103 and other therapeutics we develop," Enns added.

Ewing Sarcoma, which is more common in teenagers and young adults but can also occur in older people, is a rare type of cancer that occurs in bones or in the soft tissue around the bones. This cancer generally begins in the long bones of the pelvis, legs or arms, but it can occur in any bone. The disease can also start in the soft tissues of the arms, legs, abdomen or other locations.

While major advancements in the treatment of Ewing sarcoma have significantly improved outcomes, there still remains a major unmet need, and following the completion of treatment, patients need lifelong monitoring for potential late effects of intense chemotherapy and radiation.

**Targeted Nanopartices**

"The patent recognizes the long and detailed chemistry effort we have put into developing TNS versus other liposomal or nanoparticle inventions," said Jon Nagy, Ph.D, Chief Scientific Officer and co-founder of NanoValent Pharmaceuticals.

"By optimizing the composition, capability and stability of the TNS shell structure, we have created a platform that should enable NanoValent to create a wide range of novel therapeutics. Non-targeted nanoparticles are approved for clinical use with varied commercial success, but truly targeted nanospheres represent a potentially novel therapeutic class," he added.

"It is exciting to see our years of work validated in a US patent and lead program progressing towards clinical testing," noted Timothy Triche, MD, Ph.D, Chief Medical Officer and co-founder of NanoValent Pharmaceuticals and Professor of Pathology and Laboratory Medicine and Co-Director of the Center for Personalized Medicine at Children's Hospital Los Angeles (CHLA).

Triche's laboratory at CHLA seeks to understand the genetic mechanisms underlying Ewing Sarcoma and develop treatment models using tumor-specified targeted nanoparticle therapy against specific targets.

"NV103 is our core validation program and we hope to progress that into Phase I clinical studies in early 2021 to support the objective of developing a safer and more effective therapeutic for adolescents with *Ewing sarcoma* (ES). But there is no doubt that TNS offers exciting potential in general oncology and beyond. We have promising research and development efforts underway in gene editing and separately in glioblastoma," Trische explained .

"NanoValent has been funded both in its oncology and non-oncology surgical adhesions work through over U.S. $ 4 million dollars in grants. Primary founder and seed financing was raised in 2017. This patent should support our goal of a financing effort in the fourth quarter of this year to accelerate our already ongoing pre-IND work for NV103, including optimization of manufacture and the full IND package required to start clinical trials," Enns concluded. [1]

**Reference**

[1] Portillo S. NanoValent Receives NIH SBIR Funding for Ongoing Development of Antibody-conjugated Nanoparticle Platform Technology. ADC Review | J. Antibody-drug Conjugates. October 1, 2018. [Article]