



Nouscom highlights cutting-edge science that led to the design of NOUS-209, a potential off-the-shelf neoantigen cancer vaccine for tumors with Microsatellite Instability

Article entitled 'A genetic vaccine encoding shared cancer neoantigens to treat tumors with Microsatellite Instability' published in Cancer Research

BASEL, Switzerland – 22. July 2020: Nouscom, an immuno-oncology company developing off-the-shelf and personalized cancer neoantigen vaccines, announced today the publication of new research describing the cutting-edge science and rationale for the design of NOUS-209 and compelling preclinical data highlighting its potential to be an 'off-the-shelf' immunotherapy for tumors with Microsatellite Instability (MSI). The manuscript entitled: *A genetic vaccine encoding shared cancer neoantigens to treat tumors with Microsatellite Instability* (G. Leoni *et al*, reference below) was published in the leading peer-reviewed journal *Cancer Research*, a journal of the American Association for Cancer Research (AACR).

NOUS-209 is currently being investigated in a US Phase 1 clinical trial in combination with the anti-PD-1 checkpoint inhibitor pembrolizumab in patients with gastric, colorectal and gastro-esophageal junction MSI tumors. Initial data is expected to be presented at an international cancer conference in the next 6-9 months.

In the new paper, the authors describe how NOUS-209 is based on the findings that many neoantigens created by frameshift mutations (frameshift peptides, FSPs) are shared across multiple MSI tumors but not healthy tissues. NOUS-209 comprises 209 shared FSP neoantigens, selected by a proprietary algorithm on the basis that an average of 50 neoantigens on any patient's tumor will be shared with those in NOUS-209.

Using the large capacity of non-human Great Apes Adenovirus (GAd) and Modified Vaccinia Ankara (MVA) vectors to deliver the neoantigens was shown to generate a broad and powerful anti-tumor immune response across a range of MSI tumors. Based on the published results, NOUS-209 is expected to induce potent and broad CD8+ and CD4+ responses in humans offering the potential of a universal, 'off-the-shelf' cancer vaccine.

Dr. Elisa Scarselli, Chief Scientific Officer and Co-Founder of Nouscom, said: "The findings published in *Cancer Research* are extremely exciting and confirm that our approach is both differentiated and offers the potential of creating a truly universal cancer vaccine for patients with MSI tumors. Furthermore, by delivering such a large amount of tumor-specific material, NOUS-209 is also expected to generate immune responses broadly across highly heterogeneous and aggressive MSI tumor populations. We thank all our collaborators for their input into these groundbreaking studies and look forward to the results of our ongoing clinical trial with NOUS-209, which we hope will validate these exciting results in patients."

About MSI tumors

Tumors with microsatellite instability are caused by a defective DNA mismatch repair system that leads to the accumulation of mutations within microsatellite regions. Indels (insertions or deletions) of bases in microsatellites of coding genes can result in the synthesis of frameshift peptides (FSP). FSPs are tumor-specific neoantigens shared across MSI patients. Microsatellite instability can be hereditary or sporadic. MSI is observed in 15% of sporadic colorectal tumors diagnosed in the US, and has been reported in glioblastomas, lymphomas, stomach, urinary tract, ovarian and endometrial tumors. Lynch syndrome, often called hereditary nonpolyposis colorectal cancer (HNPCC), is an inherited disorder that increases the risk of many types of cancer, particularly cancers of the colon. It is estimated that 1 in 370 individuals in US have a gene mutation associated with Lynch syndrome and can develop cancer in 70% of cases during their life span.

References

G. Leoni, A.M. D'Alise et al. *A genetic vaccine encoding shared cancer neoantigens is effective against tumors with microsatellite instability*, *Cancer Research 2020*, a journal of the American Association for Cancer Research (AACR).

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Cancer research can be accessed at:

<https://cancerres.aacrjournals.org/content/early/2020/07/18/0008-5472.CAN-20-1072>

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About Nouscom

Nouscom is a privately held oncology company developing next-generation immunotherapies. Nouscom's proprietary technology platform harnesses the full power of the immune response by combining viral vectored genetic vaccines based on neoantigens with other immunomodulators.

Nouscom is currently advancing clinical development of its lead program, NOUS-209, an off-the-shelf cancer vaccine based on shared frame shift neoantigens. The Company continues to develop its product candidate, NOUS-PEV, a personalized cancer neoantigen- vaccine, which is expected to enter clinical studies in 2020.

Nouscom is led by an experienced management team with deep roots in the pharma and biotech industry (Merck, Novartis, Lilly, Incyte and Okairos (acquired by GSK)), and are veterans in the field of viral vectored genetic vaccines.

Nouscom, which was founded in 2015 and is headquartered in Basel, Switzerland with operations in Rome, Italy, is backed by international life sciences investors: 5AM, Abingworth, LSP (Life Sciences Partners) and Versant Ventures.

For more information on Nouscom, please visit the company's website at www.nouscom.com

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