Statement on Katalin Karikó and Drew Weissman awarded the Nobel Prize in Medicine 2023

October 2, 2023

All of us at BioNTech applaud Kati (Katalin) Karikó and Drew Weissman on their Nobel Prize in Physiology or Medicine for pioneering nucleoside base modifications, which were one of the key innovations applied to our mRNA-based COVID-19 vaccine. We value both for their passion, persistence, and commitment. This Nobel Prize is a reminder for scientists around the world to continue to engage in rigorous research and development with the great aspiration to unlock the full potential of new drug classes. Gratulálunk and congrats!

The mRNA enthusiasts met in 2013

Kati Karikó met Ugur Sahin and other BioNTech scientists during a trip to Europa in 2013. She accompanied her daughter -to attend a tournament in which her daughter, an Olympic rower who was competing in a tournament. During this meeting in Mainz, Kati Karikó realized that she was introduced to a group of mRNA enthusiasts. Kati Karikó said that "this was the first time in my life that I didn't have to explain that RNA is good, because all of the people who were there, were believers." Ugur Sahin remembered the meeting: "We shared the excitement about mRNA and research. So, I simply asked her, 'Would you be interested in working together, here at BioNTech?'" Kati Karikó agreed to the offer and joined the BioNTech family in 2013. In 2022, after having worked at BioNTech for almost a decade, she decided to move back to Pennsylvania, also to be closer to her family. Since then, she has retained her connection to BioNTech as an external consultant.

A publication about pioneering "a new class of drugs" (Nature 2014)

When Kati Karikó and Ugur Sahin met for the first time in 2013, they both realized they were working on advancing mRNA technology with similar objectives, but in different ways. While Karikó focused on the nucleoside modification allowing mRNA to be administered in higher doses, Ugur Sahin together with Özlem Türeci and their teams focused on improvements of the molecule's backbone, which also impacted its stability and translation rate. A targeted delivery strategy to specific immune cells developed by the science couple Sahin-Türeci in Germany increased the mRNA's potency by several 1,000-fold.

Ugur Sahin, Kati Karikó and Özlem Türeci published the findings of their joint work already in 2014 in a comprehensive overview of the possibilities of mRNA in *Nature Reviews Drug Discovery* (Sahin, U., Karikó, K., and Türeci, Ö. (2014). mRNA-based therapeutics--developing a new class of drugs. Nat Rev Drug Discovery 13: 759-780.). The combination of their discoveries led to the successful development of the first ever approved mRNA vaccine, today known as the Pfizer-BioNTech COVID-19 vaccine. BioNTech initiated the COVID-19 vaccine development project named Lightspeed in early 2020, in which scientists evaluated more than 20 candidates, including the nucleoside modified mRNA candidate BNT162b2.

BioNTech's vision: translating science into survival

This historic milestone also contributed significantly to BioNTech's strong financial position. It allows us to accelerate and expand our diversified clinical pipeline and supports our transformation into a multi-product company utilizing mRNA, protein-based therapeutics, cell therapies and other drug classes. Since the inception of BioNTech in 2008, our goal remains unchanged: translating science into survival by combining fundamental research and fundamental excellence.

Helmut Jeggle, **Chairman of the BioNTech Supervisory Board at BioNTech**, said: "Katalin's scientific rigor and relentless passion mirrors BioNTech's dedication to translate groundbreaking science into survival. She is one of the pioneering scientists who significantly contributed to the establishment of mRNA as a new drug class. A Nobel Prize related to mRNA technology only a few years after the approval of the first medical application underlines the importance of this breakthrough. We are proud that Katalin found her scientific home base for further advancing mRNA in BioNTech's labs in Mainz. A home for brilliant scientists dedicated to discovering and developing innovations with the potential to improve the health of people worldwide. Congratulations to Nobel Prize Laureates Katalin Karikó and Drew Weissman!"

mRNA is one of BioNTech's most advanced technologies in a toolbox of different drug classes to address cancer, including cell therapies, antibody-drug conjugates (ADCs), antibodies, and small molecules. We are developing investigational precision cancer therapies including mRNA-based cancer immunotherapies. We believe that harnessing complementary, potentially synergistic modes of action could increase the likelihood of therapeutic success, reduce the risk of emergence of secondary resistance mechanisms, and also unlock a larger potential patient population. Today, we at BioNTech celebrate with Kati Karikó and Drew Weissman honoring their relentless efforts and their contribution to the benefit of humankind.

About BioNTech

Biopharmaceutical New Technologies (BioNTech) is a next generation immunotherapy company pioneering novel therapies for cancer and other serious diseases. The Company exploits a wide array of computational discovery and therapeutic drug platforms for the rapid development of novel biopharmaceuticals. Its broad portfolio of oncology product candidates includes individualized and off-the-shelf mRNA-based therapies, innovative chimeric antigen receptor (CAR) T cells, several protein-based therapeutics, including bispecific immune checkpoint modulators, targeted cancer antibodies and antibody-drug conjugate (ADC) therapeutics, as well as small molecules. Based on its deep expertise in mRNA vaccine development and in-house manufacturing capabilities, BioNTech and its collaborators are developing multiple mRNA vaccine candidates for a range of infectious diseases alongside its diverse oncology pipeline. BioNTech has established a broad set of relationships with multiple global pharmaceutical collaborators, including DualityBio, Fosun Pharma, Genentech, a member of the Roche Group, Genevant, Genmab, OncoC4, Regeneron, Sanofi, and Pfizer.

For more information, please visit www.BioNTech.com.

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