THE ARISING · mRNA MEDICINES

Three targets. One message.

Making cancer-targeting proteins inside the body

November 5, 2026 · John Griffin, MD



One experimental mRNA medicine has prompted patients' cells to produce three different cancer-targeting proteins. In an early multiple myeloma trial, four of eleven people whose responses could be assessed had confirmed responses. It is a glimpse of medicine delivered as instructions: give cells a message, and let them make the therapeutic proteins.

For someone whose cancer has returned after several treatments, the practical question is what options remain. A new approach matters when it opens another route to controlling the disease, with enough time and comfort left for living.

Making the medicine inside the body

Moderna's mRNA-2808 carries instructions for three T-cell engagers. These proteins connect immune T cells with targets on myeloma cells: BCMA, GPRC5D and FcRH5. The aim is broader coverage of a cancer whose target expression can vary. This approach makes therapeutic proteins; the personalized cancer vaccines discussed elsewhere in this booklet teach the immune system to recognize tumor features.

The MyEngage study is an open-label phase 1/2 trial. At the June 29 data cutoff, twelve participants had received treatment. Their median age was 72, and they had received a median of ten previous lines of therapy. All three encoded proteins were detected in blood.

What has happened so far

Among eleven evaluable participants, two had very good partial responses and two had partial responses. All four responses were ongoing at the cutoff, with follow-up across the study ranging from half a month to six and a half months. These early, uncontrolled results establish a signal to follow; the next report needs to show how durable the responses are.

Treatment-related grade 3 or higher adverse events occurred in five of twelve participants, mainly affecting the blood. Five developed mild cytokine release syndrome, an inflammatory reaction to immune activation; each case resolved after treatment with tocilizumab. These effects are part of the treatment's burden, alongside its potential.

The next result to watch

The registry lists the trial as recruiting, with an estimated enrollment of 190 and safety as a primary focus. Moderna plans an updated presentation at the American Society of Hematology meeting on December 12. The questions worth following are specific: how long does control last, which doses work best, and what does treatment ask of the person receiving it?

The human goal is a life with more room in it: a walk that still feels possible, a family visit that can be planned, work or creative effort that can continue. A response on a chart becomes more valuable when it gives someone those possibilities back.

This story adapts The Arising's November 5 article on pages 40–41. Moderna sponsors the study, and its employees are among the authors.

Read the investigators' ASH report · Follow the MyEngage trial · Read Moderna's announcement.

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