



Libtayo® (cemiplimab) Plus Chemotherapy Results at Five Years Reinforce Significant and Durable Improvements in Survival Outcomes for Advanced Non-small Cell Lung Cancer

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Late-breaking data from exploratory analyses at WCLC show Libtayo plus chemotherapy demonstrates a more than double five-year overall survival rate of 19.4%, compared to 8.8% with chemotherapy alone

In a five-year analysis, consistent efficacy was observed across histologies with especially notable benefit in the squamous patient population where median overall survival was 22.3 months

TARRYTOWN, N.Y., Sept. 09, 2025 (GLOBE NEWSWIRE) -- Regeneron Pharmaceuticals, Inc. (NASDAQ: REGN) today announced five-year follow-up results on overall survival (OS) from the Phase 3 EMPOWER-Lung 3 trial, which evaluated Libtayo® (cemiplimab) plus platinum-based chemotherapy versus chemotherapy alone as a first-line treatment for adults with locally advanced or metastatic non-small cell lung cancer (NSCLC) with no EGFR, ALK or ROS1 aberrations. The late-breaking data will be presented in a mini oral session at the IASLC 2025 World Conference on Lung Cancer (WCLC) hosted by the International Association for the Study of Lung Cancer.

"After more than five years of follow-up, the EMPOWER-Lung 3 trial continues to demonstrate sustained survival – with an impressive overall survival probability of 19.4% at five years – when Libtayo is added to chemotherapy in patients with advanced non-small cell lung cancer," said Ana Baramidze, M.D., Ph.D., Head of Clinical Research Department at Todua Clinic, Tbilisi, Georgia. "Long-term results across tumor histologies were also reported, including a notable 22.3-month median overall survival for squamous NSCLC patients. Collectively, these data underscore Libtayo's utility across a variety of patient types, both as a single agent and in combination with chemotherapy."

The five-year results for Libtayo plus chemotherapy presented at WCLC add to the breadth of long-term data for Libtayo in advanced NSCLC, including five-year outcomes from the EMPOWER-Lung 1 trial that were [presented](#) at WCLC 2024 confirming durable survival benefit as monotherapy.

At this year's WCLC, five-year efficacy results, with a median follow-up of 60.9 months, found Libtayo plus chemotherapy remained superior to chemotherapy alone:

- **21.1-month median OS** versus 12.9 months, representing a 34% reduction in the risk of death (hazard ratio [HR]: 0.66; 95% confidence interval [CI]: 0.53–0.83). The five-year probability of survival was 19.4% for the Libtayo combination versus 8.8% for chemotherapy.
- **8.2-month median progression-free survival (PFS)** versus 5.5 months, representing a 42% reduction in the risk of disease progression (HR: 0.58; 95% CI: 0.47–0.72).
- **43.6% objective response rate (ORR)** versus 22.1%. The ORR included a complete response rate of 6.4% versus 0%.
- **16.4-month median duration of response (DoR)** versus 7.3 months.

Also presented at WCLC were exploratory subgroup analyses that demonstrated survival benefits for patients treated with Libtayo plus chemotherapy compared to chemotherapy alone regardless of tumor histology or PD-L1 expression level. Specific efficacy results included a:

- **22.3-month median OS among patients with squamous histology** (n=133) versus 13.8 months (n=67), representing a 32% reduction in risk of death (HR: 0.68; 95% CI: 0.49–0.94).
- **19.4-month median OS among patients with non-squamous histology** (n=179) versus 12.4 months (n=87), representing a 38% reduction in risk of death (HR: 0.62, 95% CI: 0.46–0.82).
- **24.0-month median OS among patients with PD-L1 \geq 1%** (n=217) versus 12.1 months (n=110), representing a 46% reduction in risk of death (HR: 0.54; 95% CI: 0.41–0.70).

The safety profile at five years remained consistent with previously reported data. The median duration of exposure was 39 weeks to Libtayo plus chemotherapy and 21 weeks to chemotherapy alone. Adverse events (AEs) of any grade occurred in 96.5% of Libtayo plus chemotherapy patients (49% \geq Grade 3) and 95% of chemotherapy patients (33% \geq Grade 3). The most common AEs of any grade occurring in at least 10% of Libtayo plus chemotherapy patients included anemia (46%), alopecia (38%), nausea (25%), increase of alanine aminotransferase (18%), arthralgia (18%), decreased appetite (18%), hyperglycemia (18%), increase of aspartate transaminase (16%), neutropenia (16%), fatigue (15%), constipation (14%), thrombocytopenia (14%), dyspnea (14%), asthenia (13.5%), vomiting (13%), decreased weight (13%), increased blood creatinine (13%), insomnia (12%), hypoalbuminemia

(11%), diarrhea (11%). Among Libtayo patients, treatment-related adverse events were \geq Grade 3 in 30% and led to permanent discontinuation in 4.5% and death in 1%, compared to 18%, 1% and 0.7% in the chemotherapy arm, respectively.

About the Phase 3 Trial

The randomized, multicenter Phase 3 trial, called EMPOWER-Lung 3, investigated a first-line combination treatment of Libtayo and platinum-doublet chemotherapy, compared to platinum-doublet chemotherapy alone. The trial enrolled 466 patients with locally advanced or metastatic NSCLC, as well as squamous or non-squamous histologies across all PD-L1 expression levels and with no ALK, EGFR and ROS1 aberrations.

Patients were randomized 2:1 to receive either Libtayo 350 mg (n=312) or placebo (n=154) administered intravenously every 3 weeks for 108 weeks, plus platinum-doublet chemotherapy administered every 3 weeks for 4 cycles. The primary endpoint was OS, and key secondary endpoints were PFS and ORR. The probability of survival and PFS were calculated according to Kaplan-Meier estimates.

Notably, patients in the trial had a variety of baseline characteristics commonly considered difficult-to-treat. Among those enrolled, 43% had tumors with squamous histology, 67% had tumors with $<$ 50% PD-L1 expression, 15% had inoperable locally advanced disease not eligible for definitive chemoradiation, and 7% had pretreated and clinically stable brain metastases. Additionally, 84% of patients had an ECOG 1 performance status. ECOG performance status assesses patient ability to conduct daily living activities and prognosis on a scale of increasing severity ranging from 0 (no symptoms) to 5 (death).

About Regeneron in Cancer

We aspire to turn revolutionary discoveries into medicines that can transform the lives of those impacted by cancer. Our team around the world is driven to solve the needs and challenges of those affected by one of the most serious diseases of our time.

Backed by our legacy of scientific innovation and a deep understanding of biology, genetics and the immune system, we're pursuing potential therapies across more than 30 types of solid tumors and blood cancers. Our cancer strategy is powered by cutting-edge technologies and therapies that can be flexibly combined to investigate potentially transformative treatments for patients. Oncology assets in clinical development comprise nearly half of Regeneron's pipeline, and include checkpoint inhibitors, bispecific antibodies and costimulatory bispecific antibodies. Our approved PD-1 inhibitor Libtayo serves as the backbone of many of our investigational combinations.

To complement our extensive in-house capabilities, we collaborate with patients, healthcare providers, governments, biopharma companies and each other to further our shared goals. Together, we are united in the mission to serve as a beacon of transformation in cancer care.

About Libtayo

Libtayo is a fully human monoclonal antibody targeting the immune checkpoint receptor PD-1 on T cells and was invented using Regeneron's proprietary *VelocImmune*[®] technology. By binding to PD-1, Libtayo has been shown to block cancer cells from using the PD-1 pathway to suppress T-cell activation. Libtayo has been approved by regulatory authorities in more than 30 countries in one or more indications, including for certain adult patients with advanced basal cell carcinoma (BCC), advanced cutaneous squamous cell carcinoma (CSCC), advanced NSCLC and advanced cervical cancer.

In the U.S., the generic name for Libtayo in its approved indications is cemiplimab-rwlc, with rwlc as the suffix designated in accordance with Nonproprietary Naming of Biological Products Guidance for Industry issued by the U.S. FDA. Outside of the U.S., the generic name of Libtayo in its approved indications is cemiplimab.

The extensive clinical program for Libtayo is focused on difficult-to-treat cancers. Libtayo is currently being investigated in trials as a monotherapy, as well as in combination with either conventional or novel therapeutic approaches for other solid tumors and blood cancers. These potential uses are investigational, and their safety and efficacy have not been evaluated by any regulatory authority.

U.S. FDA-approved Indications

Libtayo is a prescription medicine used to treat:

- People with a type of skin cancer called cutaneous squamous cell carcinoma (CSCC) that has spread or cannot be cured by surgery or radiation.
- People with a type of skin cancer called basal cell carcinoma (BCC) when your BCC cannot be removed by surgery (locally advanced BCC) or when it has spread (metastatic BCC) and have received treatment with a hedgehog pathway inhibitor (HHI), or cannot receive treatment with a HHI.
- Adults with a type of lung cancer called non-small cell lung cancer (NSCLC).
 - LIBTAYO may be used in combination with chemotherapy that contains a platinum medicine as your first treatment when your lung cancer has not spread outside your chest (locally advanced lung cancer) and you cannot have surgery or chemotherapy with radiation, or your lung cancer has spread to other areas of your body (metastatic lung cancer), and your tumor does not have an abnormal "EGFR," "ALK," or "ROS1" gene.
 - LIBTAYO may be used alone as your first treatment when your lung cancer has not spread outside your chest (locally advanced lung cancer) and you cannot have surgery or chemotherapy with radiation, or your lung cancer has spread to other areas of your body (metastatic lung cancer), and your tumor tests positive for high "PD-L1," and your tumor does not have an abnormal "EGFR," "ALK," or "ROS1" gene.

It is not known if Libtayo is safe and effective in children.

IMPORTANT SAFETY INFORMATION FOR U.S. PATIENTS

What is the most important information I should know about LIBTAYO?

LIBTAYO is a medicine that may treat certain cancers by working with your immune system. LIBTAYO can cause your immune system to attack normal organs and tissues in any area of your body and can affect the way they work. These problems can sometimes become severe or life-threatening and can lead to death. You can have more than one of these problems at the same time. These problems may happen anytime during treatment or even after your treatment has ended.

Call or see your healthcare provider right away if you develop any new or worsening signs or symptoms, including:

- **Lung problems:** cough, shortness of breath, or chest pain
- **Intestinal problems:** diarrhea (loose stools) or more frequent bowel movements than usual, stools that are black, tarry, sticky or have blood or mucus, or severe stomach-area (abdomen) pain or tenderness
- **Liver problems:** yellowing of your skin or the whites of your eyes, severe nausea or vomiting, pain on the right side of your stomach-area (abdomen), dark urine (tea colored), or bleeding or bruising more easily than normal
- **Hormone gland problems:** headache that will not go away or unusual headaches, eye sensitivity to light, eye problems, rapid heartbeat, increased sweating, extreme tiredness, weight gain or weight loss, feeling more hungry or thirsty than usual, urinating more often than usual, hair loss, feeling cold, constipation, your voice gets deeper, dizziness or fainting, or changes in mood or behavior, such as decreased sex drive, irritability, or forgetfulness
- **Kidney problems:** decrease in your amount of urine, blood in your urine, swelling of your ankles, or loss of appetite
- **Skin problems:** rash, itching, skin blistering or peeling, painful sores or ulcers in mouth or nose, throat, or genital area, fever or flu-like symptoms, or swollen lymph nodes
- **Problems can also happen in other organs and tissues. These are not all of the signs and symptoms of immune system problems that can happen with LIBTAYO. Call or see your healthcare provider right away for any new or worsening signs or symptoms, which may include:** chest pain, irregular heartbeat, shortness of breath or swelling of ankles, confusion, sleepiness, memory problems, changes in mood or behavior, stiff neck, balance problems, tingling or numbness of the arms or legs, double vision, blurry vision, sensitivity to light, eye pain, changes in eyesight, persistent or severe muscle pain or weakness, muscle cramps, low red blood cells, or bruising
- **Infusion reactions that can sometimes be severe or life-threatening.** Signs and symptoms of infusion reactions may include: nausea, vomiting, chills or shaking, itching or rash, flushing, shortness of breath or wheezing, dizziness, feel like passing out, fever, back or neck pain, or facial swelling
- **Rejection of a transplanted organ.** Your healthcare provider should tell you what signs and symptoms you should report and monitor you, depending on the type of organ transplant that you have had
- **Complications, including graft-versus-host disease (GVHD), in people who have received a bone marrow (stem cell) transplant that uses donor stem cells (allogeneic).** These complications can be serious and can lead to death. These complications may happen if you underwent transplantation either before or after being treated with LIBTAYO. Your healthcare provider will monitor you for these complications

Getting medical treatment right away may help keep these problems from becoming more serious. Your healthcare provider will check you for these problems during your treatment with LIBTAYO. Your healthcare provider may treat you with corticosteroid or hormone replacement medicines. Your healthcare provider may also need to delay or completely stop treatment with LIBTAYO if you have severe side effects.

Before you receive LIBTAYO, tell your healthcare provider about all your medical conditions, including if you:

- have immune system problems such as Crohn's disease, ulcerative colitis, or lupus
- have received an organ transplant
- have received or plan to receive a stem cell transplant that uses donor stem cells (allogeneic)
- have received radiation treatment to your chest area
- have a condition that affects your nervous system, such as myasthenia gravis or Guillain-Barré syndrome
- are pregnant or plan to become pregnant. LIBTAYO can harm your unborn baby

Females who are able to become pregnant:

- Your healthcare provider will give you a pregnancy test before you start treatment
 - You should use an effective method of birth control during your treatment and for at least 4 months after your last dose of LIBTAYO. Talk to your healthcare provider about birth control methods that you can use during this time
 - Tell your healthcare provider right away if you become pregnant or think you may be pregnant during treatment with LIBTAYO
- are breastfeeding or plan to breastfeed. It is not known if LIBTAYO passes into your breast milk. Do not breastfeed during treatment and for at least 4 months after the last dose of LIBTAYO

Tell your healthcare provider about all the medicines you take, including prescription and over-the-counter medicines, vitamins, and herbal supplements.

The most common side effects of LIBTAYO when used alone include tiredness, muscle or bone pain, rash, diarrhea, and low levels of red blood cells (anemia). The most common side effects of LIBTAYO when used in combination with platinum-containing

chemotherapy include hair loss, muscle or bone pain, nausea, tiredness, numbness, pain, tingling, or burning in your hands or feet, and decreased appetite. These are not all the possible side effects of LIBTAYO. Call your doctor for medical advice about side effects. You may report side effects to FDA at 1-800-FDA-1088. You may also report side effects to Regeneron Pharmaceuticals at 1-877-542-8296.

Please see full [Prescribing Information](#), including [Medication Guide](#).

About Regeneron's *VelocImmune*[®] Technology

Regeneron's *VelocImmune* technology utilizes a proprietary genetically engineered mouse platform endowed with a genetically humanized immune system to produce optimized fully human antibodies. When Regeneron's co-Founder, President and Chief Scientific Officer George D. Yancopoulos was a graduate student with his mentor Frederick W. Alt in 1985, they were the first to [envision](#) making such a genetically humanized mouse, and Regeneron has spent decades inventing and developing *VelocImmune* and related *VelociSuite* technologies. Dr. Yancopoulos and his team have used *VelocImmune* technology to create a substantial proportion of all original, FDA-approved fully human monoclonal antibodies. This includes Dupixent[®] (dupilumab), Libtayo, Praluent[®] (alirocumab), Kevzara[®] (sarilumab), Evkeeza[®] (evinacumab-dgnb), Inmazed[®] (atoltivimab, maftivimab and odesivimab-ebgn) and Veopoz[®] (pozelimab-bbfg). In addition, REGEN-COV[®] (casirivimab and imdevimab) had been authorized by the FDA during the COVID-19 pandemic until 2024.

About Regeneron

Regeneron (NASDAQ: REGN) is a leading biotechnology company that invents, develops and commercializes life-transforming medicines for people with serious diseases. Founded and led by physician-scientists, our unique ability to repeatedly and consistently translate science into medicine has led to numerous approved treatments and product candidates in development, most of which were homegrown in our laboratories. Our medicines and pipeline are designed to help patients with eye diseases, allergic and inflammatory diseases, cancer, cardiovascular and metabolic diseases, neurological diseases, hematologic conditions, infectious diseases, and rare diseases.

Regeneron pushes the boundaries of scientific discovery and accelerates drug development using our proprietary technologies, such as *VelociSuite*[®], which produces optimized fully human antibodies and new classes of bispecific antibodies. We are shaping the next frontier of medicine with data-powered insights from the Regeneron Genetics Center[®] and pioneering genetic medicine platforms, enabling us to identify innovative targets and complementary approaches to potentially treat or cure diseases.

For more information, please visit www.Regeneron.com or follow Regeneron on [LinkedIn](#), [Instagram](#), [Facebook](#) or [X](#).

Forward-Looking Statements and Use of Digital Media

This press release includes forward-looking statements that involve risks and uncertainties relating to future events and the future performance of Regeneron Pharmaceuticals, Inc. ("Regeneron" or the "Company"), and actual events or results may differ materially from these forward-looking statements. Words such as "anticipate," "expect," "intend," "plan," "believe," "seek," "estimate," variations of such words, and similar expressions are intended to identify such forward-looking statements, although not all forward-looking statements contain these identifying words. These statements concern, and these risks and uncertainties include, among others, the nature, timing, and possible success and therapeutic applications of products marketed or otherwise commercialized by Regeneron and/or its collaborators or licensees (collectively, "Regeneron's Products") and product candidates being developed by Regeneron and/or its collaborators or licensees (collectively, "Regeneron's Product Candidates") and research and clinical programs now underway or planned, including without limitation Libtayo[®] (cemiplimab) in combination with platinum-based chemotherapy as a first-line treatment for adults with locally advanced or metastatic non-small cell lung cancer; uncertainty of the utilization, market acceptance, and commercial success of Regeneron's Products (such as Libtayo in combination with chemotherapy) and Regeneron's Product Candidates and the impact of studies (whether conducted by Regeneron or others and whether mandated or voluntary), including the studies discussed or referenced in this press release, on any of the foregoing; the likelihood, timing, and scope of possible regulatory approval and commercial launch of Regeneron's Product Candidates and new indications for Regeneron's Products, such as Libtayo as a monotherapy or in combination with either conventional or novel therapeutic approaches for other solid tumors and blood cancers; the ability of Regeneron's collaborators, licensees, suppliers, or other third parties (as applicable) to perform manufacturing, filling, finishing, packaging, labeling, distribution, and other steps related to Regeneron's Products and Regeneron's Product Candidates; the ability of Regeneron to manage supply chains for multiple products and product candidates and risks associated with tariffs and other trade restrictions; safety issues resulting from the administration of Regeneron's Products (such as Libtayo as a monotherapy or in combination with chemotherapy) and Regeneron's Product Candidates in patients, including serious complications or side effects in connection with the use of Regeneron's Products and Regeneron's Product Candidates in clinical trials; determinations by regulatory and administrative governmental authorities which may delay or restrict Regeneron's ability to continue to develop or commercialize Regeneron's Products and Regeneron's Product Candidates; ongoing regulatory obligations and oversight impacting Regeneron's Products, research and clinical programs, and business, including those relating to patient privacy; the availability and extent of reimbursement or copay assistance for Regeneron's Products from third-party payors and other third parties, including private payor healthcare and insurance programs, health maintenance organizations, pharmacy benefit management companies, and government programs such as Medicare and Medicaid; coverage and reimbursement determinations by such payors and other third parties and new policies and procedures adopted by such payors and other third parties; changes in laws, regulations, and policies affecting the healthcare industry; competing drugs and product candidates that may be superior to, or more cost effective than, Regeneron's Products and Regeneron's Product Candidates (including biosimilar versions of Regeneron's Products); the extent to which the results from the research and development programs conducted by Regeneron

and/or its collaborators or licensees may be replicated in other studies and/or lead to advancement of product candidates to clinical trials, therapeutic applications, or regulatory approval; unanticipated expenses; the costs of developing, producing, and selling products; the ability of Regeneron to meet any of its financial projections or guidance and changes to the assumptions underlying those projections or guidance; the potential for any license, collaboration, or supply agreement, including Regeneron's agreements with Sanofi and Bayer (or their respective affiliated companies, as applicable), to be cancelled or terminated; the impact of public health outbreaks, epidemics, or pandemics on Regeneron's business; and risks associated with litigation and other proceedings and government investigations relating to the Company and/or its operations (including the pending civil proceedings initiated or joined by the U.S. Department of Justice and the U.S. Attorney's Office for the District of Massachusetts), risks associated with intellectual property of other parties and pending or future litigation relating thereto (including without limitation the patent litigation and other related proceedings relating to EYLEA® (afibercept) Injection), the ultimate outcome of any such proceedings and investigations, and the impact any of the foregoing may have on Regeneron's business, prospects, operating results, and financial condition. A more complete description of these and other material risks can be found in Regeneron's filings with the U.S. Securities and Exchange Commission, including its Form 10-K for the year ended December 31, 2024 and its Form 10-Q for the quarterly period ended June 30, 2025. Any forward-looking statements are made based on management's current beliefs and judgment, and the reader is cautioned not to rely on any forward-looking statements made by Regeneron. Regeneron does not undertake any obligation to update (publicly or otherwise) any forward-looking statement, including without limitation any financial projection or guidance, whether as a result of new information, future events, or otherwise.

Regeneron uses its media and investor relations website and social media outlets to publish important information about the Company, including information that may be deemed material to investors. Financial and other information about Regeneron is routinely posted and is accessible on Regeneron's media and investor relations website (<https://investor.regeneron.com>) and its LinkedIn page (<https://www.linkedin.com/company/regeneron-pharmaceuticals>).

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