U.S. and EU Patent Office Decisions Invalidate Amgen Subsidiary Immunex's Patents Claiming Antibodies to the IL-4 Receptor

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Today the European Patent Office invalidated Immunex's European patent claiming antibodies that target human IL-4 receptors (IL-4R)

Decision follows yesterday's ruling by the U.S. Patent & Trademark Office invalidating a similar Immunex patent claiming antibodies that target human IL-4R

Regeneron Pharmaceuticals, Inc. (NASDAQ: **REGN**) today announced two important legal developments invalidating Immunex patents with functional claims to antibodies that target human interleukin-4 receptors (IL-4R). Earlier today, the Opposition Division of the European Patent Office (EPO) revoked Immunex's European Patent No. 2,990,420 in its entirety because the claims were invalid for insufficiency of disclosure. This follows a decision yesterday by the Patent Trial and Appeal Board (PTAB) of the U.S. Patent & Trademark Office (USPTO) to invalidate all 17 claims of Immunex's U.S. Patent No. 8,679,487 as obvious. These decisions are subject to appeal by Immunex.

The patents in question are owned by Immunex Corporation, which is wholly-owned by Amgen.

"We applaud decisions by the U.S. and European patent offices this week, which invalidate Immunex's functional patent claims to antibodies that target human IL-4 receptors," said Joseph LaRosa, Executive Vice President, General Counsel and Secretary, Regeneron. "It is our position that Immunex's functional claims unfairly attempt to claim ownership far beyond the molecules developed, and stifle innovation within the broader scientific community."

Dupixent® (dupilumab), jointly developed by Regeneron and Sanofi, has been used to treat nearly 50,000 patients in the U.S. alone since it was first approved in 2017. Dupixent is a targeted biologic therapy that binds to IL-4R and inhibits signaling of IL-4 and IL-13, two key proteins that play a central role in Type 2 inflammation that underlies a number of allergic diseases, including atopic dermatitis and asthma.

Today's EPO decision follows a ruling in November 2017 (published in January 2018), invalidating a similar Immunex European patent also claiming antibodies that target human IL-4R.

About Dupixent
Dupixent comes in two doses (200 mg and 300 mg), each as a pre-filled syringe. Dupixent is intended for injection under the skin (subcutaneous injection) and is given every other week at different injection sites after an initial loading dose. It can be given in a clinic or, for convenience, at home by self-administration after training by a healthcare professional.

Dupixent is approved in the U.S. as a treatment for adults with moderate-to-severe atopic dermatitis whose disease is not adequately controlled with topical prescription therapies or when those therapies are not advisable; and as add-on maintenance treatment for patients 12 years and older with moderate-to-severe asthma with an eosinophilic phenotype or with oral corticosteroid-dependent asthma.

In the EU, Dupixent is approved for use in adults with moderate-to-severe atopic dermatitis who are candidates for systemic therapy.

Dupilumab Development Program
Regeneron, in collaboration with Sanofi, is also studying dupilumab in a broad range of clinical development programs for diseases driven by allergic and other Type 2 inflammation, including chronic rhinosinusitis with nasal polyps (Phase 3 *completed*), adolescent (12 to 17 years of age) atopic dermatitis (Phase 3 *completed*), pediatric (6 to 11 years of age) atopic dermatitis (Phase 3), pediatric (6 months to 5 years of age) atopic dermatitis (Phase 2/3), pediatric (6 to 11 years of age) asthma (Phase 3), eosinophilic esophagitis (Phase 3) and food and environment allergies (Phase 2). A future trial is planned for chronic obstructive pulmonary disease. Dupilumab is also being studied in combination with REGN3500, which targets IL-33. These potential uses are investigational and the safety and efficacy have not been evaluated by any regulatory authority. Dupilumab and REGN3500 were discovered using Regeneron's proprietary *VelocImmune*® technology that yields optimized fully human antibodies, and are being jointly developed by Regeneron and Sanofi under a global collaboration agreement.

U.S. INDICATIONS

DUPIXENT is a prescription medicine used:

- to treat adults with moderate-to-severe atopic dermatitis (eczema) that is not well controlled with prescription therapies used on the skin (topical), or who cannot use topical therapies. DUPIXENT can be used with or without topical corticosteroids. It is not known if DUPIXENT is safe and effective in children with atopic dermatitis under 18 years of age.
- with other asthma medicines for the **maintenance treatment of moderate-to-severe asthma** in people aged 12 years and older whose asthma is not controlled with their current asthma medicines. DUPIXENT helps prevent severe asthma attacks (exacerbations) and can improve your breathing. DUPIXENT may also help reduce the amount of oral corticosteroids you need while preventing severe asthma attacks and improving your breathing. DUPIXENT is not used to treat sudden breathing problems. It is not known if DUPIXENT is safe and effective in children with asthma under 12 years of age.

IMPORTANT SAFETY INFORMATION FOR U.S. PATIENTS

Do not use if you are allergic to dupilumab or to any of the ingredients in DUPIXENT®.

Before using DUPIXENT, tell your healthcare provider about all your medical conditions, including if you:

- have eye problems (if you also have atopic dermatitis)
- have a parasitic (helminth) infection
- are taking oral, topical, or inhaled corticosteroid medicines. **Do not** stop taking your corticosteroid medicines unless instructed by your healthcare provider. This may cause other symptoms that were controlled by the corticosteroid medicine to come back.
- are scheduled to receive any vaccinations. You should not receive a "live vaccine" if you are treated with DUPIXENT.
- are pregnant or plan to become pregnant. It is not known whether DUPIXENT will harm your unborn baby.
- are breastfeeding or plan to breastfeed. It is not known whether DUPIXENT passes into your breast milk.

Tell your healthcare provider about all the medicines you take, including prescription and over-the-counter medicines, vitamins and herbal supplements. If you are taking asthma medicines, do not change or stop your asthma medicine without talking to your healthcare provider.

DUPIXENT can cause serious side effects, including:

- **Allergic reactions (hypersensitivity), including a severe reaction known as anaphylaxis**. Stop using DUPIXENT and tell your healthcare provider or get emergency help right away if you get any of the following symptoms: breathing problems, fever, general ill feeling, swollen lymph nodes, swelling of the face, mouth and tongue, hives, itching, fainting, dizziness, feeling lightheaded (low blood pressure), joint pain, or skin rash.
- **Eye problems.** If you have atopic dermatitis, tell your healthcare provider if you have any new or worsening eye problems, including eye pain or changes in vision.
- **Inflammation in your blood vessels:** Rarely, this can happen in people with asthma who receive DUPIXENT. This may happen in people who also take a steroid medicine by mouth that is being stopped or the dose is being lowered. It is not known whether this is caused by DUPIXENT. Tell your healthcare provider right away if you have: rash, shortness of breath, persistent fever, chest pain, or a feeling of pins and needles or numbness of your arms or legs.

The most common side effects include injection site reactions, pain in the throat (oropharyngeal pain) and cold sores in your mouth or on your lips. Eye and eyelid inflammation, including redness, swelling and itching have been seen in patients who have atopic dermatitis.

Tell your healthcare provider if you have any side effect that bothers you or that does not go away. These are not all the possible side effects of DUPIXENT. Call your doctor for medical advice about side effects. You are encouraged to report negative side effects of prescription drugs to the FDA. Visit www.fda.gov/medwatch, or call 1-800-FDA-1088.

Use DUPIXENT exactly as prescribed. If your healthcare provider decides that you or a caregiver can give DUPIXENT injections, you or your caregiver should receive training on the right way to prepare and inject DUPIXENT. **Do not** try to inject DUPIXENT until you have been shown the right way by your healthcare provider. In adolescents with asthma 12 years of age and older, it is recommended that DUPIXENT be administered by or under supervision of an adult.

Please see accompanying full Prescribing Information including Patient Information.

About Regeneron Pharmaceuticals, Inc.

Regeneron (NASDAQ: REGN) is a leading biotechnology company that invents life-transforming medicines for people with serious diseases. Founded and led for 30 years by physician-scientists, our unique ability to repeatedly and consistently translate science into medicine has led to seven FDA-approved treatments and numerous product candidates in development, all 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, neuromuscular diseases, infectious diseases and rare diseases.

Regeneron is accelerating and improving the traditional drug development process through our proprietary *VelociSuite*® technologies, such as *VelocImmune*® which produces optimized fully-human antibodies, and ambitious research initiatives such as the Regeneron Genetics Center, which is conducting one of the largest genetics sequencing efforts in the world.

For additional information about the company, please visit www.regeneron.com or follow @Regeneron on Twitter.

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 Regeneron's products, product candidates, and research and clinical programs now underway or planned, including without limitation Dupixent® (dupilumab) Injection; risks associated with intellectual property of other parties and pending or future litigation and other proceedings relating thereto, including without limitation the patent litigation and other proceedings relating to Dupixent (such as the proceedings relating to U.S. Patent No. 8,679,487 and EP Patent No. 2,990,420 discussed in this press release), EYLEA® (aflibercept) Injection, and Praluent® (alirocumab) Injection, the ultimate outcome of any such proceedings, and the impact any of the foregoing may have on Regeneron's business, prospects, operating results, and

financial condition; the likelihood of success of any appeal of the decisions relating to U.S. Patent No. 8,679,487 and EP Patent No. 2,990,420 discussed in this press release; the likelihood, timing, and scope of possible regulatory approval and commercial launch of Regeneron's late-stage product candidates and new indications for marketed products, such as dupilumab for the treatment of pediatric atopic dermatitis, pediatric asthma, chronic rhinosinusitis with nasal polyps, eosinophilic esophagitis, food and environment allergies, chronic obstructive pulmonary disease, and other potential indications (as well as in combination with REGN3500); unforeseen safety issues resulting from the administration of products and product candidates (such as dupilumab) in patients, including serious complications or side effects in connection with the use of Regeneron's product candidates in clinical trials; ongoing regulatory obligations and oversight impacting Regeneron's marketed products (such as Dupixent), research and clinical programs, and business, including those relating to patient privacy; 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 product candidates, including without limitation dupilumab; the availability and extent of reimbursement of the Company's products (such as Dupixent) from third-party payers, including private payer 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 payers and new policies and procedures adopted by such payers; uncertainty of market acceptance and commercial success of Regeneron's products and product candidates (such as Dupixent) and the impact of studies (whether conducted by Regeneron or others and whether mandated or voluntary) on the commercial success of any such products and product candidates; competing drugs and product candidates that may be superior to Regeneron's products and product candidates; the extent to which the results from the research and development programs conducted by Regeneron or its collaborators may be replicated in other studies and lead to therapeutic applications; the ability of Regeneron to manufacture and manage supply chains for multiple products and product candidates; the ability of Regeneron's collaborators, suppliers, or other third parties to perform filling, finishing, packaging, labeling, distribution, and other steps related to Regeneron's products and product candidates; 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; and the potential for any license or collaboration agreement, including Regeneron's agreements with Sanofi, Bayer, and Teva Pharmaceutical Industries Ltd. (or their respective affiliated companies, as applicable), to be cancelled or terminated without any further product success. 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, 2018. 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 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 (http://newsroom.regeneron.com) and its Twitter feed (http://twitter.com/regeneron).

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