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Press Release
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Celyad's NKR-2 Phase I safety trial delivers encouraging results to be presented at ASH 2016

Mont-Saint-Guibert, Belgium - Celyad (Euronext Brussels and Paris, and NASDAQ: CYAD), a leader in the discovery and development of engineered cell therapies, today announces that first data analysis of the NKR-2 Phase I trial shows encouraging results which will be presented during a poster session at the 58th American Society of Hematology (ASH) Annual Meeting, taking place on December 3-6, 2016, in San Diego, CA.

The NKR-2 Phase I trial is a single infusion, dose escalation study evaluating the safety and feasibility of NKR-2 T-cells in Acute Myeloid Leukemia and Multiple Myeloma patients. This study was completed in September 2016 with a successful safety follow-up for all dose level cohorts. There were no cases of cytokine release syndrome, cell-related neurotoxicity, auto-immunity, or CAR-T related death.

Based on recent analysis, encouraging clinical update and correlative analysis, including post-infusion immunophenotyping, will be presented at the poster session of the ASH Annual Meeting:

> Title: **Safety Data from a First-in-Human Phase 1 Trial of NKG2D Chimeric Antigen Receptor-T Cells in AML/MDS and Multiple Myeloma** (Poster Presentation)
> Abstract: 4052
> Session: 616. Acute Myeloid Leukemia: Novel Therapy, excluding Transplantation: Poster III
> Presentation: Monday, December 5, 2016, 6:00pm – 8:00pm PST
> Location: San Diego Convention Center, Hall GH

Dr. Christian Homsy, CEO of Celyad commented: "*NKR-2 Phase I trial was a safety study with the primary objective of ensuring that there was no on-target, off-tumor toxicity. We are positively surprised at reports of unexpected clinical benefit, while testing just one single infusion dosed between 50 and 1,000 times lower than our expected efficacious dose extrapolated from animal experiments. Our exceptionally strong animal data was obtained with three injections of human equivalent doses of 1 to 2 billion cells per injection, while the highest dose tested in the NKR-2 study was 30 million cells in a single infusion. These results are therefore encouraging and we look forward to triggering the next phase of our NKR-T program once European agencies and the FDA have approved our THINK trial protocol".*

Dr. Frédéric Lehmann, VP Immuno-Oncology at Celyad: "*We are excited to present these data at ASH and to explore the full potential of our NKR-2 autologous therapy in our next development phase. The THINK trial will evaluate the clinical activity and safety in seven indications, in both hematologic malignancies and solid tumors. It is our hope that this study will be the foundation of a robust approach to treating patients with advanced tumors.*"

Dr. David Gilham, VP Research and Development at Celyad: "*NKR-2 CAR T cell therapy was designed to act like a drug with short term persistence and multiple injections in order to provide a better controlled and more predictable safety profile than that of other traditional CAR-T products. The primary objective is to avoid uncontrolled in-vivo cell expansion and long term persistence thereby replacing this paradigm with well controlled pharmacokinetics. We are re-assured to note that the safety outcome of this Phase I study confirms the pre-clinical animal data generated to date.*"

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About Celyad

Celyad is a clinical-stage biopharmaceutical company focused on the development of specialized cell-based therapies. The Company utilizes its expertise in cell engineering to target severe diseases with significant unmet need, including cancer. Celyad's Natural Killer Receptor based T-Cell (NKR-T) platform has the potential to treat a broad range of solid and liquid tumors. Its lead oncology candidate, NKR-2, has been evaluated in a single dose escalation Phase I clinical trial to assess the safety and feasibility of NKR-2 T-cells in patients suffering from AML or MM. In addition, Celyad has completed a Phase III trial in the EU for its C-Cure® cardiovascular disease candidate in ischemic heart failure. Celyad was founded in 2007 and is based in Mont-Saint-Guibert, Belgium, and Boston, Massachusetts. Celyad's ordinary shares are listed on the Euronext Brussels and Euronext Paris exchanges, and its American Depository Shares are listed on NASDAQ Global Market, all under the ticker symbol CYAD.

For more information about Celyad, please visit: www.celyad.com

About Celyad's NKR-T Cell Platform

Celyad is developing a unique Natural Killer Receptor (NKR) based T-Cell platform to target a wide range of solid and hematological tumors. Unlike traditional CAR-T cell therapy, which target only one tumor antigen, Natural Killer (NK) cell receptors enable a single receptor to recognize multiple tumor antigens.

Celyad's lead candidate, NKR-2, is a T-Cell engineered to express the human NK receptor, NKG2D, which is an activating receptor that triggers cell killing through the binding of NKG2D to any of eight naturally occurring ligands that are known to be overexpressed on more than 80% of tumors.

Preclinical results indicate that NKR-2 has multiple mechanisms of actions and goes beyond direct killing by signifying that its encoded T-Cells attack the tumor cells, inhibits the mechanisms that enable tumors to evade the immune system, activates and recruit anti-tumor immune cells and disrupts the blood supply

to the tumor. These mechanisms promote the induction of adaptive immunity, meaning the body develops a long-term cell immune memory against specific tumor antigens of the targeted tumor.

In contrast to traditional CAR-T therapeutic approaches, and based on strong preclinical evidence, Celyad's current NKR-2 program does not employ patient lymphodepleting pre-conditioning, thereby avoiding the toxicities associated with chemotherapy and allowing the immune system to remain intact.

Celyad is developing both autologous and allogeneic NKR-2 administrations. For autologous NKR-2, Celyad collects the patient's own T-Cells and engineers them to express NKG2D in order to target cancer cells effectively. Celyad's allogeneic platform engineers the T-Cells of healthy donors, that also express TCR Inhibitory Molecules (TIMs), to avoid having the engineered donor cells be rejected by the patient's normal tissues (also called Graft vs. Host Disease).

The preclinical research underlying this technology was originally conducted at Dartmouth College by Dr. Charles Sentman and has been published extensively in peer-reviewed publications.

About the ASH Annual meeting

Organized by the American Society of Hematology, the ASH Annual Meeting is the world's premier event in malignant and non-malignant hematology. The meeting gathers more than 20,000 international hematology professionals from every subspecialty and provides an opportunity to review thousands of scientific abstracts highlighting updates in the hottest topics in hematology.

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Forward looking statements

In addition to historical facts or statements of current condition, this press release contains forward-looking statements, including statements about the potential safety and feasibility of NKR-2 T-cell therapy and C-Cure and the clinical potential of the Company's technology platform generally and the timing of future clinical trials, which reflect our current expectations and projections about

future events, and involve certain known and unknown risks, uncertainties and assumptions that could cause actual results or events to differ materially from those expressed or implied by the forward-looking statements.

These forward-looking statements are further qualified by important factors, which could cause actual results to differ materially from those in the forward-looking statements, including risks associated with conducting clinical trials; the risk that safety, bioactivity, feasibility and/or efficacy demonstrated in earlier clinical or pre-clinical studies may not be replicated in subsequent studies; risk associated with the timely submission and approval of anticipated regulatory filings; the successful initiation and completion of clinical trials, including Phase III clinical trials for C-Cure® and Phase I clinical trial for NKR-2; risks associated with the satisfaction of regulatory and other requirements; risks associated with the actions of regulatory bodies and other governmental authorities; risks associated with obtaining, maintaining and protecting intellectual property, our ability to enforce our patents against infringers and defend our patent portfolio against challenges from third parties; risks associated with competition from others developing products for similar uses; risks associated with our ability to manage operating expenses; and risks associated with our ability to obtain additional funding to support our business activities and establish and maintain strategic business alliances and business initiatives.

A further list and description of these risks, uncertainties and other risks can be found in the Company's Securities and Exchange Commission filings and reports, including in the Company's prospectus filed with the SEC on June 19, 2015 and future filings and reports by the Company. Given these uncertainties, the reader is advised not to place any undue reliance on such forward-looking statements. These forward-looking statements speak only as of the date of publication of this document. The Company expressly disclaims any obligation to update any such forward-looking statements in this document to reflect any change in its expectations with regard thereto or any change in events, conditions or circumstances on which any such statement is based, unless required by law or regulation.

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