Celyad Oncology Presents Updates on shRNA-Based CAR T Programs at the 63rd ASH Annual Meeting and Exposition

- *Data continues to support the versatile potential of non-gene edited shRNA technology with updates from the CYAD-02 and CYAD-211 clinical programs*
- *Management to host conference call today December 13th at 2:30 p.m. CET / 8:30 a.m. EST*

MONT-SAINT-GUIBERT, Belgium, December 13, 2021 – Celyad Oncology SA (Euronext & Nasdaq: CYAD), a clinical-stage biotechnology company focused on the discovery and development of chimeric antigen receptor T cell (CAR T) therapies for cancer, today announced that data from the Phase 1 CYCLE-1 trial of CYAD-02 for the treatment of relapsed or refractory (r/r) acute myeloid leukemia (AML) and myelodysplastic syndromes (MDS) and the Phase 1 IMMUNICY-1 trial of CYAD-211 for the treatment of r/r multiple myeloma were presented at the 63rd American Society of Hematology (ASH) Annual Meeting and Exposition. The data support the potential and versatility of non-gene edited short hairpin RNA (shRNA) technology for the development of next-generation CAR T therapies.

“Our presentations at this year’s ASH conference continue to support the potential of our shRNA technology platform to have an impact in the CAR T space without the potential risks recently associated with gene-editing technologies,” said Dr. David Gilham, Chief Scientific Officer of Celyad Oncology. “Data from our CYAD-02 program indicate that a single shRNA can target two independent genes to optimize CAR T cell phenotype, a utility that we believe is unique among currently available gene-expression control technologies. Additionally, the initial observations of cell engraftment, lack of GvHD, and initial signs of clinical activity in the early stages of our first-in-human allogeneic CYAD-211 clinical study underpin the broad potential applicability of shRNA as a platform technology. As we continue to explore these individual product candidates and now focus upon evaluating clinical activity, this clinical proof of principle gives us high confidence to develop further novel clinical candidates based upon our novel shRNA platform.”

Filippo Petti, Chief Executive Officer of Celyad Oncology, added, “This is an exciting time for our company as we continue to validate the multifaceted approach of our shRNA technology. Continued progress with the CYAD-02 program demonstrates the power of shRNA in an autologous setting and serves as a strong foundation for any potential partnership with the program. We also have clear direction for our CYAD-211 program, where we plan to initiate enhanced lymphodepleting regimens to increase cell persistence to potentially maximize clinical benefit from the therapy. As we continue to build on our solid foundation in the allogeneic CAR T space, we remain committed to developing a new paradigm of therapy for these patients.”

Key Highlights from the ASH Annual Meeting

CYAD-02 and CYCLE-1 Phase 1 Trial Update

- Data from autologous NKG2D receptor CAR T candidate CYAD-02 using shRNA shows a single shRNA can target two independent genes to enhance the phenotype of the CAR T cells
- A favorable tolerability profile for CYAD-02 with a low rate of Grade ≥ 3 cytokine release syndrome in patients with relapsed or refractory acute myeloid leukemia or myelodysplastic syndrome (r/r AML / MDS)
- The dual knockdown of genes MICA/MICB with a single shRNA has a positive contribution to the initial clinical activity of CYAD-02 as compared to the first-generation, autologous NKG2D receptor CAR T, CYAD-01
    - Two MDS patients achieved a marrow complete response at dose level 3
    - Of the eight patients with stable disease, four had anti-leukemic activity
- Comparison of cellular kinetics for CYAD-02 and CYAD-01 trend towards increased engraftment and persistence of CYAD-02 versus CYAD-01, potentially associated with the knockdown of MICA/MICB and reduced fratricide *in vivo*

CYAD-211 and IMMUNICY-1 Phase 1 Trial Update

- Trial observations from allogeneic shRNA-based anti-BCMA CAR T candidate CYAD-211 support the continued development of shRNA-based allogeneic CAR T therapies as a feasible approach to overcome potential drawbacks and risks associated with autologous and gene-edited allogeneic CAR T therapies

- CYAD-211 demonstrated a good tolerability profile and evidence of clinical activity in the dose-escalation segment with three out of 12 total patients with relapsed or refractory multiple myeloma (r/r MM) evaluated for activity achieving partial response, one in each dose-level, while eight patients had stable disease
- All patients had detectable CYAD-211 cells in the peripheral blood; preconditioning chemotherapy led to earlier-than-expected recovery of host lymphocytes limiting persistence of CAR T cells
- The next segment of the IMMUNICY-1 trial will evaluate enhanced lymphodepleting regimens with the aim to improve persistence. In addition, the protocol also allows for CYAD-211 redosing in certain patients
- Enrollment in the cohorts evaluating enhanced lymphodepletion is ongoing. Additional data from the CYAD-211 IMMUNICY-1 trial are expected in mid-2022

Conference Call and Webcast Details
Celyad Oncology will host a conference call to discuss the update from ASH on Monday, December 13, 2021 at 2:30 p.m. CET / 8:30 a.m. EST. The conference call can be accessed through the following numbers:

United States: #1 877-407-9208
International: #1 201-493-6784

The conference call will be webcast live and can be accessed here. The event will also be archived and available on the "Events" section of the company's website. Please visit the website several minutes prior to the start of the broadcast to ensure adequate time for registration to the webcast.

About Celyad Oncology SA

Celyad Oncology SA is a clinical-stage biotechnology company focused on the discovery and development of chimeric antigen receptor T cell (CAR T) therapies for cancer. The Company is developing a pipeline of allogeneic (off-the-shelf) and autologous (personalized) CAR T cell therapy candidates for the treatment of both hematological malignancies and solid tumors. Celyad Oncology was founded in 2007 and is based in Mont-Saint-Guibert, Belgium and New York, NY. The Company has received funding from the Walloon Region (Belgium) to support the advancement of its CAR T cell therapy programs. For more information, please visit **www.celyad.com**.

Forward-looking statements

This release may contain forward-looking statements, within the meaning of applicable securities laws, including the Private Securities Litigation Reform Act of 1995. Forward-looking statements include statements regarding the clinical activity and safety and tolerability of CYAD-211 and expectations regarding enrollment and the announcement of additional clinical data, and the clinical activity and safety and tolerability of the CYAD-02 and CYAD-101 programs . Forward-looking statements may involve known and unknown risks and uncertainties which might cause actual results, financial condition, performance or achievements of Celyad Oncology to differ materially from those expressed or implied by such forward-looking statements. Such risk and uncertainty can be found in Celyad Oncology's U.S. Securities and Exchange Commission (SEC) filings and reports, including in the latest Annual Report on Form 20-F filed with the SEC and subsequent filings and reports by Celyad Oncology. These forward-looking statements speak only as of the date of publication of this document and Celyad Oncology's actual results may differ materially from those expressed or implied by these forward-looking statements. Celyad Oncology 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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