Press Release
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Celyad Presents Update on CYAD-01 Hematological Malignancies Clinical Program at 60th ASH Annual Meeting

- *CYAD-01 without preconditioning chemotherapy was well-tolerated and demonstrated anti-leukemic activity in five out of eight (62%) evaluable patients with relapsed or refractory (r/r) acute myeloid leukemia (AML) evaluable per protocol in THINK Phase 1 trial with three objective responses (CRh/CRi)*
- *Second cycle of CYAD-01 demonstrated ability to reduce relevant bone marrow blast in r/r AML patient post-hematological relapse*
- *Preliminary safety data from DEPLETHINK Phase 1 trial, evaluating CYAD-01 with preconditioning chemotherapy in r/r AML patients showed administration in the ongoing first dose cohort was well-tolerated with no Grade 3 or 4 treatment-related adverse events (AEs)*

Mont-Saint-Guibert, Belgium - Celyad (Euronext Brussels and Paris, and Nasdaq: CYAD), a clinical-stage biopharmaceutical company focused on the development of CAR-T cell-based therapies, today announced updated clinical data for the CYAD-01 program in hematological malignancies presented at the American Society of Hematology (ASH) 60th Annual Meeting.

<u>THINK Phase 1 Trial Update – Hematological Malignancies</u>

- Results from the dose-escalation trial were accepted as an oral presentation at ASH and presented by Principal Investigator David A. Sallman, M.D., Department of Malignant Hematology at Moffitt Cancer Center (abstracts #902). Interim analysis was reported for ten r/r AML patients across the three dose levels of CYAD-01 without preconditioning.
- Out of eight r/r AML patient evaluable per protocol (at least one cycle of treatment) in the dose escalation segment of the trial:
    - Five patients (62%) showed anti-leukemic activity with three out of eight patients (38%) exhibiting objective response and two patients (25%) exhibiting disease stabilization with relevant bone marrow blasts decrease.
        - As previously reported, one r/r AML patients achieved a complete response with partial hematological recovery (CRh). This patient was bridged to allotransplant and remains in minimal residual disease negative complete response (CR_{MRD-}) for over 14 months. Two r/r AML patients achieved a complete response with incomplete marrow recovery (CRi) with a duration of one month.
        - Two r/r AML patients treated at dose level 2 experienced disease stabilization with relevant bone marrow blast decrease. One patient experienced a decrease in blast counts from 9.8% to 5.5% after an initial cycle of CYAD-01. This patient subsequently received a second cycle of CYAD-01 at dose level 2, with the first injection of the second cycle administered seven weeks after the last injection of

cycle one. Treatment with a second cycle of CYAD-01 was associated with relevant reduction in bone marrow blast in the patient from 12.5% to 5.8%, which could be considered as an induction of a partial response (PR) post hematological relapse between the two cycles. Further analysis showed both patients achieved CYAD-01 engraftment in the bone marrow at day 28 of treatment.

  - A sixth r/r AML patient with adverse risk according the 2017 ELN stratification demonstrated a stabilization of disease at two months and is scheduled to initiate a second cycle of CYAD-01.
  - Only two patients evaluable per protocol progressed in the dose escalation phase of the trial.
  - Two additional r/r AML patients have been enrolled at dose level 3 of the trial and full results from these patients are anticipated during first half 2019.
- CYAD-01 without preconditioning chemotherapy was generally reported to be well-tolerated.
  - Overall, 14 patients with hematological malignancies (AML, myelodysplastic syndrome and multiple myeloma) treated with CYAD-01 in the trial reached the safety follow -up.
  - Overall, six patients experienced grade 3/4 treatment-related AEs, which included cytokine release syndrome (CRS), lymphopenia and thrombocytopenia.
  - CRS occurred in six patients (three grade 1/2 AEs, two grade 3 AEs and one grade 4 AE). Patients experiencing grade 1-3 CRS showed rapid resolution following the appropriate treatment, including tocilizumab.
  - One r/r AML patient experienced a grade 4 CRS, which was considered a dose-limiting toxicity (DLT), following the first injection of CYAD-01 at dose level 3. The single injection resulted in a reduction of peripheral blast counts from 14% to 4%.

Dr. Christian Homsy, CEO of Celyad, commented, *"Preliminary data from 14 patients with relapsed or refractory AML enrolled in the THINK trial have exceeded our expectations with five out of eight patients treated with CYAD-01 without preconditioning demonstrating a relevant anti-leukemic activity. In addition, we are encouraged by the initial safety data that shows CYAD-01 is well-tolerated. We are diligently working to enroll additional patients in our multiple ongoing clinical trials evaluating CYAD-01 in patients with acute myeloid leukemia to better assess this CAR T therapy's ability to drive a potentially meaningful impact on the treatment of the disease."*

DEPLETHINK Phase 1 Trial Update

- In October 2018, Celyad enrolled the first patient in the DEPLETHINK Phase 1 trial (NCT03466320). The open-label, dose-escalation trial will evaluate a single injection of CYAD-01 following treatment with the standard preconditioning regimen of cyclophosphamide (300 mg/m²) and fludarabine (30 mg/m²), or CyFlu.
- The trial includes two different intervals between lymphodepletion and administration of CYAD-01. In addition, the trial will evaluate two dose levels of CYAD-01 including 100 million and 300 million cells per injection, respectively. Following disease assessment at day 35, patients presenting no signs of progression are eligible to receive a cycle of three CYAD-01 injections without preconditioning with two-week intervals at their initial dose levels. The

primary endpoint of the trial is safety and secondary endpoints include clinical activity and pharmacokinetics.

- As of November 27, 2018, three patients have received an administration of CYAD-01 following preconditioning with CyFlu. Initial data demonstrate that the regimen was well tolerated, with no DLTs nor treatment-related grade 3 or above AEs observed. All three patients were not yet evaluated for clinical response.
- Preliminary data from the DEPLETHINK Phase 1 trial are expected in mid-2019.

THINK Phase 1 Trial – Schedule Optimization Cohort 10

- The THINK trial was recently amended to add a cohort to assess a more frequent dosing schedule of CYAD-01 for the treatment of r/r AML. The cohort will evaluate six injections of CYAD-01 without preconditioning over two months of administration. The first cycle (induction) will include three injections of CYAD-01 separated by one-week intervals. The second cycle will include three injections of CYAD-01 separated by two-week intervals. All patients in enrolled in the cohort will received 1 billion cells per injection.
- Enrollment in the cohort has begun and preliminary data are expected in first half 2019.

EPITHINK Phase 1 Trial Update

- The EPITHINK trial is a dose-escalation trial designed to evaluate the administration of CYAD-01 concurrently with 5-azacytidine in treatment-naïve and/or elderly AML patients ineligible for intensive treatment.
- As of November 27, 2018, no patients have been enrolled in the trial.

CYAD-01 and THINK Trial Design

CYAD-01 is an investigational CAR-T therapy in which a patient's T cells are engineered to express the chimeric antigen receptor NKG2D, a receptor expressed on natural killer (NK) cells that binds to eight stress-induced ligands expressed on tumor cells.

The THINK trial (NCT03018405) is an open-label, dose-escalation Phase 1 trial assessing the safety and clinical activity of multiple CYAD-01 administrations without prior preconditioning in two parallel cohorts: i) patients with hematological malignancies, including r/r AML, and ii) patients with metastatic solid tumors. The dose escalation segment of the study evaluates three dose levels (300 million, 1 billion and 3 billion cells per injection) of one cycle of three CYAD-01 administrations with two-week intervals.

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About Celyad

Celyad is a clinical-stage biopharmaceutical company focused on the development of specialized CAR-T cell-based therapies. Celyad utilizes its expertise in cell engineering to target cancer. Celyad's CAR-T cell platform has the potential to treat a broad range of solid and hematologic tumors. Its lead oncology candidate, CYAD-01 (CAR-T NKG2D), is currently being evaluated in a Phase I dose escalation clinical trial to assess the safety and clinical activity of multiple administrations of autologous CYAD-01 cells in seven refractory cancers including five solid tumors (colorectal, ovarian, bladder, triple-negative breast and pancreatic cancers) and two hematological tumors (acute myeloid leukemia and multiple myeloma). The safety and clinical activity of the CYAD-01 therapy concurrently administered with standard-of-care treatments or preconditioning chemotherapy is also being assessed in a full clinical development program focused on acute myeloid leukemia and colorectal cancer. Celyad was founded in 2007 and is based in Mont-Saint-Guibert, Belgium, and New York, NY. Celyad's ordinary shares are listed on the Euronext Brussels and Euronext Paris exchanges, and its American Depository Shares are listed on the Nasdaq Global Market, all under the ticker symbol CYAD.

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Forward-looking statements

This release may contain forward-looking statements, including statements regarding the safety and efficacy of CYAD-01 and CYAD-101; statements concerning the ongoing and planned clinical development of CYAD-01 and CYAD-101, including the timing of trials, enrollment, data readouts and presentations; the clinical and commercial potential of CYAD-01 and CYAD-101 and the adequacy of Celyad's financial resources; statements concerning Celyad's exclusive agreement with Horizon Discovery Group; Celyad's worldwide development and commercialization rights to CYAD-101; the clinical and commercial potential of its shRNA technology; Celyad's financial condition, results of operation and business outlook; and Celyad's expected cash burn. Forward-looking statements may involve known and unknown risks, uncertainties and other factors which might cause actual results, financial condition and liquidity, performance or achievements of Celyad, or industry results, to differ materially from those expressed or implied by such forward-looking statements. In particular it should be noted that the data

summarized above are preliminary in nature. There is limited data concerning safety and clinical activity following treatment with the CYAD-01 and CYAD-101 drug product candidates. These results may not be repeated or observed in ongoing or future studies involving the CYAD-01 and CYAD-101 drug product candidates. These forward-looking statements are further qualified by important factors and risks, which could cause actual results to differ materially from those in the forward-looking statements, including statements about: the initiation, timing, progress and results of our preclinical studies and clinical trials, and our research and development programs; our ability to advance drug product candidates into, and successfully complete, clinical trials; our ability to successfully manufacture drug product for our clinical trials, including with our mAb manufacturing process and with respect to manufacturing drug product with the desired number of T cells under our clinical trial protocols; our reliance on the success of our drug product candidates, including our dependence on the regulatory approval of CYAD-01 and CYAD-101 in the United States and Europe and subsequent commercial success of CYAD-01 and CYAD-101, both of which may never occur; the timing or likelihood of regulatory filings and approvals; our ability to develop sales and marketing capabilities; the commercialization of our drug product candidates, if approved; the pricing and reimbursement of our drug product candidates, if approved; the implementation of our business model, strategic plans for our business, drug product candidates and technology; the scope of protection we are able to establish and maintain for intellectual property rights covering our drug product candidates and technology; our ability to operate our business without infringing, misappropriating or otherwise violating the intellectual property rights and proprietary technology of third parties; cost associated with enforcing or defending intellectual property infringement, misappropriation or violation; product liability; and other claims; regulatory development in the United States, the European Union, and other jurisdictions; estimates of our expenses, future revenues, capital requirements and our needs for additional financing; the potential benefits of strategic collaboration agreements and our ability to maintain and enter into strategic arrangements; our ability to maintain and establish collaborations or obtain additional grant funding; the rate and degree of market acceptance of our drug product candidates, if approved; our financial performance; developments relating to our competitors and our industry, including competing therapies and statements regarding future revenue, hiring plans, expenses, capital expenditures, capital requirements and share performance. A further list and description of these risks, uncertainties and other risks can be found in Celyad's U.S. Securities and Exchange Commission (SEC) filings and reports, including in its Annual Report on Form 20-F filed with the SEC on April 6, 2018 and subsequent filings and reports by Celyad. 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 and Celyad's actual results may differ materially from those expressed or implied by these forward-looking statements. Celyad 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.