PRESS RELEASE

ERYTECH Announces $7.85 Million Registered Direct Offering

Lyon (France) and Cambridge, MA (U.S.), December 14, 2021 – ERYTECH Pharma (Nasdaq & Euronext: ERYP) (the "Company"), a clinical-stage biopharmaceutical company developing innovative therapies by encapsulating therapeutic drug substances inside red blood cells, today announced that it has entered into a definitive agreement with Armistice, a health-care focused institutional and accredited investor, for the purchase and sale of 769,608 units ("Units"), each Unit consisting of four ordinary shares in the form of American Depositary Shares (each an "ADS") and three warrants, each to purchase one ordinary share (each a "Warrant"), in a registered direct offering to specified categories of investors, described below. The subscription price for one Unit is $10.20 (€9.04), corresponding to $2.55(€2.26) per ADS and associated 0.75 warrant. Each ADS represents the right to receive one ordinary share, €0.10 nominal value, of the Company. The Warrants have an exercise price of €2.83 ($3.19) per share, will be immediately exercisable upon issuance and will expire two years from the issuance date. The closing of the offering is expected to occur on or about December 20, 2021, subject to satisfaction of customary closing conditions.

H.C. Wainwright & Co. is acting as the exclusive placement agent for the offering.

The gross proceeds to ERYTECH from the sale of the Units, before deducting placement agent fees and offering expenses, are expected to be approximately $7.85 million. The Company intends to use the net proceeds from this offering to fund the working capital of the Company and pre-commercialization operations to prepare for the potential approval of eryaspase in ALL in the United States.

Main terms of the share capital increase

The issuance of the 3,078,432 new ordinary shares underlying the ADSs will result in an immediate capital increase of €6,957,256.32 (divided into a nominal amount of €307,843.20 and a total issuance premium of €6,649,413.12and corresponding to a nominal value of ten cents (€0.10) plus an issuance premium of €2.16 per Share issued), representing approximately 11.02% of the Company's share capital and voting rights outstanding before the offering.

The issue price of the ordinary shares underlying the ADSs represented a premium of 0.1% from the volume-weighted average share price ("VWAP") of the Company's ordinary shares on the regulated market Euronext Paris during the three trading sessions preceding the determination of the issue price on December 14, 2021 and a discount of 19.6% from VWAP when including 19.7% of the theoretical value of one Warrant, which value per warrant is €0.59.

The Warrants will have a two-year term and represent a total of 75% coverage of the ADS issuance, representing 2,308,824 potential additional new ordinary shares and 6.8% of the Company's outstanding fully diluted share capital before the offering. The exercise price of the Warrants shall be equal to $3.19 (€2.83), representing 125% of the last closing price of the Company's shares on Euronext Paris preceding the determination of the issue price.

On an illustrative basis, a shareholder holding 1% of the Company's outstanding share capital before the completion of the offering and who did not participate in this offering would hold 0.90% of the

Company's outstanding share capital and voting rights after the completion of the offering and 0.84% of the Company's outstanding share capital and voting rights if the Warrants are exercised in full.

Following the closing of this offering, Armistice will hold 9.9% of the share capital and voting rights of the Company (on a non-diluted basis).

The share capital increase of the Company will be achieved by issuing ordinary shares underlying the ADSs with warrants attached, without shareholders' preferential subscription rights under the provisions of Article L. 225-138 of the French Commercial Code and pursuant to the 18th resolution of the general meeting of the shareholders of the Company held on June 25, 2021. This offering was open only to investors who met the categories defined in the above-mentioned resolution, i.e., (i) natural and legal persons, including companies, trusts, investment funds or other investment vehicles of any type, organized under French or foreign law, that habitually invest in the pharmaceutical, biotechnological or medical technology sectors and/or (ii) companies, institutions or entities of any type, French or foreign, that exercise a significant part of their business in the pharmaceutical, cosmetic, chemical or medical devices and/or technologies or research in these sectors.

After closing of this offering, the ordinary shares underlying the ADSs will be fungible with the Company's existing shares and listed on Euronext Paris under ISIN FR0011471135.

After collection of the net proceeds from this offering (which is expected to be €6.5 million), the Company believes it will be able to fund the continuation of its operations until the second half of 2022. As a result, the Company will not have sufficient net working capital to meet its obligations and operating cash requirements for the next twelve months.

Moreover, the Company has implemented cash preservation measures following the negative results of TRYbeCA-1. Coupled with the potential continued use of the current financing agreement in the form of convertible bonds (which is referred to as the OCABSA agreement) for an amount of approximately 8.5 million euros, which would result in additional dilution of 15% based on the trading price of the ordinary shares as of December 13, 2021, the Company believes that such measures would enable it to fund its operations until the third quarter of 2022 before taking into account the net proceeds from this offering and until the fourth quarter of 2022 after collection of the net proceeds from this offering.

The Company expects that the €6.5 million expected to be collected in the event of exercise in full of the Warrants would enable the Company to fund its operations until the first quarter of 2023.

Registration of the securities

The securities described above are being offered by ERYTECH pursuant to a "shelf" registration statement on Form F-3 (File No. 333-259690) previously filed with the Securities and Exchange Commission (the "SEC") on September 21, 2021 and declared effective by the SEC on September 29, 2021. The offering of the securities is being made only by means of a prospectus, including a prospectus supplement, forming a part of the effective registration statement. A final prospectus supplement and accompanying prospectus relating to the securities being offered will be filed with the SEC. Electronic copies of the final prospectus supplement and accompanying prospectus may be obtained, when available, on the SEC's website at http://www.sec.gov or by contacting H.C. Wainwright & Co., LLC at 430 Park Avenue, 3rd Floor, New York, NY 10022, by phone at (212) 856-5711 or e-mail at placements@hcwco.com.

This press release shall not constitute an offer to sell or a solicitation of an offer to buy these securities, nor shall there be any sale of these securities in any state or other jurisdiction in which such offer, solicitation or sale would be unlawful prior to the registration or qualification under the securities laws of any such state or other jurisdiction.

Information available to the public

For the purpose of the application to listing on the regulated market Euronext Paris of the new ordinary shares to be issued underlying the ADSs and the new ordinary shares to be issued upon exercise of the warrants, the Company will submit a listing prospectus in French to the approval of the Autorité des Marchés Financiers ("AMF") on December 14, 2021 (the "Prospectus"). The Prospectus in French shall comprise (i) the 2020 universal registration document of the Company ("2020 Document d'Enregistrement Universel") filed with the AMF on March 8, 2021 under number D. 21-0103, the first amendment to the 2020 Document d'Enregistrement Universel of the Company filed with the AMF on April 29, 2021 under number D. 21-0103-A01 ("Amendment No. 1 au Document d'Enregistrement Universel") and the subsequent amendment to the 2020 Document d'Enregistrement Universel to be filed on December 14, 2021 under number D.21-0103-A02 ("Amendement No. 2 au Document d'Enregistrement Universel"), and (ii) a Securities Note ("Note d'opération"), including (iii) a summary of the Prospectus in French. From the date of approval of the Prospectus by the AMF, copies of the Company's 2020 Document d'Enregistrement Universel, Amendement No. 1 au Document d'Enregistrement Universel, Amendement No. 2 au Document d'Enregistrement Universel and of the Note d'opération (including a summary of the Prospectus) in French will be available free of charge at the Company's head office located at 60 Avenue Rockefeller, 69008 Lyon, France, on the Company's website (www.erytech.com) and on the AMF's website (https://www.amf-france.org/). These hyperlinks are included pursuant to the Regulation (EU) 2017/1129 of the European Parliament and of the Council of June 14, 2017, as amended, ("Prospectus Regulation") for the convenience of investors and the contents of this website is not incorporated by reference into this press release.

About ERYTECH

ERYTECH is a clinical-stage biopharmaceutical company developing innovative red blood cell-based therapeutics for severe forms of cancer and orphan diseases. Leveraging its proprietary ERYCAPS® platform, which uses a novel technology to encapsulate drug substances inside red blood cells, ERYTECH is developing a pipeline of product candidates for patients with high unmet medical needs. ERYTECH's primary focus is on the development of product candidates that target the altered metabolism of cancer cells by depriving them of amino acids necessary for their growth and survival.

The Company's lead product candidate, eryaspase, which consists of L-asparaginase encapsulated inside donor-derived red blood cells, targets the cancer cell's altered asparagine and glutamine metabolism. The proof of concept of eryaspase as a cancer metabolism agent was established in different trials in acute lymphoblastic leukemia (ALL) and pancreatic cancer. An investigator sponsored Phase 2 trial (IST) evaluating the use of eryaspase in ALL patients who developed hypersensitivity reactions to pegylated asparaginase recently reported positive results, based on which the Company intends to request approval in the United States and potentially other territories. The Company is also pursuing a Phase 1 investigator-sponsored clinical trial in first-line pancreatic cancer.

Eryaspase received Fast Track designation from the U.S. Food and Drug Administration (FDA) for the treatment of advanced pancreatic cancer and treatment of acute lymphoblastic leukemia (ALL) patients who have developed hypersensitivity reactions to E. coli-derived pegylated asparaginase. The FDA and the European Medicines Agency have granted eryaspase orphan drug status for the treatment of pancreatic cancer and ALL.

ERYTECH produces its product candidates for treatment of patients in Europe at its GMP-approved manufacturing site in Lyon, France, and for patients in the United States at its GMP manufacturing site in Princeton, New Jersey, USA. Erysapase is not an approved medicine.

ERYTECH is listed on the Nasdaq Global Select Market in the United States (ticker: ERYP) and on the Euronext Paris regulated market (ISIN code: FR0011471135, ticker: ERYP). ERYTECH is part of the CAC Healthcare, CAC Pharma & Bio, CAC Mid & Small, CAC All Tradable, EnterNext PEA-PME 150 and Next Biotech indexes.

For more information, please visit www.erytech.com

Forward-looking information

This press release contains forward-looking statements including, but not limited to, statements relating to the registered direct offering, including as to the submission of an amendment to the URD to the AMF, the consummation of the offering described above, the expected proceeds from the offering, the intended use of proceeds, the timing of the closing of the offering, the potential exercise of the Warrants, and the Company's expectations regarding its ability to fund its ongoing operations. Certain of these statements, forecasts and estimates can be recognized by the use of words such as, without limitation, "believes", "anticipates", "expects", "intends", "plans", "seeks", "estimates", "may", "will" and "continue" and similar expressions. Such statements, forecasts and estimates are based on various assumptions and assessments of known and unknown risks, uncertainties and other factors, which were deemed reasonable when made but may or may not prove to be correct. Actual events are difficult to predict and may depend upon factors that are beyond ERYTECH's control. Further description of these risks, uncertainties and other risks can be found in the Company's regulatory filings with the French Autorité des Marchés Financiers (AMF), the Company's Securities and Exchange Commission (SEC) filings and reports, including in the Company's 2020 Document d'Enregistrement Universel filed with the AMF on March 8, 2021, as amended, and in the Company's Annual Report on Form 20-F filed with the SEC on March 8, 2021 and future filings and reports by the Company. Given these uncertainties, no representations are made as to the accuracy or fairness of such forward-looking statements, forecasts and estimates. Furthermore, forward-looking statements, forecasts and estimates only speak as of the date of this press release. Readers are cautioned not to place undue reliance on any of these forward-looking statements. ERYTECH disclaims any obligation to update any such forward-looking statement, forecast or estimates to reflect any change in ERYTECH's expectations with regard thereto, or any change in events, conditions or circumstances on which any such statement, forecast or estimate is based, except to the extent required by law. In addition, the COVID-19 pandemic and the associated containment efforts have had a serious adverse impact on the economy, the severity and duration of which are uncertain. Government stabilization efforts will only partially mitigate the consequences. The extent and duration of the impact on the Company's business and operations is highly uncertain, and that impact includes effects on its clinical trial operations and supply chain. Factors that will influence the impact on the Company's business and operations include the duration and extent of the pandemic, the extent of imposed or recommended containment and mitigation measures, and the general economic consequences of the pandemic. The pandemic could have a material adverse impact on the Company's business, operations and financial results for an extended period of time.

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A listing prospectus in French will be submitted to the AMF on December 14, 2021. It comprises (i) the 2020 universal registration document of the Company (Document d'enregistrement universel) filed with the AMF on March 8, 2021 under number D. 21-0103, the first amendement to the 2020 universal registration document filed with the AMF on April 29, 2021 under number D. 21-0103-A01 (Premier Amendement au Document d'Enregistrement Universel), the second amendment to be filed with the AMF on December 14, 2021 under number D.21-0103-A02 (Second Amendement au Document d'Enregistrement Universel), and (ii) a Securities Note (Note d'opération), including (iii) a summary of the prospectus in French. From the date of approval of the prospectus by the AMF, copies of the Company's 2020 universal registration document, first amendment to the 2020 universal registration document, second amendment to the 2020 universal registration document and of the listing prospectus in French will be available free of charge at the Company's head office located at 60 Avenue Rockefeller, 69008 Lyon, France on the Company's website (www.erytech.com) and on the AMF's website (www.amf-france.org). These hyperlinks are included pursuant to the Prospectus Regulation for the convenience of investors and the contents of this website is not incorporated by reference into this press release.

This document does not constitute an offer to the public in France and the securities referred to in this document can only be offered or sold in France pursuant to article L. 411-2 of the French Monetary and Financial Code to qualified investors (investisseurs qualifiés) as defined in Article 2(e) of the Prospectus Regulation.

This press release is an advertisement and not a prospectus within the meaning of Regulation (EU) 2017/1129 of the European Parliament and of the Council of June 14, 2017 (as amended the "Prospectus Regulation"). Potential investors are advised to read the prospectus before making an investment decision in order to fully understand the potential risks and rewards associated with the decision to invest in the ordinary shares or ADSs. The approval of the listing prospectus by the AMF should not be understood as an endorsement of the securities offered or admitted to trading on a regulated market.

With respect to the member States of the European Economic Area, no action has been undertaken or will be undertaken to make an offer to the public of the securities referred to herein requiring a publication of a prospectus in any relevant member State. As a result, the securities may not and will not be offered in any relevant member State except in accordance with the exemptions set forth in Article 1(4) of the Prospectus Regulation or under any other circumstances which do not require the publication by the Company of a prospectus pursuant to Article 3 of the Prospectus Regulation and/or to applicable regulations of that relevant member State.

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