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Emmaus Life Sciences Announces Collaboration with Kainos Medicine for Preclinical Development of IRAK4 Inhibitor as Potential Anti-Cancer Drug

TORRANCE, Calif., March 2, 2021 /PRNewswire/ --**Emmaus Life Sciences, Inc. (OTC: EMMA)**, a commercial-stage biopharmaceutical company and leader in the treatment of sickle cell disease, announced today that it has entered into an agreement with Kainos Medicine, Inc. ("Kainos") to lead the preclinical development of Kainos' patented IRAK4 inhibitor (KM10544) as an anti-cancer drug and further advance the research and development activity currently underway at Kainos. With this agreement in place, Kainos plans to complete the study of the therapeutic mechanism of action ("MOA") of KM10544 in solid cancers, blood cancers and lymphoma. Emmaus will be responsible for the investigation and proof of target disease selection, efficacy and safety. In a related development, the companies also entered into a letter of intent regarding possible future joint development of small molecule therapeutics and other pharmaceutical assets.



IRAK4 (interleukin-1 receptor-associated kinase 4) is a serine-threonine protein kinase made up of 460 amino acids that is a key messenger in signaling initiated by TLR/IL-1R (toll-like receptor/interleukin-1 receptor). It is known to be present and active in the occurrence of certain immunity responses, inflammation disorders and various cancers with myeloid differentiation factor 88 (MYD88) mutation.

Kainos will receive \$500,000 in cash and \$500,000 in shares of Emmaus common stock in consideration for entering into the agreement. Emmaus, in turn, has been granted rights of first negotiation and first refusal for an exclusive license regarding the development and commercialization of products based on the intellectual property resulting from the agreement. In the event a license agreement is executed between Kainos and Emmaus, Kainos' exclusive license to patent rights to KM10544 will be transferred to Emmaus on terms and conditions to be determined after further discussions.

"Emmaus is pleased to partner with Kainos to further advance the research and

development activity of KM10544," said Yutaka Niihara, M.D., M.P.H., Chairman and Chief Executive Officer of Emmaus. "We have reviewed various anti-cancer drug technologies and treatments. The KM10544 inhibitor has a potential role in treating malignancies such as Waldenstrom macroglobulinemia with MYD88 mutation where treatment options are very limited. Hence, we feel there is medical and commercialization potential for KM10544 in the U.S. and other markets."

About Emmaus Life Sciences

Emmaus Life Sciences, Inc. is a commercial-stage biopharmaceutical company engaged in the discovery, development, marketing and sale of innovative treatments and therapies, including those in the rare and orphan disease categories. Endari®, its treatment for sickle cell disease, is approved by the U.S. Food and Drug Administration. Emmaus had net revenues of \$22.8 million in 2019.

For more information, please visit www.emmausmedical.com.

About Endari® (prescription grade L-glutamine oral powder)

Indication - Endari is indicated to reduce the acute complications of sickle cell disease in adult and pediatric patients five years of age and older.

Important Safety Information

The most common adverse reactions (incidence >10 percent) in clinical studies were constipation, nausea, headache, abdominal pain, cough, pain in extremities, back pain, and chest pain.

Adverse reactions leading to treatment discontinuation included one case each of hypersplenism, abdominal pain, dyspepsia, burning sensation, and hot flash.

The safety and efficacy of Endari in pediatric patients with sickle cell disease younger than five years of age has not been established.

For more information, please see full Prescribing Information of Endari at: www.ENDARlrx.com/PI.


About Kainos Medicine, Inc.

Kainos Medicine, Inc., based in South Korea, is a clinical-stage company that specializes in the research and development of innovative medicines for brain diseases, cancers and infectious diseases, led by researchers who have years of experience and success in new drug discovery and development, and an executive team that has experience with NASDAQ-listed companies. Kainos receives specialized counsel on product selection, evaluation and external licensing deals from advisory boards and business development consultants who have skills and significant experience in global drug development. For more information, please visit www.kainosmedicine.com.

Forward-looking Statements

This press release contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, including statements regarding research and development activities and plans for the development of additional product candidates. These forward-looking statements are subject to risks and uncertainties inherent in drug development and other risk factors disclosed in the company's 2019 Annual Report on Form

10-K and other reports filed with the Securities and Exchange Commission, and represent the company's views only as of the date they are made and should not be relied upon as representing the company's views as of any subsequent date. The company's actual results may differ materially from those contemplated by these forward-looking statements. The company does not undertake to update any of these forward-looking statements to reflect a change in its views or events or circumstances that occur after the date of this press release except as required by law.

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