



## Kiadis announces new data related to its K-NK cell therapy platform presented today at the ISCT Annual Meeting

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- Data presented demonstrates improved *ex vivo* PM21 expansion of NK cells when pre-activated with cytokines.

**Amsterdam, The Netherlands, May 28, 2020 – Kiadis Pharma N.V. (“Kiadis” or the “Company”) (Euronext Amsterdam and Brussels: KDS)**, a clinical stage biopharmaceutical company, announces that new data related to its K-NK cell therapy platform will be presented today at the International Society of Cell & Gene Therapy (ISCT) virtual annual meeting. Poster #228, from the lab of Alicja Copik, Ph.D., at the University of Central Florida, will present data that shows how cytokine pre-activation enhances Kiadis’ PM21-particle driven NK cell expansion.

Dr. Copik’s group performed preclinical research to understand how both the expansion and the activity of *ex vivo* expanded NK cells can be further enhanced by coupling the PM21 expansion process with cytokine pre-activation prior to the expansion. This results in high-scale expansion of NK cells with a “memory-like” phenotype that can be re-activated upon detection of stimuli, resulting in a more potent response upon tumor detection. Other methods for producing NK cells with “memory-like” features have been developed and applied clinically, but cell yields were low and manufacturing processes were not amenable to scalable, commercial development.

Results presented as part of Dr. Copik’s poster at ISCT demonstrate that high-scale expansion of “memory-like” NK cells can be obtained with a combined pre-activation with cytokines followed by expansion with Kiadis’ PM21-platform. NK cells from healthy donor-derived peripheral blood mononuclear cell (PBMCs) were stimulated overnight with IL-12, IL-18 and IL-15 and then expanded with PM21 particles. The new methodology resulted in a significantly further increased expansion of NK cells than with PM21 alone. Also, the NK cells that were preactivated produced even larger amounts of IFN $\gamma$  and were very responsive to activation by K562 tumor cells or cytokines.

In addition, receptor expression was similar for both cytokine preactivated NK and PM21 activated NK cells and demonstrated that both are in a highly activated state as compared to IL-2 activated NK cells. *In vitro* and *in vivo* data are also presented that confirm their anti-leukemic effects.

In summary, pre-activation with IL-12, IL-18 and IL-15 followed by PM21 particle expansion leads to significantly further increases of NK cells. Such NK cells have further enhanced IFN $\gamma$  production upon stimulation with cytokines or tumor cells compared to PM21-NK cells without pre-activation, to yield a unique NK cell phenotype with a hyper-functional phenotype and potent therapeutic potential.

Robert Friesen, Chief Scientific Officer of Kiadis, commented, “The data presented today demonstrate the Kiadis platform can be further improved upon and we are excited to potentially incorporate this methodology into our manufacturing options to possibly attain even higher yields of more potent therapeutic NK cells that would further increase accessibility to patients in urgent need of novel therapeutic options.”

The poster is available at [www.kiadis.com](http://www.kiadis.com).

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### **Dutch Translation/Nederlandse vertaling**

**Kiadis Pharma N.V. (“Kiadis”)**, een biofarmaceutisch bedrijf gericht op onderzoek in de klinische fase, zal nieuwe informatie over het K-NK-celtherapieplatform presenteren op het jaarlijkse ISCT-congres (International Society of Cell & Gene Therapy). Op poster #228 van het laboratorium van Alicja Copik, Ph.D., werkzaam bij de University of Central Florida, zal informatie worden gepresenteerd over hoe de cytokine-preactivering de op PM21 gebaseerde NK-celexpansie van Kiadis verbetert.

De groep van Dr. Copik voerde preklinisch onderzoek uit om inzicht te krijgen in hoe het PM21-expansieproces vóór expansie gecombineerd kan worden met cytokine-preactivering om zowel de expansie als de activiteit van *ex vivo* geëxpandeerde NK-cellen te verbeteren. Dit resulteert in een grootschalige expansie van NK-cellen met een uniek fenotype dat gereactiveerd kan worden bij detectie van stimuli. Hierdoor is een krachtigere respons mogelijk bij tumordetectie. Er werden al andere klinische methoden ontwikkeld en toegepast om NK-cellen te produceren met cytokine-preactivering, maar daarbij was de celopbrengst laag en waren de productieprocessen niet geschikt voor schaalbare, commerciële toepassingen.

De resultaten die op het ISCT-congres worden getoond op de poster van Dr. Copik tonen aan dat een grootschalige expansie van unieke NK-cellen mogelijk is door een combinatie van cytokine-preactivering gevolgd door expansie met het PM21-platform van Kiadis. NK-cellen afkomstig van perifere mononucleaire bloedcellen (PBMC’s) van een gezonde donor werden kort gestimuleerd met IL-12, IL-18 en IL-15 en vervolgens geëxpandeerd met PM21-deeltjes. De nieuwe methodologie resulteerde in een significant verder vergrote toename van NK-cellen dan wanneer alleen PM21 werd toegepast. De NK-cellen die vooraf werden geactiveerd, produceerden bovendien grote hoeveelheden IFN $\gamma$  en reageerden zeer goed op activering door K562-tumorcellen of cytokines.

Daarnaast was de receptorexpressie van met cytokine geactiveerde NK-cellen vergelijkbaar met PM21-geactiveerde NK-cellen. Beide varianten bevinden zich in een zeer geactiveerde toestand in vergelijking met IL-2-geactiveerde NK-cellen. Er worden ook in-vitro- en in-vivogegevens getoond die de antileukemische werking van de NK cellen bevestigen.

Kortom, preactivering met IL-12, IL-18 en IL-15 gevolgd door PM21-expansie leidt tot een significant hogere expansie van NK-cellen. De IFN $\gamma$ -productie bij stimulatie met cytokines of tumorcellen is bij dergelijke NK-cellen verder verbeterd dan wanneer enkel PM21-deeltjes worden toegepast zonder preactivering. Dit resulteert in een uniek, hyperfunctioneel fenotype voor NK-cellen met een groot therapeutisch potentieel.

Robert Friesen, Chief Scientific Officer bij Kiadis, zei: "De informatie die we vandaag hebben gepresenteerd toont aan dat het Kiadis-platform nog verder kan worden verbeterd. We zijn verheugd om deze methodologie mogelijk toe te passen in onze productiemethoden. Dit kan in betere therapeutische NK-cellen met een hogere opbrengst resulteren, waardoor we meer patiënten met een dringende behoefte aan nieuwe therapeutische opties kunnen helpen."

De poster is beschikbaar op [www.kiadis.com](http://www.kiadis.com).

**Dit persbericht vormt een vertaling van het gepubliceerde Engelstalige persbericht. Bij eventuele verschillen is de tekst van het Engelstalige persbericht altijd bepalend.**

#### **About Kiadis' K-NK-Cell Therapies**

Kiadis' NK-cell programs consist of off-the-shelf and haplo donor cell therapy products for the treatment of liquid and solid tumors as adjunctive and stand-alone therapies.

The Company's NK-cell PM21 particle technology enables improved *ex vivo* expansion and activation of anti-cancer cytotoxic NK-cells supporting multiple high-dose infusions. Kiadis' proprietary off-the-shelf NK-cell platform is based on NK-cells from unique universal donors. The Kiadis off-the-shelf K-NK platform can make NK-cell therapy product rapidly and economically available for a broad patient population across a potentially wide range of indications.

Kiadis is clinically developing K-NK003 for the treatment of relapse/refractory acute myeloid leukemia. The Company is also developing K-NK002, which is administered as an adjunctive immunotherapeutic on top of HSCT and provides functional, mature and potent NK-cells from a haploidentical family member. In addition, the Company has pre-clinical programs evaluating NK-cell therapy for the treatment of solid tumors.

#### **About Kiadis**

Founded in 1997, Kiadis is building a fully integrated biopharmaceutical company committed to developing innovative therapies for patients with life-threatening diseases. With headquarters in Amsterdam, the Netherlands, and offices and activities across the United States, Kiadis is reimagining medicine by leveraging the natural strengths of humanity and our collective immune system to source the best cells for life.

Kiadis is listed on the regulated market of Euronext Amsterdam and Euronext Brussels since July 2, 2015, under the symbol KDS. Learn more at [www.kiadis.com](http://www.kiadis.com).

#### **Forward Looking Statements**

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