UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 8-K

CURRENT REPORT
Pursuant to Section 13 or 15(d)
of the Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): September 19, 2018

PIERIS PHARMACEUTICALS, INC.
(Exact Name of Registrant as Specified in its Charter)

Nevada	**001-37471**	**EIN 30-0784346**
(State of Incorporation)	**(Commission File Number)**	**(IRS Employer Identification No.)**

255 State Street, 9th Floor
Boston, MA 02109
United States
(Address of principal executive offices, including zip code)

Registrant's telephone number, including area code: 857-246-8998

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

☐ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

☐ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

☐ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

☐ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (17 CFR §230.405) or Rule 12b-2 of the Securities Exchange Act of 1934 (17 CFR §240.12b-2).

Emerging Growth Company ☒

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Item 7.01: Regulation FD Disclosure.

On September 19, 2018, Pieris Pharmaceuticals, Inc. presented preclinical data regarding PRS-060. The poster is furnished as Exhibit 99.1 to this Current Report on Form 8-K and is incorporated by reference herein.

The information set forth under this "Item 7.01. Regulation FD Disclosure," including the exhibits attached hereto, shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, nor shall it be deemed incorporated by reference into any filing under the Securities Act of 1933, as amended, except as shall be expressly set forth by specific reference in such filing.

Item 9.01 Financial Statements and Exhibits

(d) *Exhibits.*

99.1 Conference Poster, Dated September 2018.

SIGNATURE

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

PIERIS PHARMACEUTICALS, INC.

Dated: September 19, 2018

/s/ Allan Reine

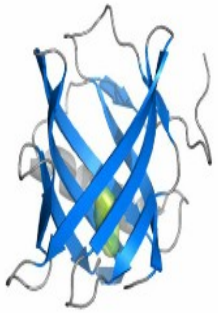
Allan Reine
Chief Financial Officer

AZD1402/PRS-060, an inhaled Anticalin® IL-4Rα antagonist, potently inhibits IL-4 induced functional effects in human whole blood, which can be employed translationally in clinical studies.

Katerina Pardali*, Fanyi Jiang*, Mary Fitzgerald‡, Gabriele Matschiner‡, David Keeling*.
‡ Pieris Pharmaceuticals, 255 State St, 9th Floor, Boston, MA 02109, United States of America. *Respiratory, Immunology and Autoimmunity IMED Unit, AstraZeneca, Gothenburg, Sweden

Abstract

Introduction: AZD1402 is an Anticalin® protein in clinical development that has the potential to offer an inhaled treatment for asthma patients suffering from T2-driven disease through selective blockade of IL-4Rα.
Aims and objective: To characterise the effect of AZD1402 on IL-4Rα signalling in human whole blood (WB) and establish a method to evaluate the functional impact of systemic exposure to AZD1402 following inhaled dosing.
Methods: WB from healthy subjects was stimulated with IL-4 in the presence or absence of AZD1402. Phosphorylation of signaling components and released soluble biomarkers were quantified using FACS and multiplex ELISA, respectively.
Results: Stimulation of human WB with IL-4 resulted in increased levels of phosphorylated STAT6 (pSTAT6) and in the release of eotaxin-3, TARC, and MDC. AZD1402, when added to WB samples (n=12), inhibited pSTAT6 in a concentration-dependent manner and with similar potency to the anti-IL-4Rα monoclonal antibody dupilumab (IC50 values1.3 and 0.8 nM, respectively). Inhibition of the release of the soluble cytokines eotaxin-3, TARC, and MDC by AZD1402, at equivalent potencies to dupilumab, was observed (IC50 values of 2.1 nM, 1.3 nM, and 2.0 nM, respectively). The low level of variation observed render this method suitable to detect the presence of systemic (pharmacologically active) levels of AZD1402 following inhaled dosing.
Conclusions: AZD1402, potently inhibits IL-4Rα signalling in human WB with IC50 values comparable to those of dupilumab. pSTAT6 responses in WB are used in the NCT03384290 Phase I trial to assess systemic exposure.

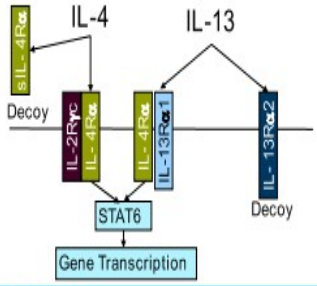


- AZD1402/PRS-060 is an Anticalin® protein engineered from human lipocalins developed by Pieris Pharmaceuticals. Its low molecular weight (16.9 kDa) makes it ideally suited for inhaled delivery.
- The antibody-like binding of Anticalin proteins allows inhibition of a wide range of important biological targets not tractable with small molecule drugs

Introduction

- AZD1402 is an Anticalin® antagonist of IL-4Rα, intended as inhaled treatment for moderate to severe asthma through selective receptor blockade in T2-driven disease.
- AZD1402 is currently in Phase 1 studies; a single ascending dose study in healthy volunteers and multiple ascending dose study in mild asthmatics.
- IL-4 signals via IL-4Rα and results in phosphorylation of STAT6, downstream gene transcription and cytokine release of mediators such as Eotaxin-3, TARC, and MDC (Fig. 1).
- Assessing AZD1402 functional effects in whole blood with robust assays allows us to determine systemic target engagement and potentially to help dissect local from systemic effects of the inhaled drug.

Figure 1:
IL-4Rα is the common receptor subunit for signalling of IL-4 and IL-13



Aim and objectives

To characterise the effect of AZD1402 on IL-4Rα signalling in human whole blood and establish a method to evaluate the functional impact of systemic exposure to AZD1402 following inhaled dosing.

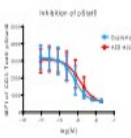
Methods

- Heparin treated whole blood was stimulated with 8 ng/ml IL-4 for 15 min with increasing concentrations of AZD1402 and pSTAT6 in the CD3+ T cell subpopulation was assessed.
- Heparin treated whole blood was stimulated with 8 ng/ml IL-4 for 24 h with increasing concentrations of AZD1402, followed by measurement of Eotaxin-3, TARC, and MDC using multiplex ELISA.

Results

In vitro addition of AZD1402 during IL-4 stimulation results in:
1. Dose dependent inhibition of STAT6 phosphorylation with a similar potency to the IL-4Rα blocking monoclonal antibody, dupilumab (Fig. 2).
2. Dose dependent inhibition of the soluble biomarkers Eotaxin-3, TARC and MDC with similar potency to dupilumab (Fig. 2). These assays are being further developed using the TruCulture® System technology (HotScreen and Myriad RBM) and can easily be applied in a clinical setting (Fig. 3)

Results



Drug	IC_{50} [nM] pSTAT6	IC_{50} [nM] Eotaxin-3	IC_{50} [nM] TARC	IC_{50} [nM] MDC
AZD1402	1.3	2.1	1.3	2.0
Dupilumab	0.8	1.5	0.8	1.1

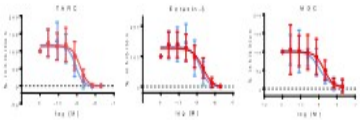


Figure 2: In vitro addition of AZD1402 reduces the levels of pSTAT6 and the levels of Eotaxin-3, TARC and MDC after IL-4 stimulation:
Inhibition of pSTAT6 (upper left), Eotaxin-3, TARC and MDC (lower panels) and table with the IC_{50} values of AZD1402 (•) and Dupilumab (•) in the assays depicted (upper right).

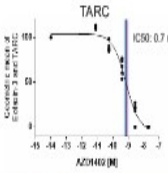


Figure 3: AZD1402 inhibits TARC release from whole blood when stimulated in vitro with IL-4 using the TruCulture® System technology.

Conclusions

- AZD1402 inhibits IL-4 signaling in whole blood as assessed by STAT6 phosphorylation as well as Eotaxin-3, TARC and MDC production induced by IL-4 stimulation. It had a similar potency to dupilumab in these functional assays.
- Measurement of ex vivo IL-4-stimulated pSTAT6 responses in whole blood as well as downstream cytokine release can be used to assess systemic target engagement following inhaled dosing of AZD1402. Furthermore, these assays will contribute to a more complete understanding of the site of action of this drug.

References
1. Stat6 Regulation of In Vivo IL-4 Responses; Finkelman F. D., Morris S. C., Orekhova T., Mori M., Donaldson D., Reiner S. L., Reilly N. L., Schopf L., Urban J. F. Jr.; J. Immunology; 2000.
2. IL-4 induces expression of TARC/CCL17 via two STAT6 binding sites; Wirnsberger G., Hebenstreit D., Posselt G., Horejs-Hoeck J., Duschl A.; Eur J Immunol; 2006.

Acknowledgements
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