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): August 1, 2022

Acumen Pharmaceuticals, Inc.
(Exact name of registrant as specified in its Charter)

Delaware	**001-40551**	**36-4108129**
(State or Other Jurisdiction of Incorporation)	**(Commission File Number)**	**(IRS Employer Identification No.)**

427 Park St., Charlottesville, Virginia	**22902**
(Address of Principal Executive Offices)	**(Zip Code)**

(434) 297-1000
(Registrant's Telephone Number, Including Area Code)

Not Applicable
(Former Name or Former Address, if Changed Since Last Report)

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 (see General Instructions A.2. below):

☐ 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))

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, $0.0001 par value	**ABOS**	**The Nasdaq Global Select Market**

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

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 August 1, 2022, Acumen Pharmaceuticals, Inc. (the "***Company***") issued a press release announcing it will be presenting a poster with an accompanying presentation regarding the preparation and qualification of soluble AßOs for use in bioanalytical assays supporting Alzheimer's disease therapeutics during the 2022 Alzheimer's Association International Conference taking place from July 31 through August 4, 2022 in San Diego, California (the "***AAIC 22***"). The poster will be presented at the conference on August 3, 2022. A copy of the press release and of the poster being presented are attached as Exhibits 99.1 and 99.2, respectively, to this Current Report on Form 8-K (this "***Report***").

The information in this Report, including Exhibit 99.1 and Exhibit 99.2 hereto, is furnished pursuant to Item 7.01 and shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the "***Exchange Act***"), or otherwise subject to the liabilities of that Section, nor shall it be deemed incorporated by reference in any filing under the Securities Act of 1933, as amended, or the Exchange Act, except as expressly set forth by specific reference in such filing. The Company's submission of this Report shall not be deemed an admission as to the materiality of any information required to be disclosed solely to satisfy the requirements of Regulation FD.

This Report and Exhibit 99.1 and Exhibit 99.2 hereto contain forward-looking statements within the meaning of the federal securities laws. These forward-looking statements are based on current expectations and are not guarantees of future performance. Further, the forward-looking statements are subject to limitations listed in Exhibit 99.1 and in the other reports of the Company filed with the Securities and Exchange Commission, including that actual events or results may differ materially from those in the forward-looking statements.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits

Exhibit No.	Description
99.1	Press Release, dated August 1, 2022
99.2	AAIC 22 Poster: Preparation and qualification of soluble AßOs for use in bioanalytical assays supporting AD therapeutics
104	Cover Page Interactive Data File (the cover page XBRL tags are embedded within the inline XBRL document)

SIGNATURES

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

Acumen Pharmaceuticals, Inc.

Dated: August 1, 2022

By: /s/ Matthew Zuga
Matthew Zuga
Chief Financial Officer and Chief Business Officer

Exhibit 99.1

Acumen presents poster describing method to standardize amyloid beta oligomer assays supporting therapeutic development for early Alzheimer's disease

Model designed to fill need for soluble amyloid beta oligomer reference standards in bioanalytical assays

Charlottesville, Va. and Carmel, Ind. (August 1, 2022) – Scientists at Acumen Pharmaceuticals, Inc. (NASDAQ: ABOS) have developed a synthetic model to potentially standardize the study of soluble amyloid beta oligomers, (AßOs), toxic proteins that accumulate early in Alzheimer's disease (AD). This methodology will be presented in a poster at the Alzheimer's Association International Conference (AAIC), held in-person in San Diego and virtually between July 31 and Aug. 4, 2022.

Studies suggest toxic soluble AßOs contribute to AD-associated memory and cognitive problems. However, soluble AßOs have been challenging to model in the laboratory as their structures in the brain are difficult to characterize due to their low concentration and instability, and because they appear in various forms. To adequately study soluble AßOs, standardized analytical tools are required.

Utilizing Aß-derived diffusible ligands (ADDLs) as a synthetic AßO model may aid in standardization of AßO assays. For example, using ADDL assays to better understand the specificity and selectivity of Aß-targeting antibodies may support therapeutic development. Other expected uses for ADDLs are as a quantitative standard in assays aimed at measuring soluble AßOs or AßO auto-antibodies in patient biofluids.

"These research efforts towards developing a reliable model of AßOs will contribute to the greater body of knowledge around oligomers and Alzheimer's disease," said Eric Siemers, M.D., Chief Medical Officer at Acumen Pharmaceuticals. "AßOs have been a lesser studied target in Alzheimer's disease. We expect our ongoing Phase 1 clinical trial of ACU193 to provide proof of mechanism data that we believe will shed additional light on the role of oligomers in Alzheimer's disease." The poster, "Preparation and qualification of soluble amyloid beta oligomers for use in bioanalytic assays supporting Alzheimer's disease therapeutics" (P4-178), will be presented on Wednesday, Aug. 3, 2022 and is viewable on the AAIC conference website to registrants through Sept. 2, 2022.

About Acumen Pharmaceuticals, Inc.

Acumen, headquartered in Charlottesville, VA, with clinical operations based in Carmel, IN, is a clinical stage biopharmaceutical company developing a novel disease-modifying approach to treat Alzheimer's disease. Acumen's scientific founders pioneered research on AßOs, which a growing body of evidence indicates are primary triggers of Alzheimer's disease pathology. Acumen is currently focused on advancing its investigational product candidate, ACU193, a humanized monoclonal antibody that selectively targets toxic soluble AßOs in INTERCEPT-AD, a Phase 1 clinical trial involving early Alzheimer's disease patients. For more information, visit www.acumenpharm.com.

Forward-Looking Statements

This press release contains forward-looking statements within the meaning of The Private Securities Litigation Reform Act of 1995. Any statement describing Acumen's goals, expectations, financial or other projections, intentions or beliefs is a forward-looking statement and should be considered an at-risk statement. Words such as "believes," "expects," "anticipates," "could," "would," "seeks," "aims," "plans," "potential," "will" and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. Forward-looking statements include statements concerning Acumen's business and the therapeutic potential of Acumen's product candidate, ACU193, including its potential for improved safety and efficacy as compared to other monoclonal antibodies in development, as well as the expectations concerning the INTERCEPT-AD trial and expectations with respect to the role of toxic soluble AßOs in the potential treatment of Alzheimer's disease. These statements are based upon the current beliefs and expectations of Acumen management, and are subject to certain factors, risks and uncertainties, particularly those inherent in the process of discovering, developing and commercializing safe and effective human therapeutics. Such risks may be amplified by the impacts of the COVID-19 pandemic. These and other risks concerning Acumen's programs are described in additional detail in Acumen's filings with the Securities and Exchange Commission ("SEC"), including in Acumen's Annual Report on Form 10-K for the year ended December 31, 2021, filed with the SEC on March 28, 2021, which is available on the SEC's website at www.sec.gov, and its other documents subsequently filed with or furnished to the SEC. Copies of these and other documents are available from Acumen. Additional information will be made available in other filings that Acumen makes from time to time with the SEC. These forward-looking statements speak only as of the date hereof, and Acumen expressly disclaims any obligation to update or revise any forward-looking statement, except as otherwise required by law, whether, as a result of new information, future events or otherwise.

Contacts:

Media:
AcumenPR@westwicke.com

Investors:
investors@acumenpharm.com

Preparation and qualification of soluble AβOs for use in bioanalytical assays supporting AD therapeutics

Erika Cline[1], Hugo Vanderstichele[2]*, Derrick Johnson[3], Sanofar Jainul Abdeen[3], Paul McDermott[3], James Cruse[3], Kirsten Viola[4], Guus Scheefhals[5], Robert Dean[6], Jasna Jerecic[1]

[1]Acumen Pharmaceuticals, Charlottesville, VA, USA, [2]Biomarkable, Gent, Belgium, [3]B2S Life Sciences, Indianapolis, IN, USA, [4]Department of Neurobiology, Northwestern University, Evanston, IL, USA, [5]Augmentor Management BV, Soest, NL, [6]Department of Pathology & Laboratory Medicine, Indiana University School of Medicine, Indianapolis, IN ***Presenting author***

Introduction

Objectives

Soluble amyloid beta oligomers (sAβOs) accumulate early in Alzheimer's disease (AD) and substantial experimental evidence indicates that sAβOs trigger AD-related neuropathologies as well as impairment in learning and memory. Despite this, the sAβO structures contributing to the neurotoxic effects in the AD brain remain ill-defined due to their low concentration, instability, and heterogeneity, impeding the effective design and use of sAβO reference standards in bioanalytical assays. sAβO assays, in combination with assays for Tau and Aβ proteoforms, could become a tool for earlier diagnosis of neurodegenerative disease subtypes as well as for measurement of sAβO-targeting drug pharmacokinetics, target engagement, or treatment efficacy in clinical trials. At present, no assays for sAβOs have proven robustness and clinical performance, due at least in part to the lack of readily available, well-characterized, critical raw materials, including antibodies and reference materials for preparation of sAβO calibrators and quality control specimens.

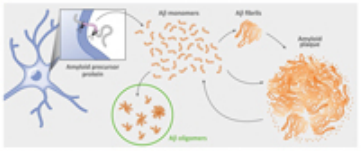
Methods

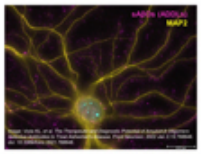
We have used amyloid-derived diffusible ligands (ADDLs) as an sAβO standard integrated into different assays designs. As a proof-of-concept, we have utilized these ADDL assays to study the specificity and selectivity of antibodies targeting sAβOs. All assays utilized the Mesoscale Discovery (MSD) technology and were conducted in the laboratories of B2S LifeSciences (Indianapolis, IN).

RESEARCH HIGHLIGHTS

- Soluble amyloid beta oligomers (sAβOs) accumulate early in AD and trigger neuropathologies and cognitive impairment.
- The non-abundance, instability, and heterogeneity of sAβOs has impeded their effective use as reference standards in bioanalytical assays.
- Here, we demonstrate the utility of ADDLs as a synthetic reference standard for sAβOs to study antibody specificity and selectivity.
- Other expected uses are: (i) as a calibrator in immunoassays aimed at quantitation of sAβO levels as a function of AD pathogenesis; or (ii) to screen for the presence of sAβO auto-antibodies in biofluids.

Soluble AβOs are AD neurotoxins

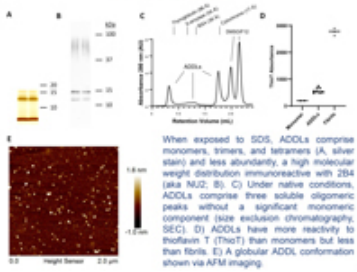




SOLUBLE AβOS (sAβOS) ARE DISTINCT FROM FIBRILS AND EXPERIMENTALLY INDUCE MANY FACETS OF AD PATHOGENESIS. Left: Aβ monomers can aggregate into either fibrils or sAβOs, the latter of which can bind cultured neurons in a punctate manner (middle) consistent with synapse binding. Right: Downstream of synaptic binding, sAβOs (including ADDLs) have been shown to induce many aspects of AD pathogenesis (reviewed in Cline et al 2018 *J Alzheimers Dis* **64**:S1).

ADDL Characteristics

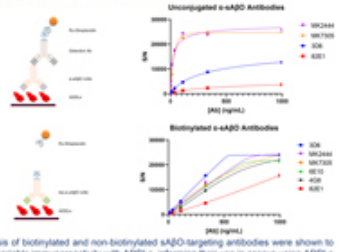
ADDLS ARE SOLUBLE, GLOBULAR OLIGOMERS OF Aβ WITH A WIDE SIZE DISTRIBUTION.



When exposed to SDS, ADDLs comprise monomers, trimers, and tetramers (A, silver stain) and less abundantly, a high molecular weight distribution immunoreactive with 2B4 (aka NU2; B). C) Under native conditions, ADDLs comprise three soluble oligomeric peaks without a significant monomeric component (size exclusion chromatography, SEC). D) ADDLs have more reactivity to thioflavin T (ThioT) than monomers but less than fibrils. E) A globular ADDL conformation shown via AFM imaging.

Results

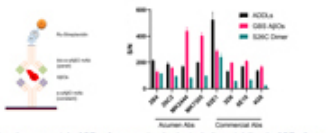
THE ADDL IMMUNOREACTIVITY OF A PANEL OF sAβO-TARGETING ANTIBODIES WAS EVALUATED ON ADDL-COATED MSD PLATES.



Analysis of biotinylated and non-biotinylated sAβO-targeting antibodies were shown to have variable immunoreactivity with ADDLs, informing their use in assays using ADDLs as reference standards. Assay formats are depicted schematically (left).
S/N = signal to noise ratio

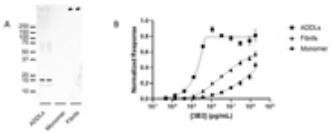
Results (cont.)

THE SPECIFICITY OF A PANEL OF sAβO-TARGETING ANTIBODIES TO ADDLS WAS COMPARED TO COMMERCIALLY-AVAILABLE sAβO REFERENCE STANDARDS.



Additional commercial sAβO reference standards, including stabilized sAβOs from Good Biomarker Sciences BV (GBS; Leiden, NL) (formerly produced by Crossbeta Biosciences) and S26C dimers (JPT Peptide Technologies GmbH), were used to further evaluate sAβO antibody selectivity/specificity. In this assay format (left), 82E1 (IBL; MN, USA) had the greatest ADDL immunoreactivity. Data are mean ± SEM, n=2. S/N = signal to noise ratio

ADDLS CAN BE USED AS A TOOL TO DETERMINE SPECIFICITY AND SELECTIVITY OF ANTIBODIES FOR VARIOUS Aβ FORMS.



A) The antibody 20C2 (aka NU1) is shown via Western immunoblot that it is immunoreactive with SDS-stable ADDLs and fibrils, but not monomers. B) The antibody 3B3 is shown via ELISA to have > 7000-fold selectivity for ADDLs (EC50 = 192 ng/mL, 5PL regression) over monomers (EC50 ≥ 1.4 mg/mL) and > 40-fold selectivity for ADDLs over fibrils (EC50 ≥ 7.3 µg/mL). Data are mean ± SEM, n=4. In both (A-B), sAβOs are modeled by ADDLs and Aβ monomers by Aβ(1-40).