Data in Brief 18 (2018) 1711–1724

Contents lists available at ScienceDirect

Data in Brief

journal homepage: www.elsevier.com/locate/dib

Data Article

Dataset of breath research manuscripts curated using PubMed search strings from 1995–2016

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ARTICLE INFO

Article history:
Received 9 February 2018
Accepted 17 April 2018
Available online 2 May 2018

Keywords:
Exhaled breath
Exhaled breath condensate (EBC)
Exhaled breath aerosol (EBA)
Mass spectrometry
Sensors
Immunochemistry
Public health
Clinical diagnosis

ABSTRACT

The data contained in this article are PubMed search strings and search string builders used to curate breath research manuscripts published from 1995–2016 and the respective number of articles found that satisfied the search requirements for selected categories. Breath sampling represents a non-invasive technique that has gained usefulness for public health, clinical, diagnostic, and environmental exposure assessment applications over the years. This data article includes search strings that were utilized to retrieve publications through the PubMed database for different breath research-related topics that were related to the analysis of exhaled breath, exhaled breath condensate (EBC), and exhaled breath aerosol (EBA) as well as the analysis of cellular headspace. Manuscripts were curated for topics including EBC, EBA, Direct MS, GC–MS, LC-MS, alcohol, and sensors. A summary of the number of papers published per year for the data retrieved using each of the search strings is also included. These data can be utilized to discern trends in the number of breath research publications in each of the different topics over time. A supplementary Appendix A containing the titles, author lists, journal names, publication dates, PMID numbers, and EntrezUID numbers for each of the journal articles curated using the finalized search strings for the seven breath research-related topics can also be found within this article. The selected manuscripts can be used to explore the impact that breath research has had on expanding the scientific knowledge in each of the investigated topics.

DOI of original article: https://doi.org/10.1016/j.aca.2018.01.069
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https://doi.org/10.1016/j.dib.2018.04.063

Specifications Table

Subject area	*Breath research, database searching, public health*
More specific subject area	*Gas-phase exhaled breath, exhaled breath condensate, exhaled breath aerosol, volatile organic compound (VOC) analysis, instrumentation, pulmonary disorders, community assessment*
Type of data	*Tables and Spreadsheets*
How data was acquired	*PubMed database searches*
Data format	*Filtered*
Experimental factors	*The PubMed search strings were built for seven main exhaled breath research topics: exhaled breath aerosol, exhaled breath condensate, Direct MS, GC–MS, LC-MS, alcohol, and sensors. The searches for all topics except alcohol were restricted from 1995/01/01 until 2016/12/31; alcohol was restricted from 01/01/1960 to 12/31/2016. Restrictions were included to eliminate topics related to medical diagnosis that did not include evaluation of exhaled breath.*
Experimental features	*The PubMed search strings were utilized to acquire journal articles related to different breath research topics that include the analysis of exhaled breath, EBC, EBA, or cellular headspace. The number of publications per year for each topic is included as well as an appendix listing the journal article curated for each topic area.*
Data source location	*The data were gathered from PubMed using the PubMed Advanced Search Builder:* https://www.ncbi.nlm.nih.gov/pubmed/advanced.
Data accessibility	*The data is contained within this article and the attached Appendix.*
Related research article	*Wallace, M. A. G. and Pleil, J. D., Evolution of Clinical and Environmental Health Applications of Exhaled Breath Research: Review of Methods and Instrumentation for Gas-phase, Condensate, and Aerosols. Analytica Chimica Acta* ***2018****, Submitted.*

Value of the data

- Researchers can use the acquired lists of breath research publications to gather references for review of the literature.
- Researchers can use the data to evaluate trends in the number and type of breath research manuscripts published from 1995–2016.
- Researches will be able to understand the value of exhaled breath research and the impact it has had on improving public health and the community through medical (clinical, diagnostic) and environmental (exposure, adverse outcome) applications.
- Researchers can use the developed search strings to curate additional breath research publications within the time frame, expand the time frame, or remove restrictions to obtain different lists of publications for assessment and review.

1. Data

The presented data are six tables and a supplementary Appendix file. Table 1 contains the initial PubMed search string builders that were developed for the individual breath-related topics that were used to curate papers. These search string builders include “exhaled breath,” “VOCs and headspace,” “biological media,” “aerosols,” “condensate,” “Direct MS,” “GC–MS,” “LC-MS,” “alcohol,” and “sensors.” Table 2 contains combinations of the individual search strings listed in Table 1. These search strings were developed to ensure that the retrieved publications were focused on the subject of exhaled breath research and volatile compound analysis. Restrictions were introduced to the “exhaled breath” search strings in order to eliminate papers that were found to be out of scope after reviewing the