

The Mab004 data product

Original number of samples	2,434
Number of samples (per 27.11.2023)	2,424
Number of unique participants	2,424
Biological sample type	Plasma
Participant type(s)	MoBa mothers
Collection timepoint	Gestational week ~17
Case-control selection criteria	None
Biomarker type(s)	Vitamin A, D2, D3 and E
Original reference article	Nilsen <i>et al.</i> 2010
Analytical method(s)	LC-MS
Related MoBaBIO product(s)	Mab001, Gtp001
FHI Project number(s)	PDB168

The project that generated these data

Pregnancy, one-carbon metabolism and related single nucleotide polymorphisms (SNPs)

Project lead: Stein Emil Vollset

The purpose of this study was to measure B-vitamins, B-vitamin markers, and related one-carbon metabolites in pregnancy, and study the potential associations and effects of these on adverse prenatal and postnatal health conditions and outcomes.

Study population

The original Mab004 biomarker data source is based on plasma samples from **2,434 mothers** whose babies were born between July 2002 and December 2003. The mothers were selected at random, but inclusion required that mothers had donated a blood sample at the second trimester routine ultrasound appointment, were registered in the Medical Birth Registry of Norway (MBRN) and had completed and returned a baseline questionnaire and a Food Frequency Questionnaire (FFQ) administered during the second trimester.

Available biomarker measures (variable names in bold)

Vitamin A (**Vitamin A**)
Vitamin D2 (**Vitamin D2**)
Vitamin D3 (**Vitamin D3**)
Vitamin E (**Vitamin E**)

Biological sampling and processing

Non-fasting plasma from blood samples were collected from expecting mothers at 17-18 weeks' gestation. These samples were collected into ethylenediaminetetraacetic acid (EDTA) tubes, centrifuged within 30 minutes, and temporarily placed in a refrigerator at 4 °C. They were shipped from the collecting hospital overnight to MoBa's biobank at the Norwegian Institute of Public Health (NIPH). The samples most often arrived at the biobank within 1–2 days of blood donation, where EDTA plasma were aliquoted onto polypropylene microtiter plates (96-well format, 300 µL per well), sealed with the use of heat-sealing foil sheets, and placed in long-term storage at –80 °C.

For more information on biological sampling, processing and storage, please refer to the original reference articles for NIPH's biobank by [Rønningen et al. 2006](#) and [Paltiel et al. 2014](#).

Analytical methodology

The vitamins that are included in the current dataset were measured using a high-throughput method based on **liquid chromatography/tandem mass spectrometry (LC-MS)**. For more details on the assay, refer to the original reference article for this method by [Midttun et al. 2011](#).

Useful summary article for the analytical methods used in this study: [Midttun et al. 2014](#).

Measurement units:

Vitamin A, Vitamin E: **μmol/L**
Vitamin D2, Vitamin D3: **nmol/L**

Limit of quantification (LOQ):

Vitamin A: 0.1 μmol/L
Vitamin D2: 5 nmol/L
Vitamin D3: 3.3 nmol/L
Vitamin E: 2 μmol/L

For more information on key data related to analytical platforms used by Bevital, visit <https://bevital.no/key-data/>

Published articles using Mab004

This section also includes articles related to study design, sampling, and data collection.

None currently known.

Restrictions for use

None currently known.

Acknowledgements recommended for use

We recommend that any use of these data in analyses that are presented in peer-review publications acknowledges the original articles describing sampling and data collection:

Nilsen RM, Vollset SE, Monsen AL, Ulvik A, Haugen M, Meltzer HM, Magnus P, Ueland PM. Infant birth size is not associated with maternal intake and status of folate during the second trimester in Norwegian pregnant women. *J Nutr.* 2010 Mar;140(3):572-9.

Disclaimer

The data in Mab004 that are available for use are provided by MoBa on an *as is* basis as they were received from the generating laboratory and have not been curated or quality controlled prior to release. FHI does not provide any guarantees related to data quality and assurance of the original dataset. We reserve the right to periodically remove samples from the dataset belonging to participants who have retracted their consent to participate in this cohort study, and may alter the contents of the associated documentation accordingly.