**NEST Study**

Metabolomic Analysis: NIH Eastern Regional Comprehensive Metabolomics Resource Core (RTI RCMRC)

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**Abstract:**

The overall goals of the Newborn Epigenetic STudy (NEST) research study are to identify epigenetic features in the genome that affect gene regulation and that can be altered by endogenous and exogenous influences. We hypothesize that such differences in the global epigenetic profile may be due to differences in race, maternal behaviors (e.g., nutritional status, cigarette smoking, etc.) before and throughout pregnancy, or result from conception via assisted reproductive technologies. This metabolomics pilot study evaluated cord blood plasma from these children to understand how these factors influence the metabotype.

**Sample Description:**

Plasma samples were collected from 113 children living in homes in communities in Durham County. Aliquots of each de-identified plasma sample was shipped the NIH RTI-RCMRC on dry ice and immediately stored at -80 °C after being logged in for metabolomics analysis.

The data obtained for the NMR metabolomics analysis can be found in the accompanying files:

Procedures: 1. Hoyo NEST NMR Procedures.docx

Study Design Tables: 2. Hoyo NEST NMR Study Design Table.xls

Metadata: 3. Hoyo NEST METADATA.xlsm

Processed Data: 4. Hoyo NEST NMR Normalized Binned Data.xlsx

Raw Data: 5. Hoyo NEST NMR Raw Data.zip

**Notes:**

Full sample preparation and analysis procedures are available in the accompanying document entitled **1. Hoyo NEST NMR Procedures**.

Descriptions of abbreviations for factors are available in the Variable Dictionary in the accompanying file no. **2. Hoyo NEST NMR Study Design Table.xls**.

The phenotypic and normalized data are available in the accompanying files: **4. Hoyo NEST NMR Normalized Binned Data.xlsx** for normalized binned NMR data. Sample ID and factors can be found in the first 7 columns and other columns in the spreadsheet contain sample metadata and the normalized binned data. If the statistical program does not allow variable names to begin with a number then add a prefix to the column names, for example, bin\_8.98 instead of 8.98.

The Sample ID serves as the unique identifier (Graphical ID) of the individual samples and is used as the NMR folder name in the raw NMR data file **5. Hoyo NEST NMR Raw Data.zip**.