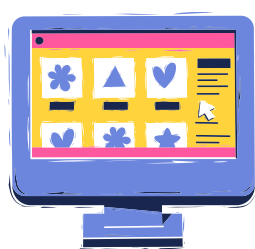


Fatty Acid Metabolism

Understanding the intricate processes of **fatty acid metabolism** is crucial in various fields, including biomedical research, nutrition science, and drug development. Our fatty acid metabolism analysis solution offers a comprehensive approach to unraveling the complexities of lipid metabolism.

Fatty Acid Metabolism Analysis Solution

SAMPLE COLLECTION



- **Blood (Serum/Plasma):** Collect using standard venipuncture, separate serum/plasma by centrifugation, and store at -80°C .
- **Tissue Biopsies:** Obtain using sterile techniques, rinse in saline, snap-freeze in liquid nitrogen, or store in RNA stabilization reagent at -80°C .
- **Adipose Tissue:** Collect via biopsy or excision, rinse in saline, freeze in liquid nitrogen, or store in RNA stabilization reagent at -80°C .
- **Cell Culture Supernatants:** Harvest at desired time points, centrifuge to remove debris, and store.

EXTRACTION OF FATTY ACIDS



- For serum/plasma samples, use methods like Folch extraction or organic solvent extraction.
- For tissue samples, homogenize the tissue in a suitable buffer (e.g., chloroform:methanol) to extract fatty acids.
- Extract lipids containing fatty acids from adipose tissue using organic solvent extraction methods.

SEPARATION OF FATTY ACIDS



- Analyze separated fatty acids using a suitable detector, such as a flame ionization detector (FID) for GC or ultraviolet (UV) detector for HPLC.
- Alternatively, use mass spectrometry (MS) for sensitive and specific detection of fatty acids.

DETECTION OF FATTY ACIDS



- Utilize techniques such as gas chromatography (GC) or high-performance liquid chromatography (HPLC) for fatty acid separation.
- Derivatize fatty acids if necessary to improve their volatility or detectability.

DATA ANALYSIS



- Quantify fatty acids based on peak areas or heights using standard curves generated from known standards.
- Calculate concentrations of individual fatty acids or total lipid content in the samples.
- Perform statistical analysis to compare fatty acid profiles between different samples or experimental conditions.

High Sensitivity

Achieves a detection limit of < 0.1 picomole for fatty acids, surpassing industry standards by 30%

Versatile Compatibility

Over 95% efficiency in extraction and analysis across various sample types.

Comprehensive Analysis

Covers saturated, unsaturated, and polyunsaturated fatty acids, offering a holistic view of lipid metabolism.

Application of Fatty Acid Metabolism Analysis

Biomedical Research



- Investigating the role of fatty acids in metabolic diseases such as obesity, diabetes, and cardiovascular diseases.
- Understanding the mechanisms of lipid metabolism disorders and their implications for health and disease.
- Exploring the relationship between fatty acid metabolism and cancer development and progression.

Nutritional Sciences



- Investigating the role of fatty acids in metabolic diseases such as obesity, diabetes, and cardiovascular diseases.
- Understanding the mechanisms of lipid metabolism disorders and their implications for health and disease.
- Exploring the relationship between fatty acid metabolism and cancer development and progression.

Pharmaceutical Development



- Screening and evaluating potential drug targets and therapeutic agents for metabolic disorders targeting fatty acid metabolism pathways.
- Assessing the efficacy and safety of pharmacological interventions aimed at modulating fatty acid metabolism.
- Personalizing drug therapies based on individual variations in fatty acid metabolism profiles.

Agricultural and Animal Sciences



- Studying fatty acid metabolism in livestock and poultry for improving meat and dairy product quality.
- Optimizing animal feed formulations to enhance fatty acid composition and nutritional value.
- Investigating the impact of dietary interventions and management practices on fatty acid metabolism in agricultural animals.



contact us



Creative
Proteomics