

AS n=3
HC n=3

Vertebral bone marrow blood

BMBCs

scRNA-seq

Sequencing

Data visualization

n=3

n=3

miRNA

cirRNA

Detection and analysis

STAT4

miRcode

miRNA array

cirRNA array

circbank

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The figure illustrates a multi-omics research pipeline for studying Ankylosing Spondylitis (AS). The pipeline is divided into two main sections: Bone Marrow Biopsy and Disc Extraction, both involving AS patients (n=3) and Healthy Controls (HC, n=3).

Bone Marrow Biopsy Section:

- AS n=3, HC n=3:** Bone marrow is aspirated from the vertebrae.
- Vertebral bone marrow blood:** The aspirated sample is collected in a test tube.
- BMBCs:** Bone Marrow-Blood Cells are isolated.
- scRNA-seq:** Single-cell RNA sequencing is performed using a 10x Genomics platform.
- Data visualization:** The resulting data is visualized using t-SNE plots, showing distinct clusters of cells.

Disc Extraction Section:

- n=3:** Intervertebral discs are extracted from AS patients and healthy controls.
- miRNA and circRNA:** MicroRNA (miRNA) and circular RNA (circRNA) are isolated from the discs.
- Detection and analysis:** The isolated miRNA and circRNA are analyzed using a microarray.
- miRcode and circbank:** The identified miRNAs and circRNAs are analyzed using miRcode and circbank databases.
- STAT4:** The analysis identifies a network of miRNAs and circRNAs associated with STAT4.
- Network Diagram:** A network diagram shows the interactions between various miRNAs and circRNAs, with a central node labeled STAT4.

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