History of Organoid Research:

Sponges have a unique, sponge-like structure that could self-organize. In 1907, Henry Van Peters Wilson discovered that siliceous sponge cells, which were previously degenerated, could self-organize. These discoveries were significant milestones in the development of organoids.

Advances in Organoid Research:

Before Stem Cell:

Self-organization and the aggregation of cells or a mixture of both types shift from 2D to 3D. This allows for generating more complex and life-like organoids than ever. Inevitably, imaging and molecular techniques are essential to understand and manipulate these self-organized structures.

After Stem Cell:

Modern organoid research quickly accelerated organoid research. They offer more monitoring immune response than patient biopsies, and offer more insights for disease modeling. The isolation of stem cells and disease models is a key milestone in organoids.

Pre-organoid Era:

In 2002, adult intestinal cells (ASCs) could self-organize to form intestinal cell types. In 2006, the isolation of stem cells was demonstrated for the first time that intestinal adult stem cells (ASCs) could self-organize.

Modern Organoid:

In 2013; The first study to generate 3D cerebral organoids containing different brain tissues. In 2002, researchers could generate 3D cerebral organoids containing different brain tissues. In 2008, Sasai et al. laid the foundations of brain organoids by demonstrating self-organization of neural cortical tissue cells that formed polarized functional neurons.

Modern Organoid Research:

Researchers could use iPSCs from mouse or human brain and kidneys to generate 3D cerebral organoids. The isolation of stem cells from mouse or human brain and kidneys is a key milestone in organoids.

Organoid Image Gallery:

The interactions were investigated in the development of extracellular matrix. The importance of extracellular matrix in organoids is essential for understanding their development.

After Stem Cell:

Modern Organoid Research

Today’s organoid technology is the product of decades of research. In fact, the foundations of the concept go back to the beginning of the 20th century. Interestingly, the idea of organoids is not new. Today’s organoid technology is the product of decades of research. In fact, the foundations of the concept go back to the beginning of the 20th century. Interestingly, the idea of organoids is not new.