

Joe-Hin Tijo Biography

Joe-Hin Tijo

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Biography

Joe-Hin Tijo was born on February 11, 1919 in Java, once a part of the Dutch East Indies. In college Tijo studied a branch of agriculture called agronomy that deals with field-crop production and soil management. He became interested in breeding potatoes and attempted to produce hybrids resistant to disease. However, during World War II, Tijo was taken prisoner and held in a concentration camp by the Japanese Imperial Army until the war ended. After release from the concentration camp, Tijo was taken to Holland and granted a fellowship by the government to study plant breeding in Copenhagen. Shortly after, Tijo began research on cytogenetics with Albert Levan, head of the Institute of Genetics at the University of Lund in Sweden. From 1948 to 1959, Tijo worked in Zaragoza, Spain as director of cytogenetics on a plant improvement program but continued research at the University of Lund during holidays and summers.

In 1956, Joe-Hin Tijo and Albert Levan were working with human embryonic tissue when they discovered that there was 46 chromosomes, not 48, which scientists had believed to be the case for over 30 years. Previously, scientists were unable to distinguish the correct number of chromosomes because techniques for preparing microscope slides had not yet been perfected. However, Tijo and Levan's methods for separating chromosomes on microscope slides proved successful when they were able to count 46 chromosomes per **cell** during observations of 261 embryonic cells.

Tijo traveled to the United States in 1957 to pursue his PhD at the University of Colorado. After earning his doctorate, Tijo was invited to join the National Institutes of Health (NIH) and began working for the National Institute of Arthritis and Metabolic Diseases' Laboratory of Experimental Pathology. He continued studying chromosomes with special emphasis on leukemia and mental retardation. In 1962, Tijo and Whang discovered **chromosome** abnormalities in leukemias after producing a method for aspirating bone marrow cells and obtaining a view of the cell's chromosomes during the metaphase stage of **mitosis** called a metaphase spread. Tijo retired from NIH in 1992 at the age of 73.