

# BIONE

## E-ZINE OF BIOLOGICAL SCIENCES

ISSN: 2456-7264 | Issue – 20 | Published On 08/02/2022

### **She could not complete a formal PhD but got multiple honorary PhDs**

In this issue, I am going to highlight the struggle and success of an American Biochemist, a Nobel Laureate, Gertrude Belle Elion. She could not complete a formal PhD but was conferred with multiple honorary PhDs in her later life due to extraordinary research achievements. Dr. Elion was awarded with the Nobel Prize in the year 1988 in Physiology and Medicine for her work on principles of drug treatment. Her entire journey from being an Analytical Assistant in a supermarket to become a Nobel laureate is very inspiring.

Gertrude Belle Elion was born on 23<sup>rd</sup> January, 1918 in the New York City. Her father Robert Elion was a dentist by profession. He had a keen interest in the stock market and was an adventurous investor. The fortune of the otherwise well-off family took a U-turn because of great economic crash of 1929 (Wall Street Crash of 1929). This economic crash was a big financial blow to the Elion family who lost all the investments and had to face many hardships thereafter. Gertrude Belle Elion was a very good student in school. She graduated from Walton High School at the age of 15; this was the time when she lost her grandfather to stomach cancer. This tragedy at a young age provoked young Elion to study science and medicine in college. She graduated in the year 1937 with a degree in chemistry. Subsequently, Gertrude Belle Elion got her MSc from New York University in the year 1941. She wanted to enroll for PhD and accordingly applied in many universities for funded PhD positions. Unfortunately, she didn't manage to find any such position and couldn't immediately start PhD as she was unable to support it on her own. So, she decided to join a position of food quality analyst in a Supermarket and later shifted to Johnson and Johnson company. Thereafter, Ms. Elion moved to a pharmaceutical company called Burroughs-Wellcome (now GlaxoSmithKline) in Tuckahoe, New York as a Scientific Assistant. She was working with George H. Hitchings, whose group was working on development of nucleotide analogue as an antagonist of biological pathways. Ms. Elion became a very important member of the group and could synthesize the purine antagonist tioguanine and mercaptopurine in 1950 which are used as anticancer drugs. Meanwhile she also started a part-time PhD in New York University but in the middle of the PhD, she was informed by the university that she cannot continue as a part time student. She was given the option to join as a full time PhD student by quitting the job. She contemplated

and decided to quit the PhD instead because of her financial situation at that time. She never obtained a formal PhD in her life but because of groundbreaking discovery of the new principle of drug treatment, she was awarded with Nobel in 1988 and this was followed by multiple honorary PhDs awarded by different universities including Harvard. She became a research scientist in the same company and retired in the year 1983. Dr. Elion continued to involve in active research even after her retirement and died in 1999 at the age of 81.