

Dr. Miklós Müller

Dr. Miklós Müller was born in 1931. He received his medical diploma from the Semmelweis University Budapest in 1955 and continued on the Medical Faculty as an instructor and later as an assistant professor, where he studied food vacuoles in protozoa. In 1964 he joined Rockefeller University as a research associate in the cell biology laboratory of Nobel-prize winner **Christian de Duve**, and later became a tenured associate professor and Head of Laboratory of Biochemical Parasitology. Their common work led to the discovery of **peroxisomes** in the unicellular eukaryote, *Tetrahymena*. Dr. Müller was promoted to full professor in 1999 at the age of 68 and he is now *professor emeritus* at the Rockefeller University. In 2001, he was elected an external member of the Hungarian Academy of Sciences. In 2002, he received an honorary degree from the Paris Descartes University. In 2006, he was the sixth recipient of the Eduard Reichenow Medal from the German Society for Protozoology, awarded for his life's work in the comparative analysis of energy metabolism, its evolution and its organellar localization in parasitic anaerobic protists. In 2007, he received the Knight's Cross of the Order of Merit of the Republic of Hungary for his scientific work and support of art in Hungary.

Until the closing of his laboratory in 2005, Dr. Müller's research concerned several important human parasites: *Trichomonas vaginalis*, *Giardia intestinalis* and *Entamoeba histolytica*. These organisms lack typical mitochondria — they are “amitochondriate” — and have an unusual anaerobic fermentative metabolism. The Müller lab's research focused on the molecular and biochemical exploration of this metabolism with the goal of understanding its adaptive significance and evolutionary history. In the course of these studies, Dr. Müller and his co-workers identified a novel cell organelle in trichomonad flagellates, the **hydrogenosome**. This organelle produces hydrogen as a metabolic end product. Similar organelles have been found subsequently in several other anaerobic unicellular organisms, while others contain a smaller structure — the mitosome — that lacks a role in metabolism. Typical mitochondria, hydrogenosomes and mitosomes are currently regarded as closely related cell organelles, which derive from the ancestral protomitochondrion by divergent evolution.

Leaving experimental work behind, Dr. Müller continues the comprehensive analysis of the metabolic organization and evolutionary history of these divergent types of mitochondrion-related organelles. This analysis has led to novel insights into the origin of the ancestral eukaryotic cell and its diversification.

Dr. Müller also turned his interest in recent years to the history of twentieth-century biology. His current work, conducted in archives and libraries in different countries, concerns two topics: the life and works of Hungarian theoretical biologist Ervin Bauer (1890 to 1938), who successively worked in Hungary, Czechoslovakia, Germany and the Soviet Union; and the impact of Soviet pseudoscientific distortions of biology (Trofim Lysenko and Olga Lepeshinskaya) on the subject in Eastern Europe in the 1940s and 1950s.