



Lee M. Ellis, M.D.

Dr. Lee Ellis has focused on the development of cell line models of carcinoid and other neuroendocrine tumors. Cell lines are clonal populations of cells that can be cultured and grown in the laboratory. Tumor cell lines have proven to be invaluable tools in studying many cancers and in identifying genes that drive tumor growth. Tumor cell lines have also served as critical model systems for the testing and development of potential drug candidates for tumor treatment.

However, to date, very few carcinoid and neuroendocrine cell lines have been developed and are available for widespread use. While two well-characterized foregut carcinoid cell lines exist, there were previously no widely available midgut carcinoid cell lines.

Dr. Ellis and colleagues have recently reported the development of a human midgut carcinoid cell line derived from a liver metastasis of a carcinoid originating in the terminal ileum of a patient. This cell line has been painstakingly characterized to ensure that it appropriately represents the properties of carcinoid tumors. Microscopically, this midgut carcinoid cell line, called CNDT2, exhibits the characteristic appearance of carcinoid tumor cells. CNDT2 cells express many genes and markers associated with midgut carcinoid tumors. Moreover, CNDT2 cells produce serotonin, a hallmark of midgut carcinoid tumors and the hormone most responsible for causing carcinoid syndrome.

CNDT2 cells can be grown in culture, as well as in soft agar (a property unique to tumor cells). CNDT2 cells can also form tumors when injected into immunocompromised mice, suggesting that this cell line can be used to create a mouse model of carcinoid. Dr. Ellis also has several other human neuroendocrine tumor cell lines under development. These cell lines could represent critical tools to study carcinoid and neuroendocrine tumors and may provide a valuable model for the testing and development of potential drugs to treat these cancers.

Recent Publications:

Van Buren G, Rashid A, Yang AD, Abdalla EK, Gray MJ, Liu W, Somcio R, Fan F, Camp ER, Yao JC, Ellis LM. The development and characterization of a human midgut carcinoid cell line. *Clin Cancer Res.* 2007 13(16): 4704-4712.