



مختبر فرايبورج الطبي الشرق الأوسط (ذ.م.م.)
FREIBURG MEDICAL LABORATORY MIDDLE EAST (L.L.C.)

Telomere Length Assessment – October 2014 Telomere Analysis Technology

FML is now working together with Life Length® in Madrid, Spain, the world leader in telomere diagnostics. They are the only company able to measure the percentage of short telomeres in individual cells. Telomeres are protective structures on the tips of chromosomes that shorten as people age (Nobel Prize 2009 for the discovery of "how chromosomes are protected by telomeres and the enzyme telomerase"). Telomeres are known to respond well to a healthy lifestyle (healthy diet, regular exercise, free from constant heavy stress). Various studies have shown that shorter telomeres are closely related with the onset of cardiovascular and age-related diseases. It is possible to slow down or stabilize/reverse the process of telomere shortening by making changes to one's current lifestyle.

Telomeres are considered the best predictors of a person's biological age. They are molecular markers for aging—the more short telomeres you have, the biologically "older" you are. The percentage of short telomeres is the relevant indicator of cellular aging, rather than the mean telomere length of all telomeres in a cell. Q-FISH is the most precise method to measure telomeres. Testing requires a simple blood test—no fasting or special preparations necessary. The results are ready within a few weeks.

Since the telomeres in your blood cells are extremely sensitive to storage and transport conditions, we process your blood within hours and prepare the cells in a way that they can be shipped on dry ice with our special shipment to Madrid.

Indication:	assess biological age, assess state of health of patient
Pre-analytics:	sample must be processed within 24 hours, keep at 2-8° C, patient should not be sick
Material:	4 tubes LH-blood
TAT:	4 weeks
Method:	Q-FISH (quantitative fluorescent in situ hybridization)
References:	"The 2009 Nobel Prize in Physiology or Medicine - Press Release". Nobelprize.org. 2009-10-05. Blasco MA (2005). "Telomeres and human disease: ageing, cancer and beyond". <i>Nat Rev Genet</i> 6(8):611-22. Cawthon, RM (2002). "Telomere measurement by quantitative PCR". <i>Nucleic Acids Research</i> 30 (10): e47. Armanios, M; Blackburn, EH (2012). "The telomere syndromes". <i>Nat Rev Genet</i> 13 (10): 693–704. Hemann MT, Strong MA, Hao LY, Greider CW. "The shortest telomere, not average telomere length, is critical for cell viability and chromosome stability". <i>Cell</i> . 2001 Oct 5;107(1):67-77.