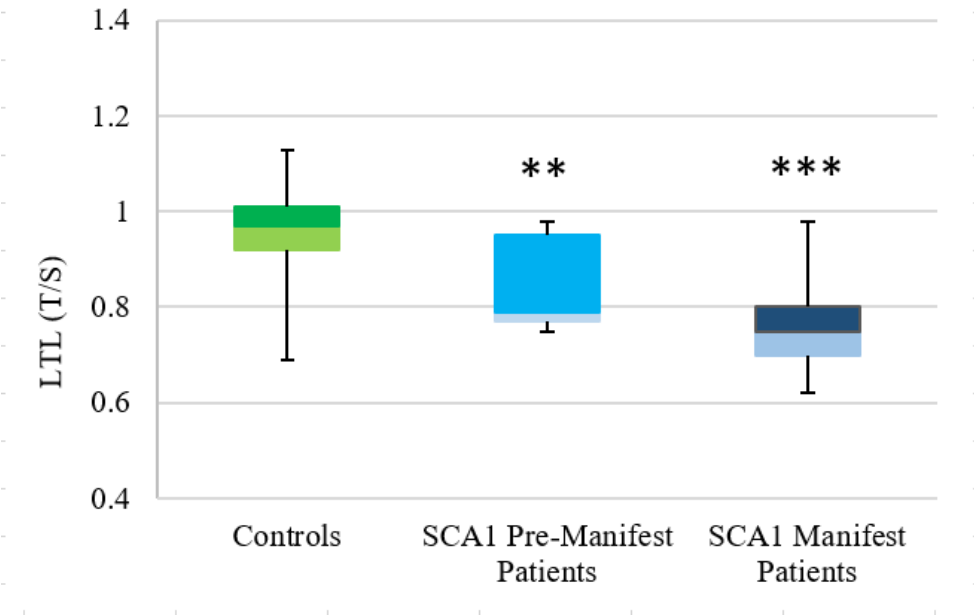


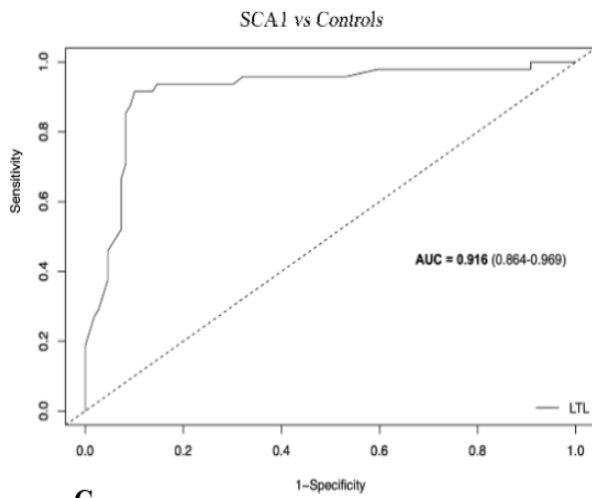
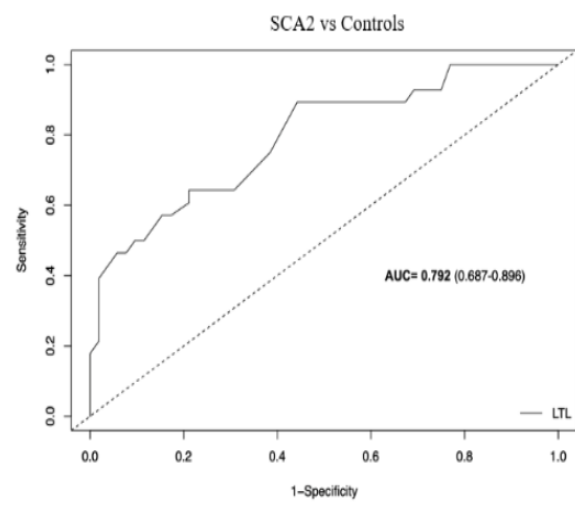
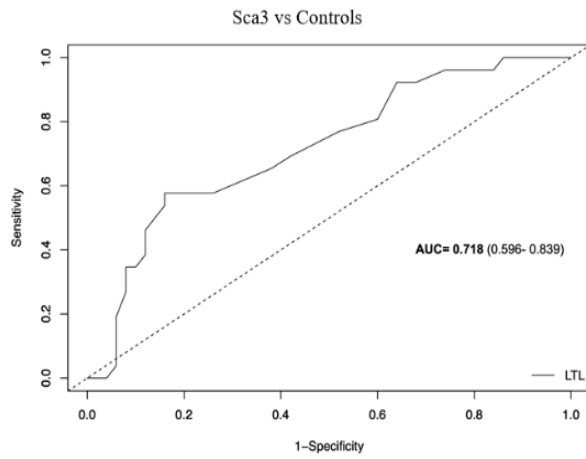
Supplementary Figures:



Supplementary Figure S1. Distribution of LTL in controls, SCA1 pre-manifest and manifest subjects. Box Plot showing the distribution of LTL (T/S ratio) in controls (median:0.97, Q1:0.92, Q3:1.01), SCA1 pre-manifest patients (median 0.79, Q1:0.77, Q3:0.95) and manifest patients (median:0.75, Q1:0.70, Q3:0.80). (**p<0.01; ***p<0.001)

	SCA1	SCA2	SCA3	HD
CONTROLS	p<0.001	p<0.001	p= 0.003	p<0.0001
SCA1		p<0.001	p=0.002	p<0.001
SCA2			p<0.001	p<0.0001
SCA3				p<0.001

Supplementary Table S1 Statistical analysis of each cohort of patients (SCA1,2, 3 and HD vs controls and vs each other. The analysis was carried out using Kruskal-Wallis method, adjusted by Bonferroni error correction.

A**B****C**

Supplementary Figure S2: Assessment of LTL as a biomarker of SCAs. ROC curves for discrimination between patients and controls: (A) SCA1, (B) SCA2, (C) SCA3