

## Captions:

**Supplemental Table 1:** The ELISA assay was performed in triplicate with varying antigen concentrations as shown. A set of 36 sera consisting of 12 healthy, 12 benign gynecological disease, and 12 high-grade serous ovarian cancer was run on three separate ELISA experiments, as well as twice on western blot. Sensitivity is calculated relative to healthy and benign samples at 90% specificity. With these six markers, a total of 10/12 samples were positive using at least one assay. Samples positive for each assay are shaded in gray per antigen.

**Supplemental Figure 1:** A serum set of 34 HGSOC samples, 9 benign samples, and 11 healthy samples were processed on Euroimmun and Ravo Diagnostika line blots, with 20 antigens total.

A: Image of Euroimmun myositis line blot and Ravo Diagnostika paraneoplastic antigen line blot with anti-HARS and anti-TRIM positive control serum and anti-CDR2 positive control serum, respectively.

B: Heat map of reactivity of line blots with HGSOC serum, as scored from 0-4.

C: Heat map of reactivity of line blots with benign serum, as scored from 0-4.

D: Heat map of reactivity of line blots with healthy serum, as scored from 0-4.

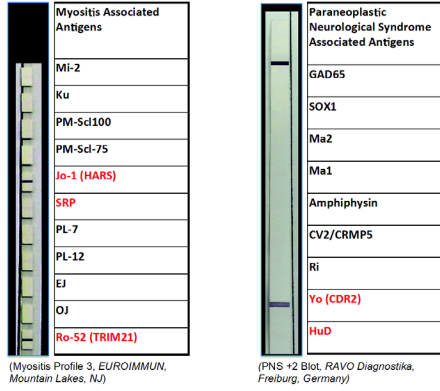
**Supplemental Figure 2:** Late-Stage HGSOC sample positive for TRIM21 (800:700 standardized ratio  $> 2$ ) on western blot, which was not detected by ELISA (Standardized background-corrected intensity  $< 2$ ). A) Secondary antibody anti-HIS tag IgG loading control. B) Secondary antibody anti-human IgG.

**Supplemental Table 1: Results from preliminary screening of purified recombinant proteins on western blot and ELISA.**

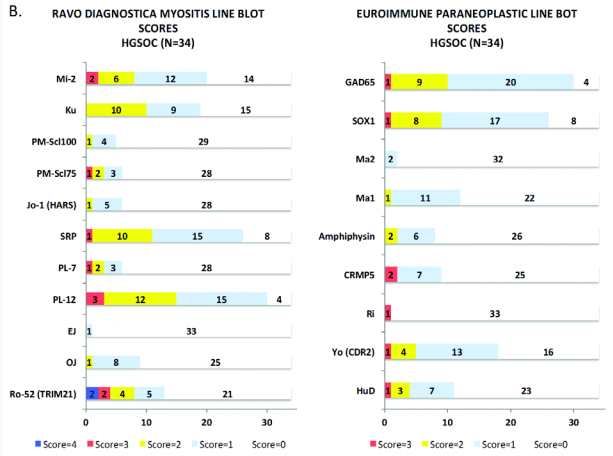
Antigen	HARS					TRIM21					CDR2					P3F10				TP53			NY-ESO-1	
	Assay, n=36, Western Blot: W1, W2 ELISA: E1, E2, E3																							
	W1	W2	E1	E2	E3	W1	W2	E1	E2	E3	W1	W2	E1	E2	E3	W2	E1	E2	E3	W2	E2	E3	E3	
Antigen Concentration	1ug	1ug	0.3ug	1ug	3ug	0.6ug	1ug	0.3ug	1ug	0.75ug	1ug	1ug	0.3ug	1ug	1.5ug	1ug	0.3ug	1ug	2ug	1ug	0.3ug	1ug	1ug	
Patient ID																								
HGSOC Samples																								
O1																								
O2																								
O3																								
O4																								
O5																								
O6																								
O7																								
O8																								
O9																								
O10																								
O11																								
O12																								
HGSOC (+), n=12	2	2	2	2	1	3	3	2	2	1	2	2	0	0	0	2	2	2	2	4	4	4	1	
Sensitivity	0.17	0.17	0.17	0.17	0.08	0.25	0.25	0.17	0.17	0.08	0.17	0.17	0.00	0.00	0.00	0.17	0.17	0.17	0.17	0.33	0.33	0.33	0.08	
Total Positive Samples:	O2, O10					O9, O10, O11					O6, O7					O1, O5				O3, O4, O5, O11			O7	
Total Sensitivity:	2/12 (17%)					3/12 (25%)					2/12 (17%)					2/12 (17%)				4/12 (33%)			1/12 (8%)	
	10/12 (83%)																							

# Supplemental Figure 1: 20 paraneoplastic antigens analyzed on commercial line blots with HGSOC sera.

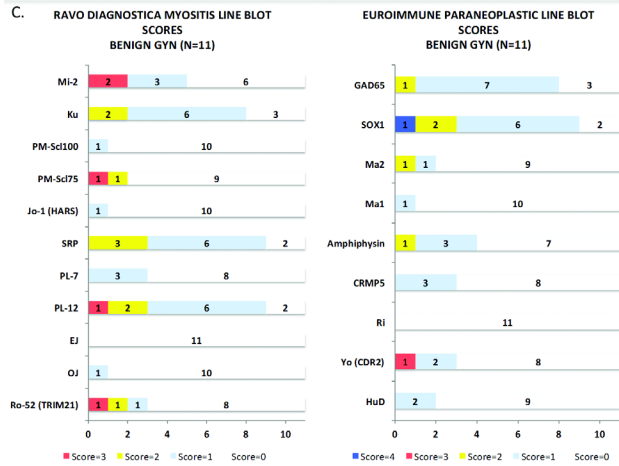
A.



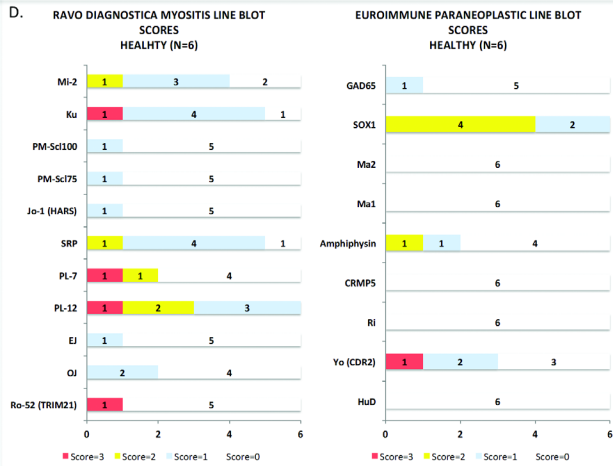
B.



C.



D.



**Supplemental Figure 2. Western blot of late-Stage HGSOC sample positive for TRIM21, Validation I.**

Validation I: Western Blot

Late Stage HGSOC Sample

