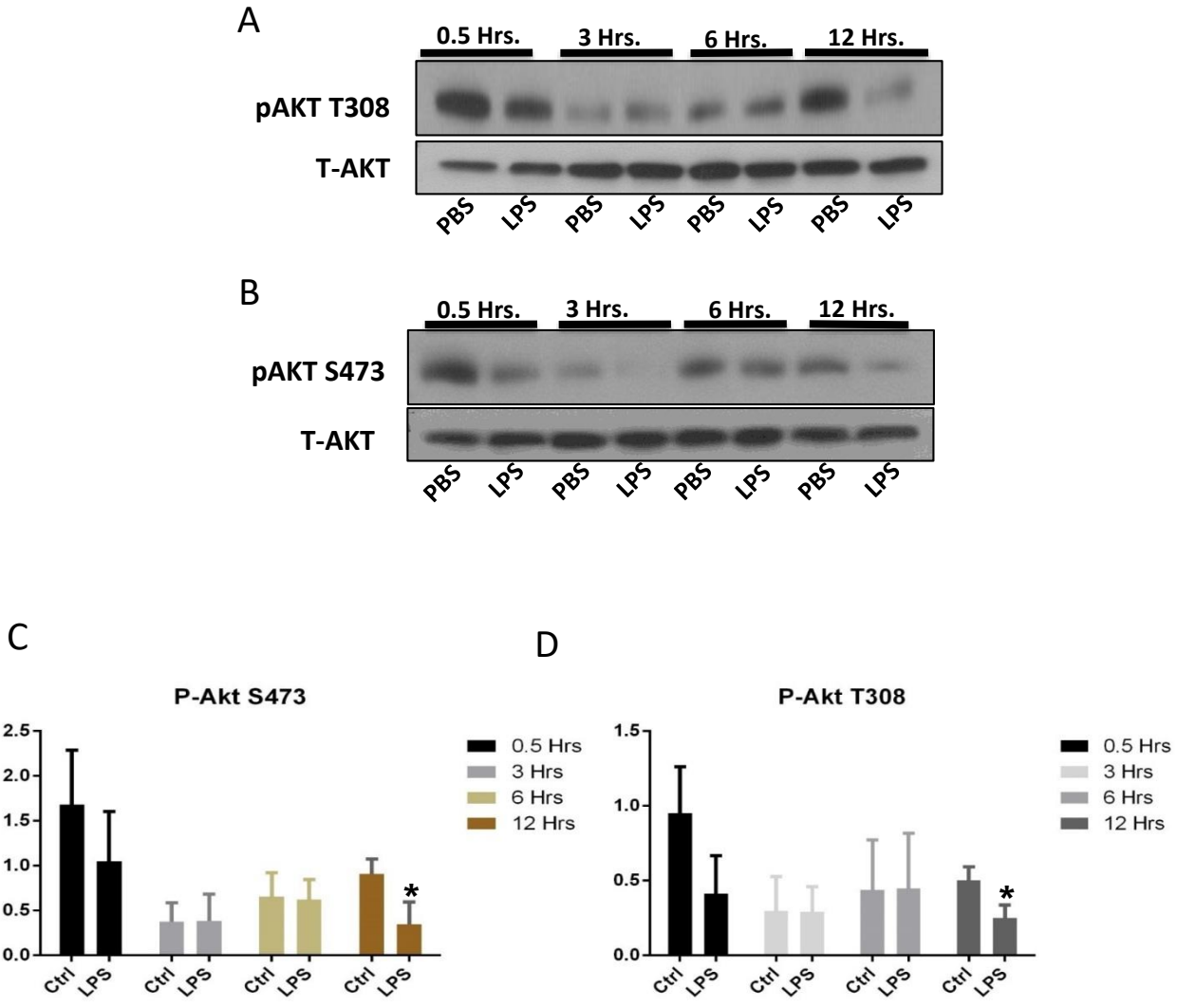


Figure S1: (A-B) Western blot representatives and **(C-D)** quantification data showing phosphorylation changes with LPS 100ng/ml or PBS treatment on HPAECs at various time points. LPS treatment was compared to PBS control at each time point. LPS treatment significantly inhibited Akt phosphorylation only at 12 hrs. although there is trend in decrease as early as 30 mins. * ($p<0.05$); # ($p<0.01$).

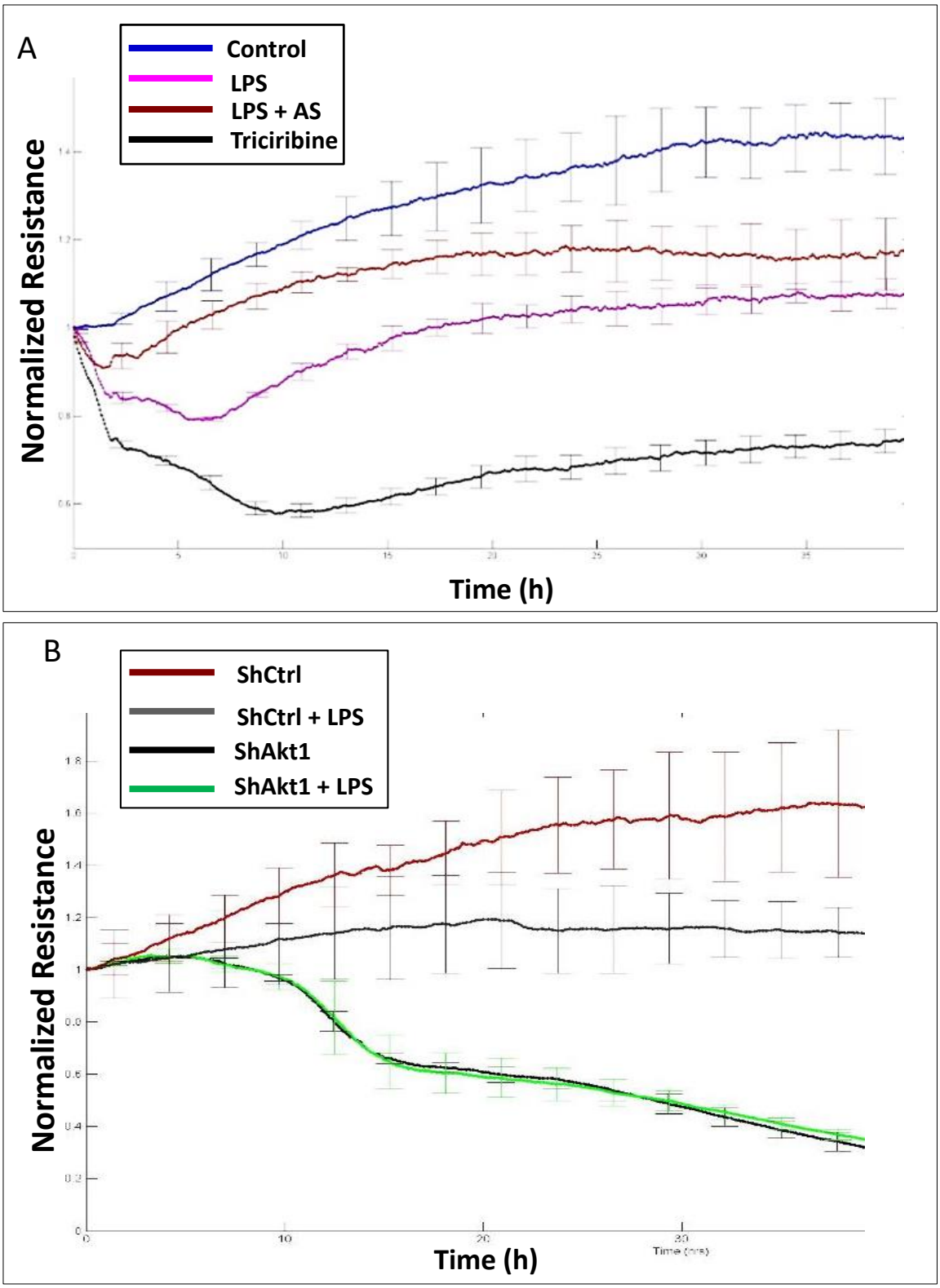


Figure S2: (A) Graph showing the real-time changes in resistance by the HPAEC monolayers upon treatment with LPS, triciribine, and LPS in combination with FoxO inhibitor AS1842856 (10 μM; pretreated) compared to DMSO control as recorded using the ECIS assay (n=3). **(B)** Graph showing the real-time changes in resistance by the ShControl and ShAkt1 HMEC monolayers in the presence and absence of LPS treatment compared to PBS control as recorded using the ECIS assay (n=4).

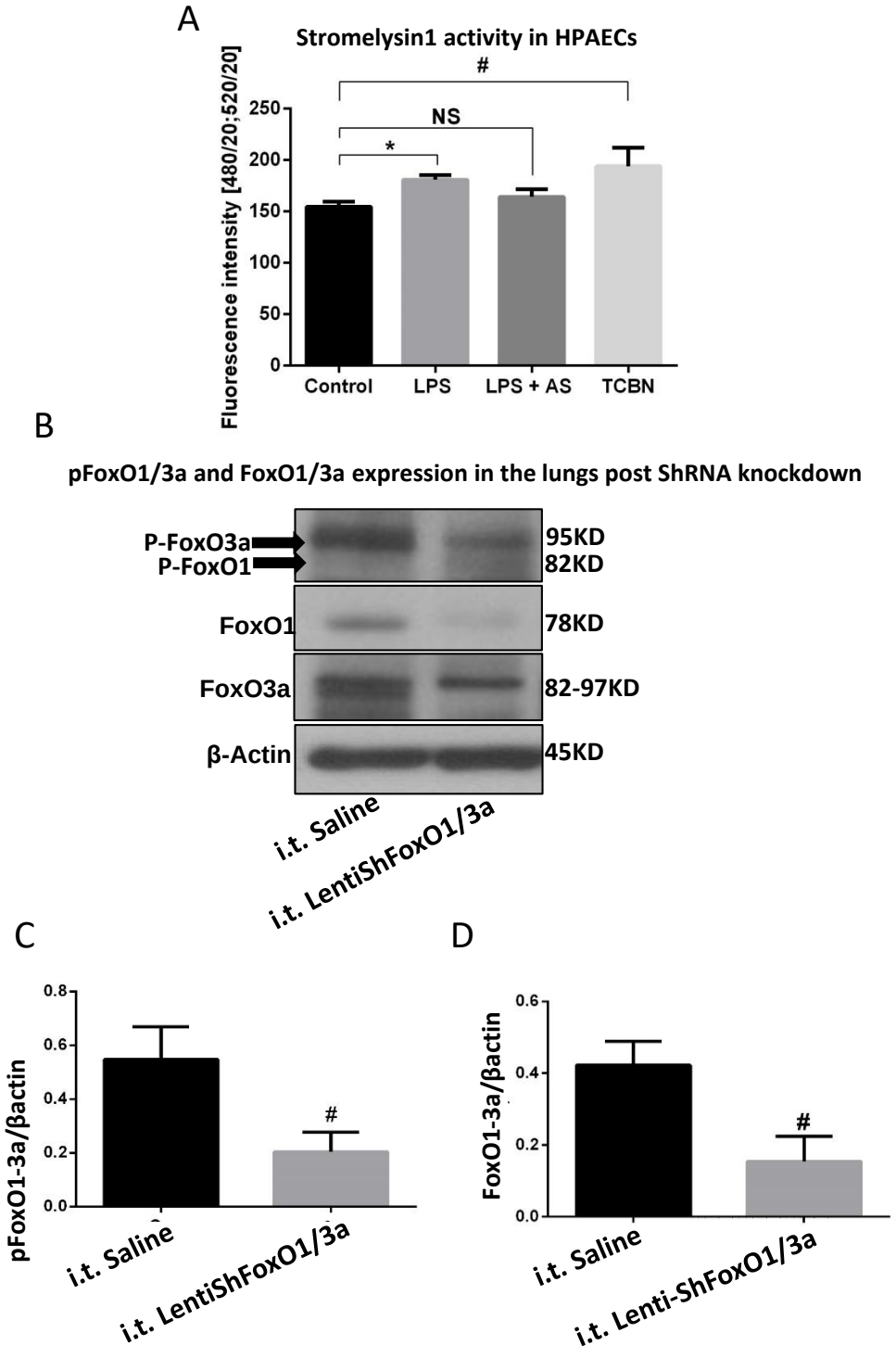
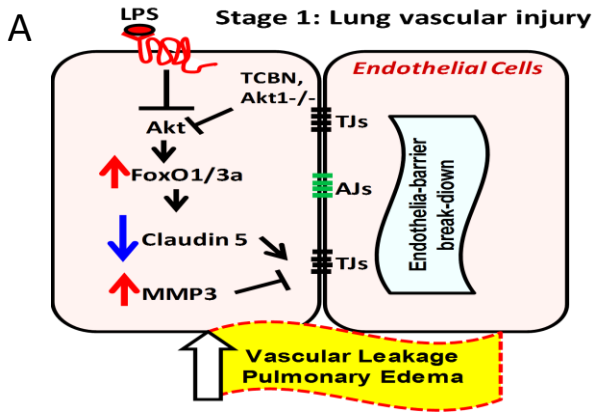


Figure S3: (A) stromelysin-1 activity assay on HPAECs treated with triciribine (TCBN), LPS and LPS with AS1842856. **(B-D)** Western blot and quantification data showing mice lung P-FoxO1/3a and total FoxO1/3a expression changes with LentiShFoxO1/3a. Greater than 60% reduction in lung FoxO1/3a activity was achieved with lentivirus particles (107 particles) (n=6). * ($p<0.05$); # ($p<0.01$).

A



B

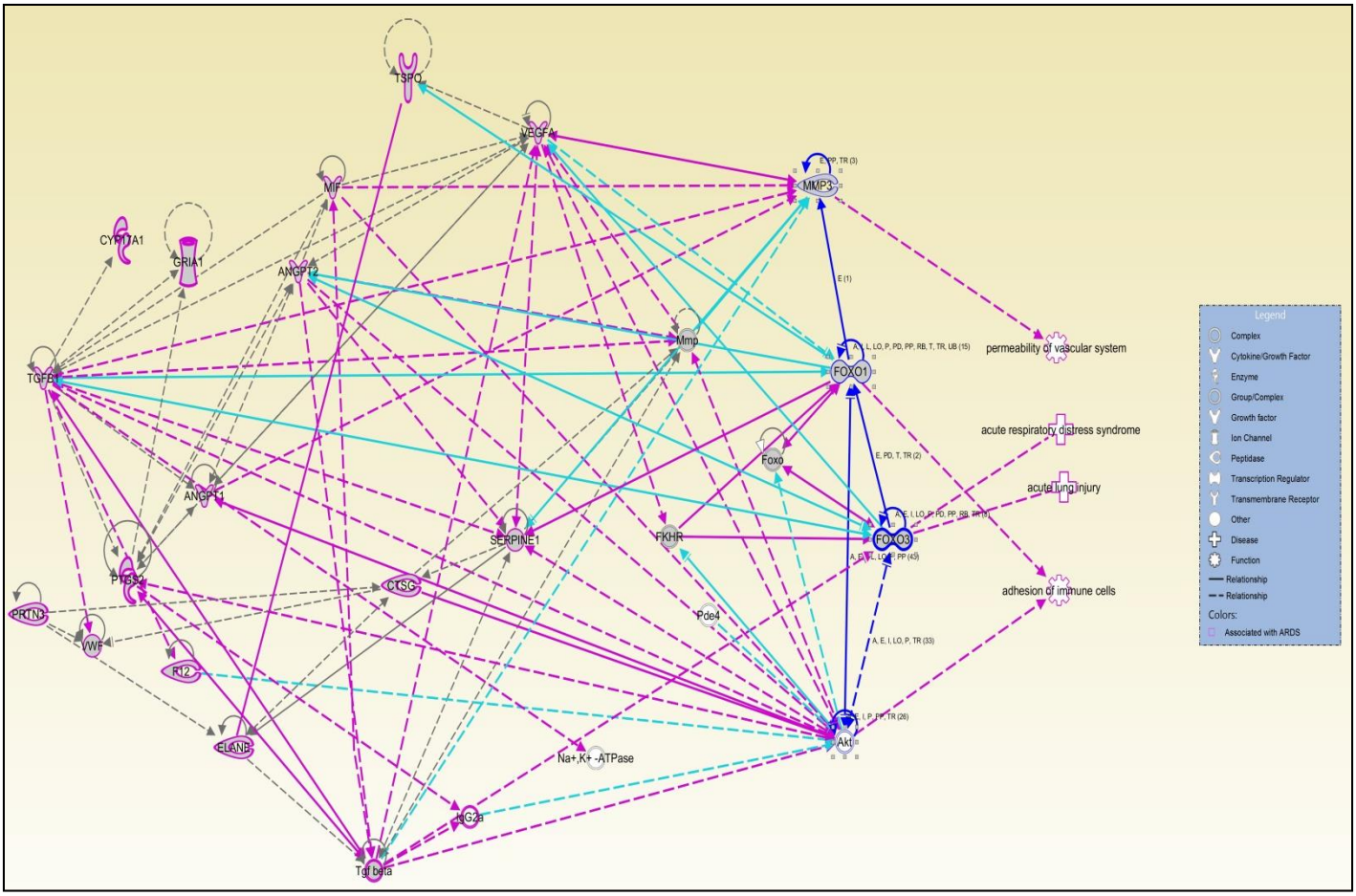


Figure S4 (A-B): (A): cartoon showing the working hypothesis that suppression of Akt1 activity by LPS in pulmonary endothelial cells results in increased FoxO1/3a activation, in turn, leading to increased stromelysin1 expression/activity and reduced expression of tight junction proteins, particularly claudin5. **(B)**: Akt-FoxO1/3a-Stromelysin1 pathway regulates ARDS genes and pathology in humans and rodents as identified from GWAS using Ingenuity pathway analysis.