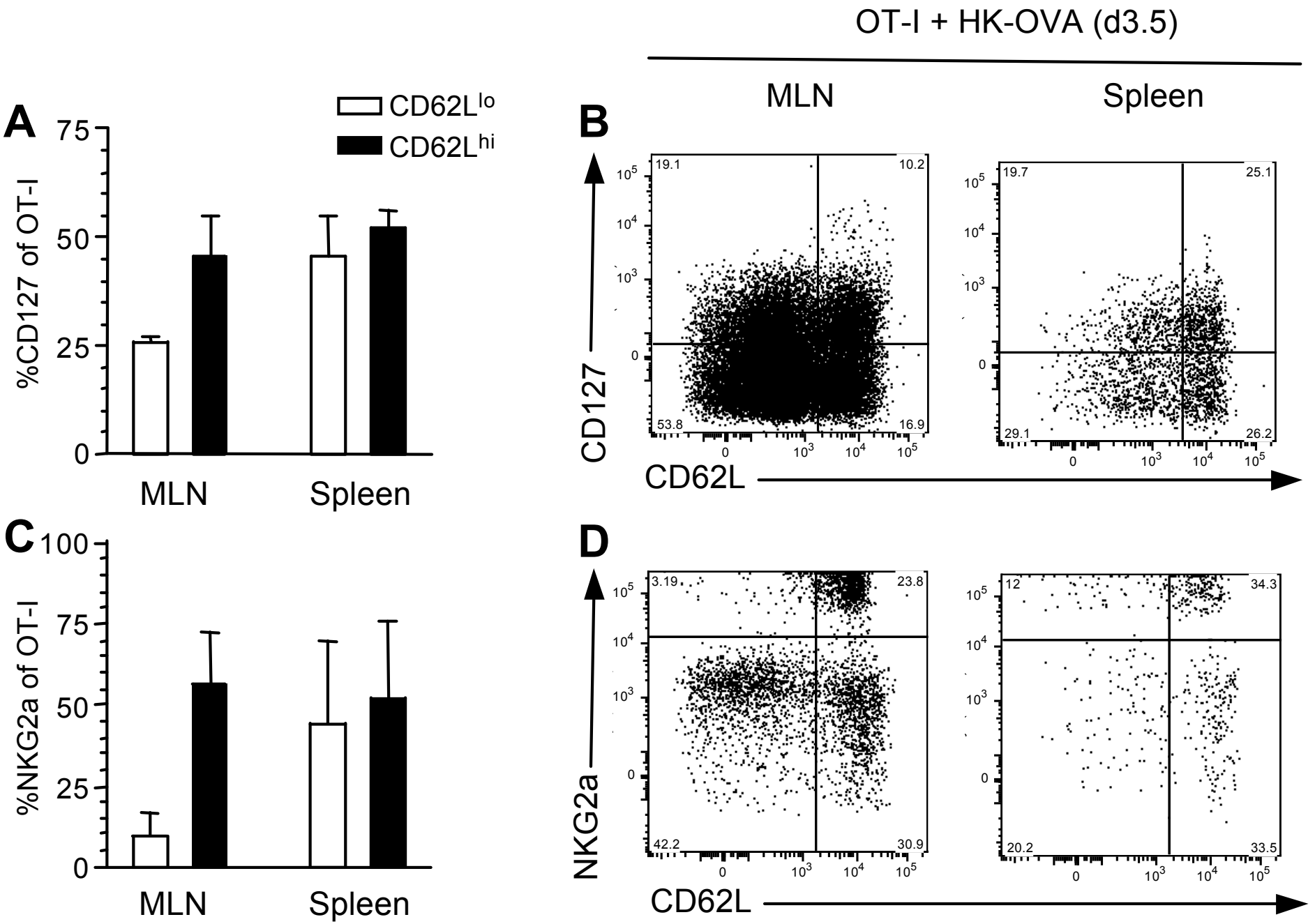Surface characteristics of d3.5 primary responders