THE MHC-RELATED Fc RECEPTOR FOR IgG (FcRn) IS RESPONSIBLE FOR DECREASED DEGRADATION, BUT NOT INCREASED PRODUCTION, OF ALBUMIN

Jonghan Kim[1,2], *C. L. Bronson*[1], *William L. Hayton*[2], *Derry C. Roopenian*[3], *Clark L. Anderson*[1]

[1]*Department of Internal Medicine,* [2]*College of Pharmacy, The Ohio State University, Columbus, OH, USA,* [3]*The Jackson Laboratory, Bar Harbor, ME, USA*

FcRn, the major histocompatibility complex-related Fc receptor that binds IgG and prolongs its half-life, has also been shown to protect albumin from degradation[1]. Based on the mass balance equation using radioiodinated albumin clearance and plasma steady-state concentration of albumin, we estimated the albumin production rate as a 40% decrease in FcRn-deficient mice compared with wild-type mice. We then experimentally tested if FcRn is involved in the albumin production by comparing the plasma concentration of biosynthetically labeled albumin between the two mouse strains after intravenous injection of tritiated leucine. The kinetic analysis, however, shows no significant difference in albumin production rate between the two strains. This suggests that the nearly 50% lower level in the steady-state albumin concentration of FcRn-deficient mice could be attributed entirely to the increase in albumin degradation due to lack of receptor-mediated protection processes, not to a reduction in its production.

1. Chaudhury, C. et al. (2003) J Exp Med. 197, 315-322.