



**Figure 17:** Comparison of subjects AUC 0-∞ prior to glucosamine administration and post glucosamine administration. (n=6)

Based on these findings, further investigation is necessary to clarify the reason for the significant effect of glucosamine on paracetamol established in previous research while diacerein effect in this study was insignificant. Comparing the hepatic metabolism of both molecules indicates that in the paracetamol case, the hepatic metabolism pathways mainly results in the glucuronide form and the sulphate form of paracetamol. Both metabolites also result from the metabolism of diacerein; showing good extended resemblance of both molecules hepatic metabolic pathways. However, there is minor metabolic route for paracetamol through Cytochrome P-450 which results in N-acetyl-p-benzoquinone imine (NAPQI) known to possess toxic effect while diacerein does not go through this route (Bessemers and Vermeulen, 2001; Louchahi et al., 1991). Previous research expressed that glucosamine decreased the metabolism of paracetamol through Cytochrome P-450 by 48%. In addition to this, propranolol was used as a negative