Model 1

$$Y(\text{Cytokine})_k = \beta_0 + \beta_1(\text{Taxa1})_i + \beta_2(\text{Taxa2})_i \ldots\ldots \varepsilon_i$$

Model 2:

$$Y(\text{Cytokine})_k = \beta_0 + \beta_1(\text{Taxa}_1)_i + \beta_2(\text{Taxa}_2)_i \ldots + \lambda(\text{Status}) + \varepsilon_i$$

Model 3:

$$Y(\text{Cytokine})_k = \beta_0 + \beta_1(\text{Taxa1})_i + \ldots\ldots + \lambda(\text{status}) + \gamma_1(\text{Taxa1}_i * \text{Status}) + \gamma_2(\text{Taxa2}_i * \text{Status}) + \varepsilon_i$$