We have $P(X) = \frac{e^{\beta_0 + \beta_1 X}}{1 + e^{\beta_0 + \beta_1 X}}$

$$\frac{P(X)}{1 - P(X)} = \frac{\frac{e^{\beta_0 + \beta_1 X}}{1 + e^{\beta_0 + \beta_1 X}}}{1 - \frac{e^{\beta_0 + \beta_1 X}}{1 + e^{\beta_0 + \beta_1 X}}} = \frac{e^{\beta_0 + \beta_1 X}}{1 + e^{\beta_0 + \beta_1 X} - (e^{\beta_0 + \beta_1 X})}$$

$$\frac{P(X)}{1 - P(X)} = e^{\beta_0 + \beta_1 X}$$