PD144418 (PD) is a potent, selective sigma-1 receptor antagonist used to investigate rewarding processes. Previous experiments using PD indicate there is a dose-dependent reduction in locomotor activity induced by cocaine and methamphetamine, while not altering basal locomotor activity in mice. Also, PD has been shown to lower motivational effort of food-reinforced behavior in male rats without changing food palatability or appetite. Research has yet to investigate PD's effects on motivational effort of food-reinforced behavior when depriving subjects of food for 24 hours, nor the effects observed in females. Thus, this study examined effects of PD on food motivation in male and female rats using an operant task under ad libitum or food-deprived conditions. To do so, rats were trained on a progressive ratio reinforcement schedule to earn sucrose pellets. After training, the rats were given intraperitoneal injections of one of three PD doses (saline, 3.16µmol, or 10µmol) 15 minutes before testing. Results showed that when rats have ad libitum food access, at the 10µmol/kg dose, PD significantly decreased the number of active lever responses for sucrose pellets in males and females. When rats were food deprived (24-hours), PD did not change motivation for food reinforcers in males nor females. However, at the highest dose, PD changed the number of earned food reinforcers in female rats. To ensure that there were no effects on locomotor activity in the operant task, after an acclimation period, a separate set of rats were injected with the same doses mentioned previously and placed in locomotor chambers (50cm x 50cm x 38cm) where activity was measured for 60 minutes. Results revealed no effect of PD144418 on locomotor activity in either sex. Therefore, it is evident that PD144418 decreases motivation for food reinforcers in male and female rats with no effect on locomotor activity.