

BINGE EATING OF A HIGH FAT DIET DURING ADOLESCENCE MODULATES

THE REWARDING EFFECTS OF ETHANOL

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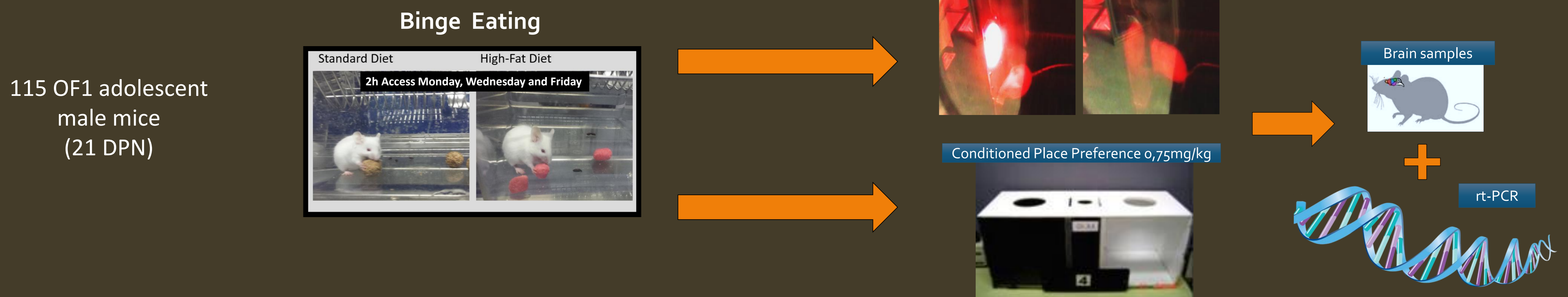
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INTRODUCTION AND AIM

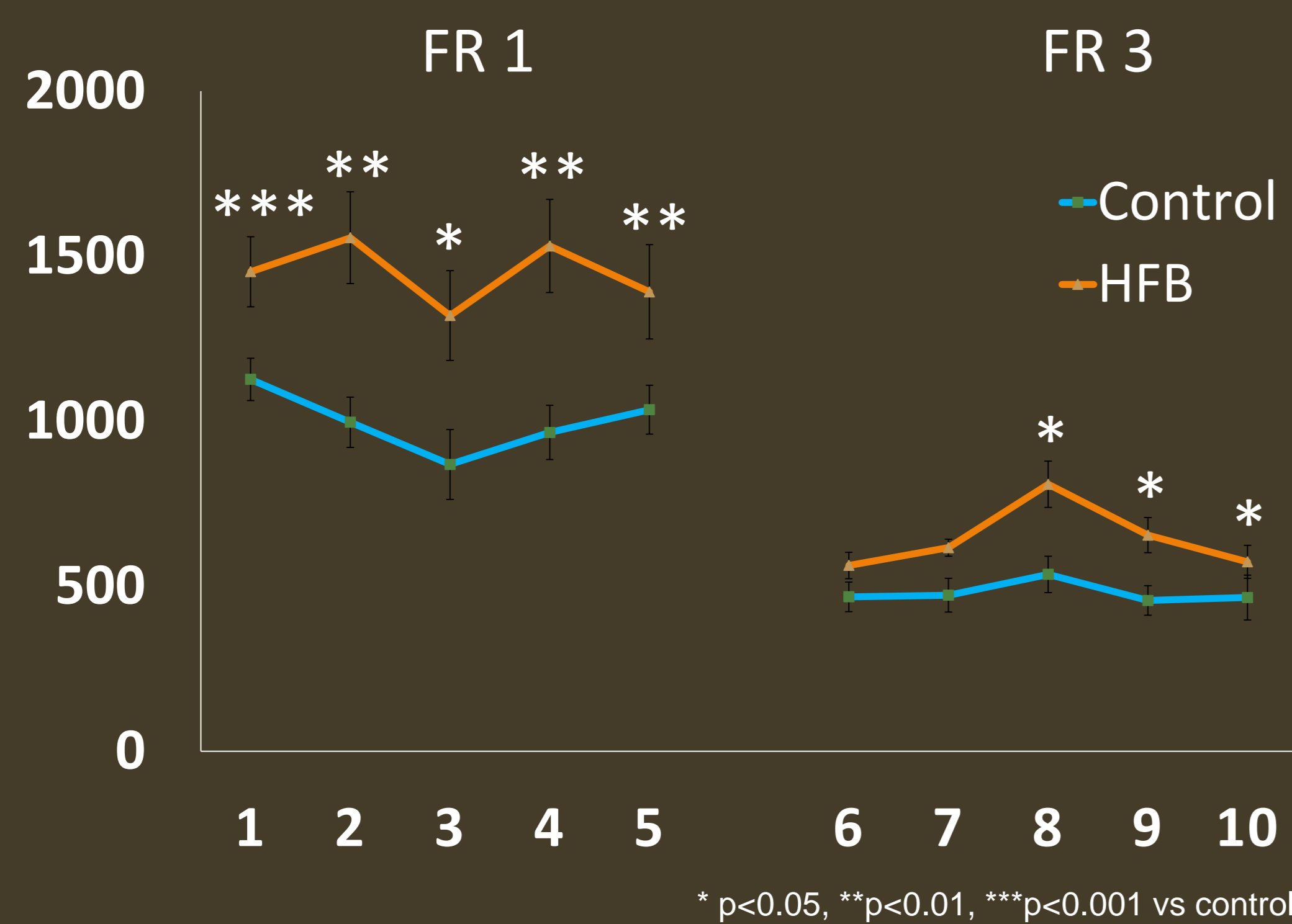
Binge-eating is considered a specific form of overeating characterized by intermittent and high caloric food intake in a short period of time. Epidemiologic studies support a positive relation between the ingestion of fat and ethanol (EtOH), specifically among adolescent subjects. The aim of this work was to clarify the role of the compulsive, limited and intermittent intake of a high-fat food during adolescence on the rewarding effects of EtOH. After binge eating for 2 h, three days a week from postnatal day 29, the reinforcing effects of EtOH were tested with EtOH self-administration (SA) and conditioned place preference (CPP).

MATERIAL AND METHODS

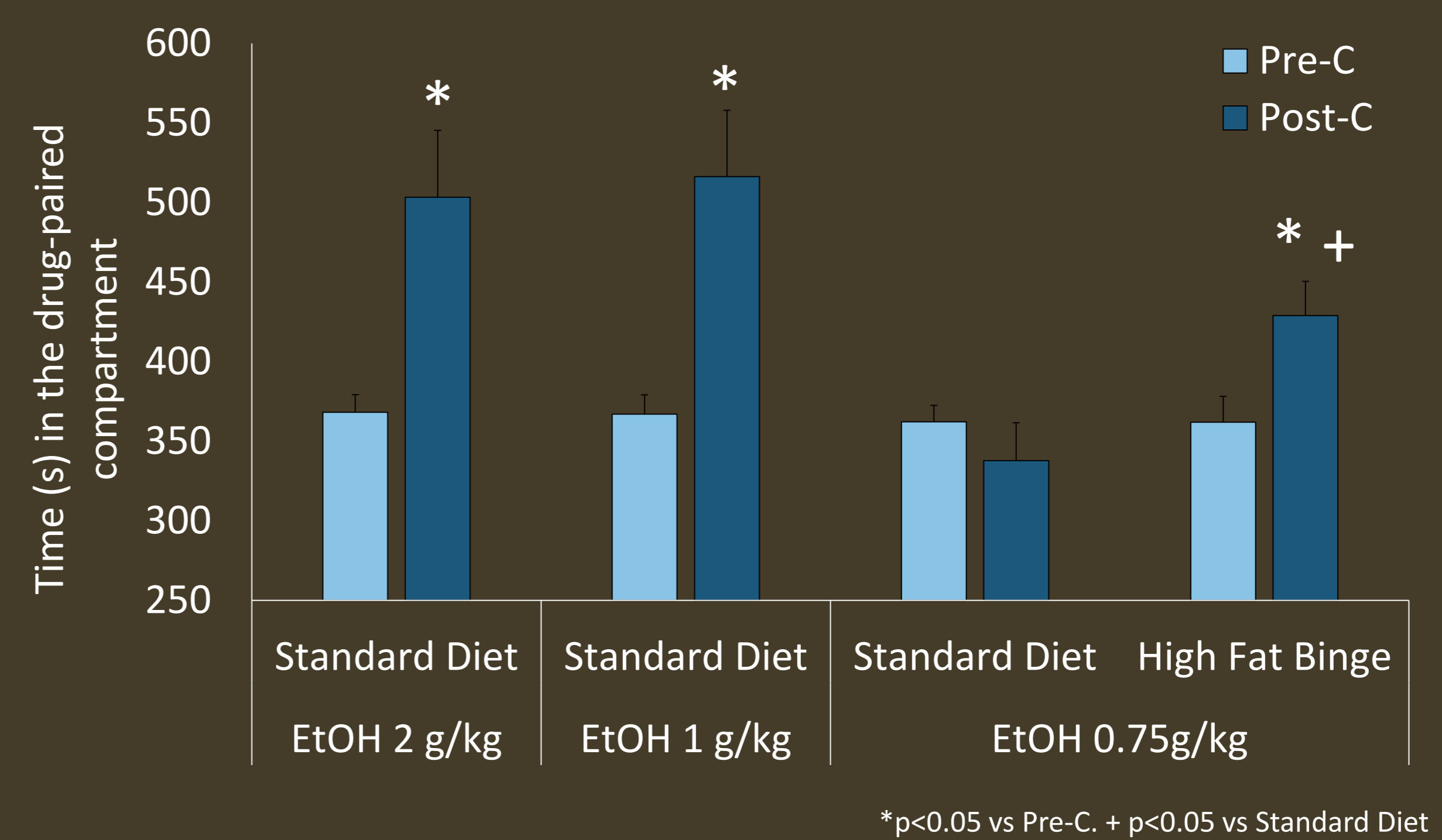


RESULTS

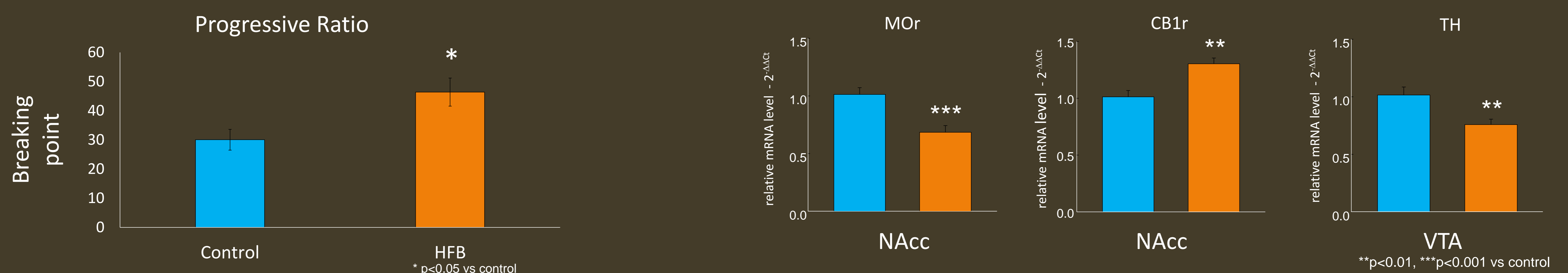
Effects of a high-fat binge on self-administration



Effects of a high-fat binge on CPP



Effects of a high-fat binge + SA on gene expression



Animals in the high fat binge (HFB) group that underwent the EtOH SA procedure presented greater EtOH consumption and a higher motivation to obtain the drug. HFB mice also developed preference for the paired compartment in the CPP with a subthreshold dose of EtOH. After the SA procedure, HFB mice exhibited reduced levels of the mu opioid receptor (MOR) and increased cannabinoid 1 receptor gene expression in the nucleus accumbens (N Acc), and decreased of tyrosine hydroxylase gene expression in the ventral tegmental area (VTA). Taken together the results suggest that bingeing on fat may represent a vulnerability factor to an escalation of EtOH consumption.