**Contents**

**Chapter 1**  General introduction  9

**Chapter 2**  Dopamine receptor D1/D5 gene expression in the medial prefrontal cortex predicts impulsive choice in rats  21

**Chapter 3**  Inhibitory control and response latency differences between C57BL/6J and DBA/2J mice in a Go/No-Go and 5-choice serial reaction time task and strain-specific responsivity to amphetamine  37

**Chapter 4**  Activity and impulsive action are controlled by different genetic and environmental factors  59

**Chapter 5**  Independent genetic loci for sensorimotor gating and attentional performance in BXD recombinant inbred strains  87

**Chapter 6**  Insights in the genetic architecture of impulsivity in mice  111

**Chapter 7**  Enhanced alcohol self-administration and relapse in a highly impulsive inbred mouse strain  127

**Chapter 8**  General discussion  143

**References**  151

**Nederlandse samenvatting**  169

**Dankwoord**  175

**Curriculum Vitae**  178

**Peer-reviewed publications**  179