

## **Abstract**

N6-methyladenosine is the most abundant modification in eukaryotic messenger RNA. This modification is reversible, thanks to a complex of methyltransferases and demethylases. The biological effects of m<sup>6</sup>A are mediated through reader proteins. This complex mechanism of proteins contributes to many molecular processes such as splicing, translation and transport. It also plays a role in many serious neurological diseases, such as Alzheimer's disease, Parkinson's disease, major depressive disorder and attention deficit hyperactivity disorder. The purpose of this thesis is to describe the m<sup>6</sup>A pathway, its regulation at the molecular level and to put it into context with neurological diseases of today.

## **Key words:**

mRNA, mRNA metabolism, N6-methyladenosine, m<sup>6</sup>A regulation, FTO, METTL, ALKBH5, neurodegenerative disorders, Alzheimer's disease, Parkinson's disease, major depressive disorder, ADHD