

## TABLE OF CONTENTS

<b>1</b>	<b>INTRODUCTION</b>	<b>1</b>
	<b>1.1 THE FOETAL HUMAN BRAIN</b>	<b>1</b>
	<b>1.2 NICOTINIC ACETYLCHOLINE RECEPTORS</b>	<b>5</b>
	<b>1.3 NACHRS IN THE HUMAN FOETAL BRAIN</b>	<b>7</b>
	<b>1.4 AIM OF THE THESIS</b>	<b>8</b>
<b>2</b>	<b>MATERIALS AND METHODS</b>	<b>10</b>
	<b>2.1 MATERIALS</b>	<b>11</b>
	2.1.1 TISSUE	11
	2.1.2 SUBSTANCES	11
	2.1.3 TECHNICAL DEVICES	14
	<b>2.2 METHODS</b>	<b>14</b>
	2.2.1 TISSUE PREPARATION AND COATING OF SLIDES	14
	2.2.2 NISSL AND BODIAN STAINING	14
	2.2.3 IMMUNOHISTOCHEMICAL INCUBATION	15
	2.2.4 CONTROLS	16
	2.2.5 EVALUATION	16
	2.2.6 DOCUMENTATION	17
<b>3</b>	<b>RESULTS</b>	<b>18</b>
	<b>3.1 HISTOLOGICAL FINDINGS</b>	<b>18</b>
	3.1.1 FRONTAL LOBE	18
	3.1.2 VISUAL CORTEX	21
	3.1.3 BODIAN STAINING	21
	<b>3.2 NACHRS IN THE FRONTAL LOBE</b>	<b>26</b>
	3.2.1 MIDDLE FOETAL STAGES	26
	3.2.2 LATE FOETAL STAGES	27
	<b>3.3 NACHRS IN THE VISUAL CORTEX</b>	<b>28</b>
	3.3.1 MIDDLE FOETAL STAGES	28
	3.3.2 LATE FOETAL STAGES	28
	<b>3.4 CONTROLS</b>	<b>30</b>
	<b>3.5 GENERAL SURVEY AND SUMMARY OF RESULTS</b>	<b>30</b>

<b>4</b>	<b>DISCUSSION</b>	<b>31</b>
	<b>4.1 MATERIALS AND METHODS</b>	<b>31</b>
	4.1.1 ACQUISITION AND PREPARATION OF TISSUE	31
	4.1.2 DEFINING COMPARABLE REGIONS	31
	4.1.3 PRIMARY ANTIBODIES	32
	4.1.4 EVALUATION	33
	<b>4.2 INTERPRETATION OF RESULTS</b>	<b>33</b>
	4.2.1 GENERAL ASPECTS	33
	4.2.2 CORTICAL PLATE	34
	4.2.3 SUBPLATE	35
	4.2.4 INTERMEDIATE ZONE	36
	4.2.5 GERMINAL LAYERS	36
	<b>4.3 THE ROLE OF ANIMAL MODELS</b>	<b>36</b>
	<b>4.4 DEVELOPMENT OF THE CHOLINERGIC SYSTEM</b>	<b>37</b>
	<b>4.5 SIGNIFICANCE OF NACHRS IN CORTICAL     DEVELOPMENT</b>	<b>40</b>
	<b>4.6 CLINICAL RELEVANCE</b>	<b>41</b>
	<b>4.7 CONCLUSIONS</b>	<b>43</b>
<b>5</b>	<b>SUMMARY</b>	<b>44</b>
<b>6</b>	<b>ZUSAMMENFASSUNG</b>	<b>45</b>
<b>7</b>	<b>REFERENCES</b>	<b>47</b>
<b>8</b>	<b>PRELIMINARY PUBLICATIONS</b>	<b>59</b>