Medial Septal Projections to the Parasubiculum

Inaugural-Dissertation to obtain the academic degree Doctor rerum naturalium (Dr. rer. nat.)

submitted to the Department of Biology, Chemistry and Pharmacy of Freie Universität Berlin by

Daniel Parthier

18.02.2021

Contents

1	Prerequisites	5
2	Introduction	7
	2.1 Theta	7
	2.2 Medial Septum	7
	2.3 Parasubiculum	7
	2.4 Spatial Navigation	7
3	Materials and Methods	9
	3.1 In-Vitro	9
4	Results	11
5	Discussion	13

Prerequisites

Placeholder

Introduction

Placeholder

- 2.1 Theta
- 2.2 Medial Septum
- 2.3 Parasubiculum
- 2.4 Spatial Navigation
- 2.4.1 Theta

Materials and Methods

3.1 In-Vitro

3.1.1 Slice Preparation

For slices animals (n = XX PV-Cre mice, n = XX ChAT-Cre mice) were deeply anaesthetised using isoflurane decapitated, the brain removed and quickly transferred to ice-cold slicing solution. sucrose artificial cerebral spinal fluid (SACF). SACF contained 87 NaCl, 26 NaHCO₃, 10 Glucose, 50 Sucrose, 2.5 KCl, 1.25 NaH_2PO₄, 0.5 CaCl₂, 3 MgCl₂ \cdot 6H₂O. 400 μ m horizontal slices were produced using a vibratome (VT1200S, Leica Biosystems, Wetzlar, Germany), then transferred and stored in an interface chamber for up to 1-6 h. Slices were perfused with ACSF (119 NaCl, 26 NaHCO₃, 10 Glucose, 2.5 KCl, 1 NaH₂PO₄, 2.5 CaCl₂, 1.3 MgCl₂ \cdot 6H₂O) and oxygenated during the whole period.

3.1.2 Slice Recordings

Cells where identified using XXXX DIC XXXX and recorded using a glass electrode filled with intracellular solution (120 K-Gluconate, 10 Hepes, 10 KCl, 5 EGTA, 2 $MgSO_4 \cdot 7H_2$, 3 MgATP, 1 NaGTP, 5 Phosphocreatine Na, 0.2% Biocytin) to record currents, voltage and later identify cells via Biocytin staining.

all in c/mM

Drugs used:

Results

Here is a review of existing methods.

Discussion

Here is a review of existing methods.