

## Current Research Relevant to ENOC and Annual Working Plan

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### Summary of Current Research

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**Aim:** to identify markers in prediction of treatment outcome of depression, and in early recognition of relapse and recurrence of depressive disorder → 1H MRS resonance levels → **topographic qEEG** genetics

**Study medication:** escitalopram, nortriptyline

**Evaluation times:** Baseline, day 10 (14), week 8

**Current 1H MRS sample:** 110

**Planned sample:** 350

**Add-on study to FP6 approved project "Genomic-based Therapies for Depression (GENDEP)"**

**Spectral analysis of absolute/ relative power and mean frequency in delta, theta, alpha, beta and total spectrum frequency bands:**

**↑α** desipramine, sertraline (low doses), fluoxetine

**↑θ, β + ↓α** imipramine, amitriptyline, fluvoxamine, mianserin, paroxetine

### Study Arms

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**MDD** → PHARMACOTHERAPY

**OCD** → NEUROFEEDBACK

**ADHD ?** → NEUROFEEDBACK + PHARMACOTHERAPY

Overall efficacy

Response rate

Prediction of response

- Serotonin Transporter (*SLC6A4 / 5-HTT*)
- Tryptophan Hydroxylase (*TPH*)
- 5-Hydroxytryptamine Receptor 1A (*HTR1A*)
- Noradrenaline transporter (*SLC6A2 / NET*)
- Alpha-2A-adrenergic Receptor (*ADRA2A*)
- Brain-derived neurotrophic factor (BDNF)**
- BDNF receptor /TrkB/**
- G-protein beta3-gene (*GNB3*)
- Cytochrome P450 2D6 (*CYP2D6*)
- Cytochrome P450 2C19 (*CYP2C19*)

### Main Partners

Medical schools of universities of Zagreb and Osijek

Dubrava University Hospital, Zagreb

Zagreb University Hospital

Osijek University Hospital

Psychiatric Hospital for Children and Adolescents,  
Zagreb

