

ELECTRONIC SUPPLEMENTARY FILE

Effects of cannabidiol on activated immune-inflammatory pathways in major depressive patients and healthy controls.

(1) Muanpetch Rachayon; (1,2) Ketsupar Jirakran; (3) Pimpayao Sodsai; (4) Siriwan Klinchanhom; (1) *Atapol Sughondhabirorn*; (5) Kitiporn Plaimas; (6) Apichat Suratanee; (1,7,8) Michael Maes

(1) Department of Psychiatry, Faculty of Medicine, Chulalongkorn University and King Chulalongkorn Memorial Hospital, the Thai Red Cross Society, Bangkok, Thailand

(2) Maximizing Thai Children's Developmental Potential Research Unit, Department of Pediatrics, Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand

(3) Center of Excellence in Immunology and Immune-Mediated Diseases, Department of Microbiology, Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand

(4) Division of Immunology, Department of Microbiology, Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand

(5) Advanced Virtual and Intelligent Computing (AVIC) Center, Department of Mathematics and Computer Science, Faculty of Science, Chulalongkorn University, Bangkok 10330, Thailand

(6) Department of Mathematics, Faculty of Applied Science, King Mongkut's University of Technology North Bangkok, Bangkok 10800, Thailand

(7) IMPACT Strategic Research Center, Barwon Health, Geelong, Australia;

(8) Department of Psychiatry, Medical University of Plovdiv, Plovdiv, Bulgaria

Table S1. Cytokine, chemokines and growth factors examined in the current study

Protein abbreviations	Protein name	Gene Symbol	Number of samples that lower than sensitivity of the assay
IL-1 β	Interleukin-1 β	IL1B	0
IL-1RA	Interleukin-1 receptor antagonist	IL1RN	0
IL-2	Interleukin-2	IL2	0
IL-4	Interleukin-4	IL4	0
IL-5	Interleukin-5	IL5	0
IL-6	Interleukin-6	IL6	0
IL-7	Interleukin-7	IL7	125 (out of 200)
CXCL8 / IL-8	C-X-C motif chemokine ligand 8	CXCL8	0
IL-9	Interleukin-9	IL9	0
IL-10	Interleukin-10	IL10	0
IL-12	Interleukin-12	IL12	1
IL-13	Interleukin-13	IL13	60 (out of 200)
IL-15	Interleukin-15	IL15	0
IL-17	Interleukin-17	IL17	0
CCL11	Eotaxin	CCL11	0
FGF2	Fibroblast growth factor 2, Basic fibroblast growth factor	FGF2	0
G-CSF	Granulocyte Colony Stimulating Factor, Colony Stimulating Factor 3 (Granulocyte)	CSF3	0
GM-CSF	Granulocyte-macrophage colony-stimulating factor, Colony-stimulating factor 2	CSF2	0
IFN- γ	Interferon- γ	IFNG	0
CXCL10 / IP-10	C-X-C motif chemokine ligand 8, Interferon gamma-induced protein 10	CXCL10	0
CCL2 / MCP1	C-C Motif Chemokine Ligand 2	CCL2	0
CCL3 / MIP-1 α	Macrophage inflammatory protein-1 alpha, C-C Motif Chemokine Ligand 3	CCL3	0

PDGF	Platelet Derived Growth Factor Subunit B	PDGFB	0
CCL4 / MIP-1 β	C-C Motif Chemokine Ligand 4, Macrophage Inflammatory Protein 1-Beta, Lymphocyte Activation Gene 1 Protein	CCL4	0
CCL5 /RANTES	C-C Motif Chemokine Ligand 5, Regulated Upon Activation, Normally T-Expressed, And Presumably Secreted	CCL5	0
TNF- α	Tumor Necrosis Factor-Alpha	TNF	0
VEGF	Vascular Endothelial Growth Factor	VEGFA	0

Table S2. Description of the immune profiles used in this study

Immune Profile	Members
M1 macrophage	IL-1 β , sIL-1RA, IL-6, TNF- α , CXCL8, CCL3
T helper-1	IL-2, IFN- γ , IL-12
T helper-2	IL-4, IL-5, IL-9, IL-13
T helper-17	IL-6, IL-17
IRS	IL-1 β , IL-6, TNF- α , CXCL8, CCL3, IL-2, IFN- γ , IL-12, IL-17, IL-15, G-CSF, GM-CSF, CXCL10, CCL5, CCL2
CIRS	IL-4, IL-10, sIL-1RA
Neurotoxicity	IL-1 β , IL-6, TNF- α , CXCL8, CCL3, IL-2, IFN- γ , IL-12, IL-17, CXCL10, CCL11, CCL5, CCL2
T cell growth	IL4, IL9, IL12, GM-CSF, IL-15
Growth factors	FGF, PDGF, VEGF

IRS: immune-inflammatory response system; CIRS: compensatory immunoregulatory system

GM-CSF

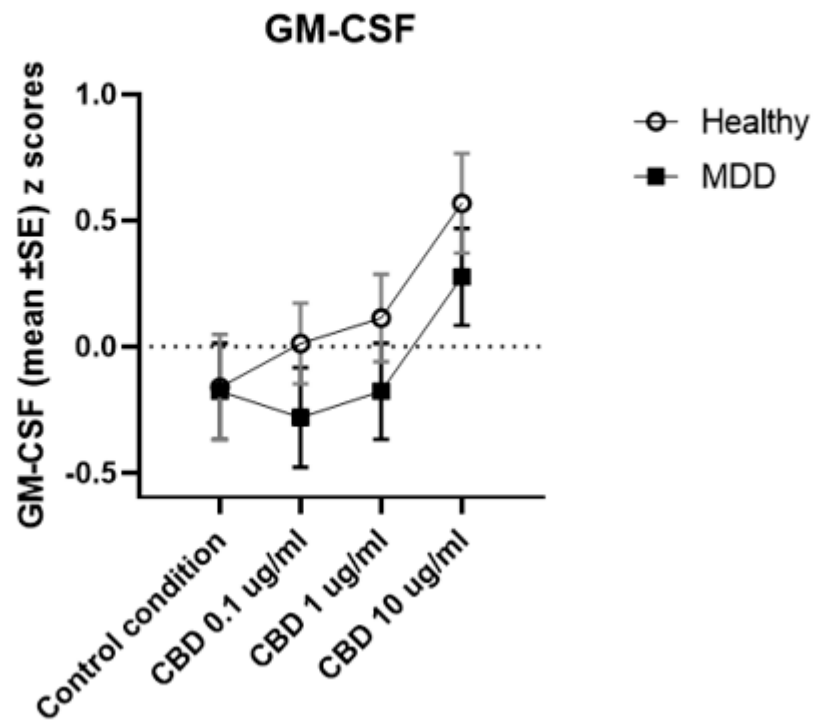


Figure S1. Effects of the Interaction between diagnosis and cannabidiol (CBD) administration on the production of granulocyte-macrophage colony-stimulating factor (GM-CSF) in culture supernatant

CCL5·(RANTES)

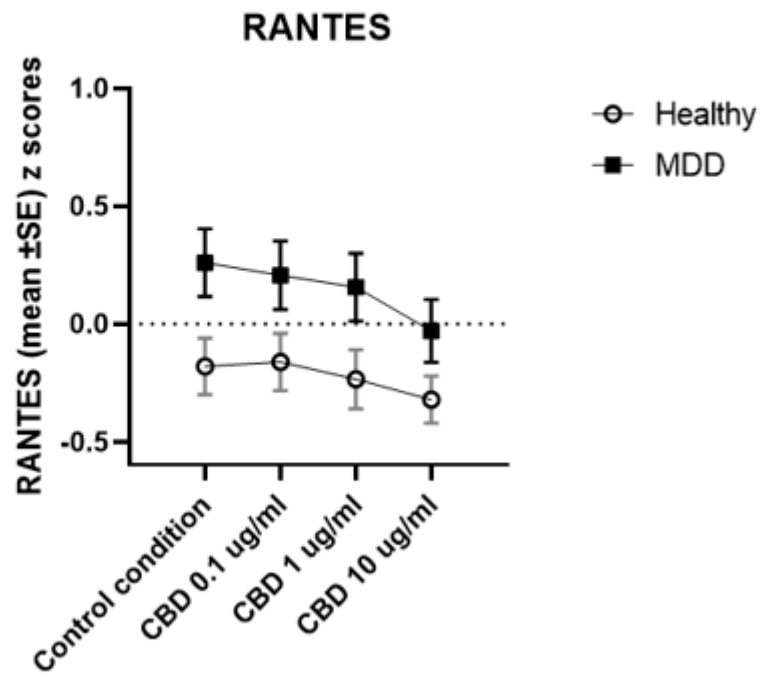


Figure S2. Effects of the Interaction between diagnosis and cannabidiol (CBD) administration on the production of CCL5 in culture supernatant

CXCL8·(IL-8)¶

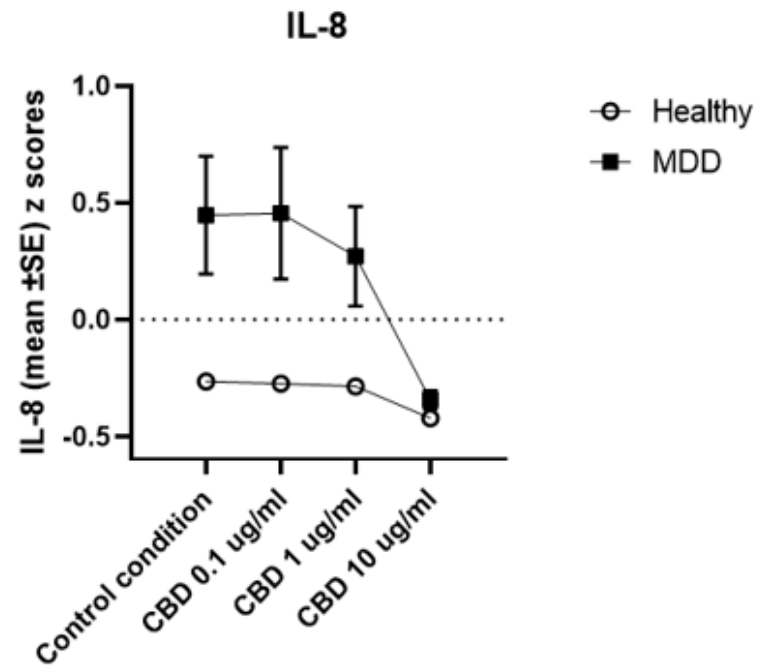


Figure S3. Effects of the Interaction between diagnosis and cannabidiol (CBD) administration on CXCL8 production in culture supernatant