



# 23<sup>a</sup> Reunión Anual de la Sociedad Española de Investigación sobre Cannabinoides

*First Joint Spanish-French Meeting  
on Cannabinoid Research*

**BURDEOS / BORDEAUX**  
*23-25 Noviembre / Novembre, 2023*





**23<sup>a</sup> Reunión Anual de la  
Sociedad Española de Investigación  
sobre Cannabinoides - First Joint  
Spanish-French Meeting on Cannabinoid  
Research**



Centre Broca Nouvelle-Aquitaine,  
Bordeaux, France

**Bordeaux**  
**23-25 November, 2023**

*Cover: Jon Egaña-Huguet*

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Sociedad Española de Investigación sobre Cannabinoides

Departamento de Bioquímica y Biología Molecular

Facultad de Medicina

Universidad Complutense de Madrid

28040 Madrid (España)

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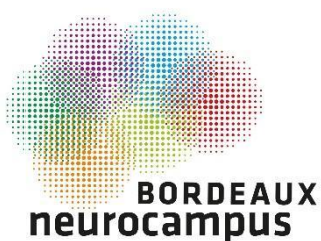
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## SCIENTIFIC PROGRAM

Thursday, November 23<sup>rd</sup>

- 10:00-11:30 Registration and poster setting-up**
- 11:30-12:00 Opening**
- Pedro Grandes (SEIC President).
  - Stéphane Oliet (Neurocentre Magendie Director).
  - Cristina Miralpeix (Organizing Committee).
- 12:00-13:00 Opening lecture: *Cannabinoid receptors in the brain: extracting specificity from ubiquity***  
**Giovanni Marsicano** (Neurocentre Magendie, INSERM U1215, Bordeaux).  
Introduced by Abel Eraso-Pichot
- 13:00 Lunch**
- 14:30-16:15 Oral communications (Session I): Cannabinoid signaling in glial cells**
- Chaired by Susana Mato
- 14:30-14:45 O1.1  
ENDOCANNABINOID SYSTEM IN MÜLLER GLIAL CELLS  
Beriain S., Eraso-Pichot A., Vecino E., Marsicano G.
- 14:45-15:00 O1.2  
ANALYSIS OF ENDOCANNABINOID DYNAMICS IN ASTROCYTES  
Eraso-Pichot A., Olivera-Pinto A., Baraibar AM., Dalla-Tor T., Kedziora M., Garcia-Blanco A., Fernández-Moncada I., Serrat R., Magre P., Cannich A., Mato S., Marsicano G.
- 15:00-15:15 O1.3  
CANNABINOID CB1 RECEPTOR IN NG2 CELLS IS ESSENTIAL FOR MYELIN REPAIR AND FUNCTIONAL RECOVERY  
Sánchez-de la Torre A., Ezquerro S., Alonso-Gómez A., Cortina M., Resel E., Sánchez-Martín E., Matute C., Monory K., Mato S., Lutz B., Galve-Roperh I., Guzmán M., Aguado T., Palazuelos J.

- 15:15-15:30 O1.4  
EXPLORING THE FUNCTION OF MICROGLIA IN 5XFAD/FAAH-/- MICE THROUGH IN VIVO MULTIPHOTON MICROSCOPY AND MOLECULAR ANALYSIS  
Arnanz MA., Grande T., Ruiz de Martín Esteban S., Martín L., López A., Cravatt BF., Mostany R., Romero J., Martínez Relimpio AM.
- 15:30-15:45 O1.5  
ASTROGLIAL MONOACYLGLICEROL LIPASE GENE INACTIVATION PREVENTS CNS DEMYELINATION  
Ezquerro S., Sánchez de la Torre A., Alonso-Gómez A., Cortina M., Zechner R., Zimmermann R., Galve-Roperh I., Guzmán M., Aguado T., Palazuelos J.
- 15:45-16:00 O1.6  
OLFACTORY BULB ASTROCYTES CONTROL SOCIAL TRANSMISSION OF STRESS AND ITS COGNITIVE CONSEQUENCES  
Gomez-Sotres P., Skupio U., Dalla-Tor T., Julio-Kalajzic F., Cannich A., Gisquet D., Bellocchio L., Busquets-Garcia A., Bains JS., Marsicano G.
- 16:00-16:15 O1.7  
A2AR-CB2R HETEROMER ROLE IN ANIMAL MODELS OF GLUCOSE AND OXYGEN DEPRIVATION  
Capó A., Raich I., Rebassa JB., Lillo J., Rivas R., Reyes-Resina I., Martínez-Orgado J., Franco R., Navarro G.
- 16:15-17:15 Coffee and poster session (Session I)**
- 17:15-19:15 Oral communications (Session II): Cannabinoid compounds and their therapeutic effects.**
- Chaired by Daniel Alonso-Alconada
- 17:15-17:30 O2.1  
EFFECT OF A COMBINATION THERAPY WITH CANNABIDIOL AND B-CARYOPHYLLENE FOR DRAVET SYNDROME: EMPHASIS ON MYELIN DAMAGE  
Sierra A., Satta V, Hernández-Fisac I., Guimaré JA., Fernández-Ruiz J., Sagredo O.
- 17:30-17:45 O2.2  
SEX-DEPENDENT NEUROPROTECTIVE EFFECTS OF THE SYNTHETIC CANNABINOID URB447 COMBINED WITH HYPOTHERMIA AFTER NEONATAL HYPOXIC-ISCHEMIC BRAIN INJURY

Chillida M., Bouzier-Sore AK., Beldarrain G., Alart JA., Álvarez FJ., Hilario E., Álvarez A., Alonso-Alconada D.

- 17:45-18:00 O2.3  
RELEVANCE OF THE CB2 RECEPTOR IN A FIBROMYALGIA-LIKE MOUSE MODEL  
Rodríguez-López A., Álvarez-Pérez B., Maldonado R.
- 18:00-18:15 O2.4  
VCE-009.1, A NOVEL FORMULATION OF NATURAL PRODUCTS WITH POSITIVE ALLOSTERIC MODULATORY ACTIVITY FOR CB1R  
Ponce Díaz FJ., Collado Rojas JA., Lastres-Cubillo I., Calzado MA., Muñoz Blanco E.
- 18:15-18:30 O2.5  
PERIPHERAL CB1R INHIBITION AMELIORATES BEHAVIORAL AND MOLECULAR ALTERATIONS OF A MOUSE MODEL OF FRAGIL X SYNDROME  
De los Reyes-Ramírez L., Bergadà-Martínez A., Martínez-Torres S., Martínez-Gallego I., Arboleya S., Gueimonde M., Maldonado R., Rodríguez-Moreno A., Ozaita A.
- 18:30-18:45 O2.6  
ASSESSMENT OF COMMON MOLECULAR SIGNATURES SENSITIVE TO TREATMENT WITH ENDOCANNABINOID SYSTEM MODULATORS IN FRAGILE X SYNDROME  
Galera-López L., de los Reyes-Ramírez L, Reixachs-Solé2 M., Martínez-Torres S., Navarro-Romero A., Martínez-Cerdeño V., Maldonado R., Eyraas E., Ozaita A.
- 18:45-19:00 O2.7  
ADDITIVE EFFECT OF SGLT2 INHIBITION AND CB1R ANTAGONISM IN THE FIGHT AGAINST DIABETIC NEPHROPATHY  
Pointeau O., Ba A., Geissler A., Passilly-Degrace P., Nivot M., Leemput J., Demizieux L., Vergès B., Degrace P., Jourdan T.

**09:00-10:15 Oral communications (Session III): Cannabinoids and neurodegenerative diseases.**

Chaired by Marisol Aymerich

09:00-09:15 O3.1  
ACTIVATION OF MICROGLIAL CB2 RECEPTORS IS NEUROPROTECTIVE IN THE CHRONIC MPTP MOUSE MODEL OF PARKINSON'S DISEASE

Ayerra L., Abellanas MA., Basurco L., Tavira A., Zamarbide M., Luquin E., Ruiz de Martín Esteban S., Martí MJ., Collantes M., Peñuelas I., Mengual E., Hillard CJ., Hervás-Stubbs S., Romero J., Aymerich MS.

09:15-09:30 O3.2  
ACEA TREATMENT MITIGATE BEHAVIORAL AND BIOENERGETIC DEFICITS IN AN ALZHEIMER'S DISEASE MOUSE MODEL

Ramon Duaso C., Vidal-Palencia L., Pinho J., Madrid-Gambin F., Manzanares-Sierra I., Ausellé-Bosch S., González-Parra JA., Pagano Zottola AC., Bellocchio L., Marsicano G., Pozo OJ., Busquets-Garcia A.

09:30-09:45 O3.3  
MOLECULAR INSIGHTS TO CANNABIDIOL ACTION IN GABAERGIC NEURONS OF A MITOCHONDRIAL DISEASE MODEL

Van der Walt G., Quintana A., Puighermanal E.

09:45-10:00 O3.4  
BENEFITS OF MODULATING CB1 RECEPTOR AGAINST PROTEIN DYSREGULATION IN MICE OVEREXPRESSING A-SYNUCLEIN(A53T)

Rodriguez-Carreiro S., Navarro E., Gómez-Cañas M., García C., Fernández-Ruiz J.

10:00-10:15 O3.5  
ALTERATION OF HIPPOCAMPAL CB1R CAN DRIVE NEURONAL-ASTROCYTE DYSFUNCTION LEADING TO COGNITIVE DECLINE IN HUNTINGTON'S DISEASE

Di Franco N., López-Molina L., Espina Cortes M., Miquel Rio LM., Bortolozzi A., Perea Parrilla G., Guzmán M., Gines Padros S.

**10:15-11:15 Coffee and poster session (Session II)**

**11:15-12:15 Oral communications (Session IV): Cannabinoids and cancer.**

Chaired by Eduardo Pérez Gómez

11:15-11:30 O4.1  
SHORT EXPOSURE TO NANOMOLAR CANNABINOIDS PROMOTES  
BREAST CANCER CELL DIFFERENTIATION  
Martinez-Illescas NG., Salazar-Roa M.

11:30-11:45 O4.2  
ROLE OF HER2-CB2R HETEROMERS IN TRASTUZUMAB RESISTANCE  
IN HER2+ BREAST CANCER  
Seijo-Vila M., Tundidor I., Rubert Hernández M., Blasco-Benito S.,  
Losada R., Luis Manso L., Pérez-Gómez E., Sánchez C.

11:45-12:00 O4.3  
CANNABINOID RECEPTOR 2 IN THE BREAST TUMOR  
MICROENVIRONMENT: ROLE IN TUMOR PROGRESSION  
Rubert M., Seijo-Vila M., Tundidor I., Blasco-Benito S., Sánchez C.,  
Pérez-Gómez E.

12:00-12:15 O4.4  
A PRECLINICAL THERAPY WITH CANNABINOIDS, TEMOZOLOMIDE  
AND BEVACIZUMAB IN GLIOBLASTOMA MODELS  
Sanz-Gálvez A., Tovar-Ambel E., Mugica-Urruzola E., Lorente M.,  
Sepúlveda-Sánchez JM., Bhogal P., Velasco G.

**12:15-13:15 Hot Topic: *Is the CB1 receptor still an attractive target for metabolic disease?***

**Daniela Cota** (Neurocentre Magendie, INSERM U1215, Bordeaux).

Introduced by Cristina Miralpeix

**13:15 Lunch**

**14:45-16:00 Oral communications (Session V): Cannabinoids and other drugs of abuse: psychiatric effects and signaling.**

Chaired by Rui Rodrigues

14:45-15:00 O5.1  
CB1R UBIQUITINATION: TOWARDS AN UNDERSTANDING OF  
CANNABINOID TOLERANCE  
Álvaro-Blázquez A., Costas-Insua C., Montero-Fernández C.,  
Hermoso-López A., Rodríguez-Crespo I., Guzmán M.

- 15:00-15:15 O5.2  
EFFECTS OF OMEGA-3 FATTY ACIDS ON THE ENDOCANNABINOID SYSTEM IMPAIRED IN THE HIPPOCAMPUS OF ADULT MALE MICE AFTER ADOLESCENT BINGE DRINKING  
Serrano M., Lekunberri L., Saumell-Esnaola M., Ocerin G., Mimenza A., Bonilla-Del Río I., Sallés J., Soria-Gómez E., Gerrikagoitia I., Puente N., García Del Caño G., Rico-Barrio I., Grandes P.
- 15:15-15:30 O5.3  
ASTROCYTIC ENSEMBLES IN NUCLEUS ACCUMBENS: WHAT ROLE DO THEY PLAY IN THC-RELATED IMPAIRMENTS?  
Martín-Monteagudo C., Puente N., Grandes P., Navarrete M.
- 15:30-15:45 O5.4  
CELL TYPE-SPECIFIC MOLECULAR MECHANISMS ALTERED BY REPEATED THC EXPOSURE IN THE HIPPOCAMPUS  
Kouchaeknejad A., Cutando L., Biever A., Valjent E., Puighermanal E.
- 15:45-16:00 O5.5  
SEX-SPECIFIC REGULATION OF SYNAPTIC PLASTICITY AND AMPHETAMINE EFFECTS BY ASTROGLIAL CB1  
Covelo A., Mariani Y., Julio-Kalajzić F., Gisquet D., Cannich A., Bellocchio L., Marsicano G.
- 16:00-17:00 Coffee and poster session (Session III)**
- 17:00-17:30 Tribute to José Antonio Ramos Atance**
- 17:30-19:00 SEIC general assembly** (only for SEIC members)
- 21:00 Dinner at Café du Port** (Provided by the organization)

**10:00-10:30 Oral communications (Session V continued): Cannabinoids and other drugs of abuse: psychiatric effects and signaling.**

Chaired by Ana Covelo

10:00-10:15 O5.6  
UNRAVELING THE ROLE OF PPAR- $\gamma$  IN MEMORY DYSFUNCTION INDUCED BY PRENATAL AND LACTATION ALCOHOL EXPOSURE IN MICE

Garcia-Baos A., Pastor A., Gallego-Landin I., De la Torre R., Sanz F., Valverde O.

10:15-10:30 O5.7  
ADOLESCENT CANNABINOID EXPOSURE RESCUES SOCIABILITY DEFICITS IN A MOUSE MODEL OF PSYCHOSIS THROUGH MODULATION OF CA2 TRANSMISSION

Barrera-Conde M., Ramon-Duaso C., Veza-Estevez E., Chevaleyre V., Piskorowski RA., De la Torre R., Busquets-García A., Robledo P.

**10:30-10:45 SEIC Award for the best predoctoral publication 2023**

PERIPHERAL CB1 RECEPTOR BLOCKADE ACTS AS A MEMORY ENHANCER THROUGH A NORADRENERGIC MECHANISM

Martínez-Torres S., Bergadà-Martínez A., Ortega JE., Galera-López L., Hervera A., De los Reyes-Ramírez L., Ortega-Álvaro A., Remmers F., Muñoz-Moreno E., Soria G., Del Río JA., Lutz B., Ruíz-Ortega JA., Meana J., Maldonado R., Ozaita A.

Introduced by Juan Suarez

**10:45-11:00 SEIC Award for the best postdoctoral publication 2023**

CONTROL OF A HIPPOCAMPAL RECURRENT EXCITATORY CIRCUIT BY CANNABINOID RECEPTOR-INTERACTING PROTEIN GAP43

Maroto IB., Costas-Insua C., Berthoux C., Moreno E., Ruiz-Calvo A., Montero-Fernández C., Macías-Camero A., Martín R., García-Font N., Sánchez-Prieto J., Marsicano G., Bellocchio L., Canela EI., Casadó V., Galve-Roperh I., Núñez A., Fernández de Sevilla D., Rodríguez-Crespo I., Castillo PE., Guzmán M.

Introduced by Nadine Jagerovic

**11:00-11:45 Coffee**

**11:45-12:45 Awards and closing ceremony**

**P1.1**

EXPLORING THE ROLE OF CB2 RECEPTORS IN NEUROINFLAMMATION AND MICROGLIAL SIGNALING IN ALZHEIMER'S DISEASE: INSIGHTS FROM BEHAVIORAL AND MOLECULAR ANALYSIS

Martín-Pérez L., López-Escobar A., Ruiz de Martín Esteban S., Arnanz MA., Martínez-Relimpio AM., Mostany R., Hillard CJ., Grande MT., Romero J.

**P1.2**

CB2 RECEPTOR INFLUENCE ON MICROGLIAL FUNCTION IN AN ALZHEIMER'S DISEASE MOUSE MODEL

López-Escobar A., Martín-Pérez L, Ruiz de Martín Esteban S., Arnanz MA., Martínez-Relimpio AM., Mostany R., Hillard CJ., Grande MT., Romero J.

**P1.3**

OLIGODENDROCYTE CB1 RECEPTORS: IMPLICATIONS IN ENERGY METABOLISM AND MULTIPLE SCLEROSIS

Sánchez-Martín E., Bernal-Chico A., Colomer T., Utrilla C., Baraibar AM., Ruiz A., Aguado T., Guzmán M., Galve-Roperh I., Palazuelos J., Mato S.

**P1.4**

ROLE OF ASTROCYTE CB1 RECEPTORS IN MULTIPLE SCLEROSIS

Colomer-Mollá T., Sánchez-Martín E., Utrilla C., Bernal-Chico A., Baraibar AM., Tepavcevic V., Marsicano G., Mato S.

**P1.5**

HETEROMERS OF ADENOSINE AND CANNABINOID RECEPTORS IMPLICATED IN THE CONTROL OF GLUTAMATE RELEASE

Moreno E., Köfalvi A., Casadó-Anguera V., Canela E., Ciruela F., Pardo L., Ferré S., Casadó V.

**P1.6**

IMPACT OF MEMBRANE LIPID COMPOSITION ON CB1 CANNABINOID RECEPTOR

Bengoetxea de Tena I., Pereira-Castelo G., Martínez-Gardeazabal J., Moreno-Rodríguez M., Manuel I., Bellocchio L., Marsicano G., Villette S., Rascol E., Alves ID., Rodríguez-Puertas R.

**P1.7**

REGULATION OF MITOCHONDRIAL DYNAMICS BY ENDOCANNABINOIDS AS A NEUROPROTECTIVE MECHANISM IN VITRO

Torres-Román AL., Simón-Sánchez S., Gavaldá T., Ortega-Gómez A., Santamaría A., Galve Roperh I.

**P1.8**

HETEROMERIZATION OF GPR55 AND CANNABINOID CB1 AND CB2 RECEPTORS IN PREFRONTAL CORTEX OF MULTIPLE SCLEROSIS PATIENTS

Menéndez-Pérez C., Navarro A., Rivas-Santisteban R., Franco R., Martínez-Pinilla E.

**P1.9**

NEUROECONOMICS REVEAL THAT CB1 RECEPTORS IN ACCUMBAL GABAERGIC INTERNEURONS GATE RUNNING, BUT NOT FEEDING, MOTIVATION

Hurel I., Redon B., Fayad R., Di Lodovico L., Bellocchio L., Cannich A., Gisquet D., Julio-Kalajzić F., Marsicano G., Chaouloff F.

**P1.10**

THE EFFECT OF CORTICOSTEROIDS ON NOVEL OBJECT RECOGNITION AND CALCIUM DYNAMICS IN HIPPOCAMPAL INTERNEURONS

Welte J., Skupio U., Serrat R., Julio-Kalajzić F., Gisquet D., Cannich A., Bellocchio L., Chaouloff F., Pouvreau S., Marsicano G.

**P1.11**

IN VIVO IMAGING OF CB1-DEPENDENT MODULATION OF BRAIN METABOLISM

Dalla-Tor T., Gómez-Sotres P., Delcasso S., Cannich A., Drago F., Fernández-Moncada I., Marsicano G.

**P1.12**

A LACTATE-DEPENDENT SHIFT OF GLYCOLYSIS MEDIATES SYNAPTIC AND COGNITIVE PROCESSES

Fernández-Moncada I., Fundazuri UB., Lavanco G., Bollmohr N., Hachaguer P., Dalla Tor T., Mountadem S., Bellocchio L., Cannich A., Nasu Y., Campbell RE., Drago F., Bouzier-Sore AK., Pellerin L., Bolaños JP., Bonvento G., Barros LF., Oliet SHR, Aude Panatier A., Marsicano G.

**P1.13**

ROLE OF CB1 RECEPTORS IN POMC NEURONS IN GATING ENERGY NEEDS WITH COMPETING BEHAVIORS

Miralpeix C., Eraso-Pichot A., Skupio U., Jouque V., Quarta C., Marsicano G., Cota D.

**P1.14**

EMBRYONIC CANNABINOID CB1 RECEPTOR KNOCKDOWN ALTERS THE NEUROGENIC GENE EXPRESSION PROGRAM AND FUNCTIONAL MATURATION OF PYRAMIDAL NEURONS

Simón-Sánchez S., Den Boon F., García-Rincón D., Mérida-Coronel A., Gavaldá T., Guzmán M., Chameau P., Galve-Roperh I.

**P1.15**

CELLULAR SPECIFICITY AND SEXUAL DIMORPHISM OF HIPPOCAMPAL CB1 RECEPTORS ON BEHAVIORAL PROCESSES

Sangroniz L., Landgraf N., Baraibar A., Ceprián M., Ruiz P., Julio-Kalajzić F., Reyes Velásquez PA., Bonilla I., Puente N., Ramos A., Marsicano G., Grandes P., Mato S., Egaña-Huguet J., Soria Gómez E.

**P1.16**

CB1 RECEPTORS LOCATED ON HIPPOCAMPAL GLUTAMATERGIC NEURONS CONTROL OBESOGENIC DIET-INDUCED MEMORY IMPAIRMENT IN MALES MICE

Ducourneau EG., Jantakhin Y., Oliveira da Cruz JF., Artinian J., Bakoyiannis I., Busquets-Garcia A., Helbling JC., Matias I., Alfós S., Trifilieff P., Marsicano G., Ferreira G.

**P2.1**

DIFFERENTIAL INVOLVEMENT OF CB1 RECEPTORS IN OBESOGENIC DIET-INDUCED MEMORY DEFICITS IN MALE AND FEMALE MICE

N'diaye M., Ducourneau E., Bakogiannis I., Fermigier A., Potier M., Lafenetre P., Bellocchio L., Marsicano G., Ferreira G.

**P2.2**

ROLE OF CANNABINOID RECEPTORS IN BONE GROWTH: RESPONSE TO HORMONAL THERAPY IN A PAPP-2 DEFICIENT MOUSE MODEL OF GROWTH IMPAIRMENT

Fernández-Arjona MM., Rubio L., López-Gambero AJ., Rivera P., Vargas A., Rodríguez de Fonseca F., Chowen JA., Argente J., Suárez J.

**P2.3**

MITOCHONDRIA-ASSOCIATED CANNABINOID RECEPTORS TYPE 1: UNEXPECTED NEW PARTNERS FOR INSULIN SECRETION

Allard C., Zizzari P., Bermúdez-Silva FJ., Clark S., Dupuy N., Eraso A., Zaimia N., Ravier M., Magnan C., Ley-Ngardigal S., Rossignol R., Bellocchio L., Marsicano G., Quarta C., Cota D.

**P2.4**

CB1 RECEPTORS AND EXERCISE: ARE VENTRAL TEGMENTAL AREA DOPAMINERGIC NEURONS NECESSARY FOR WHEEL RUNNING MOTIVATION?

Fayad R., Cathala A., Hurel I., Revest JM., Marsicano G., Chaouloff F.

**P2.5**

THE NEW POTENT CANNABINOID  $\Delta^9$ -TETRAHYDROCANNABIPHOROL: GETTING "HIGHER"... IN PAIN CONTROL

Rosmara I., Zottola Antonio P., Carmela B., Fabiana R., Cannazza G., Maione S., Marsicano G., Bellocchio L., Luongo I.

**P2.6**

LH-21, A CB1 ANTAGONIST, REDUCES HEPATOTOXIC DAMAGE PRODUCED BY PARACETAMOL OVERDOSE IN A MICE MODEL

Rodríguez-Pozo M., Gavito A.L., Jagerovic N., Rodríguez de Fonseca F., Suárez J., Rivera P., Decara J.

**P2.7**

PHARMACEUTICAL BLOCKADE OF THE CANNABINOID TYPE 1 RECEPTOR IMPACTS CYTOKINE SIGNALING IN BETA CELLS TO AMELIORATE INSULITIS IN TYPE 1 DIABETES

Wreven E., Pacini A., Ruiz de Adana MS., Gmyr V., Kerr-Conte J., Egan JM., Pattou F., Gonzalez Mariscal I.

**P2.8**

ANALGESIC EFFECT OF A THC:CBD COMBINATION IN NEWBORN RATS

Álvarez-Callejo L., Silva L., Martínez M., Romero A., de Hoz-Rivera M., Martínez-Orgado J.

**P2.9**

CANNABIDIOL ATTENUATES NEUROINFLAMMATION AND OXIDATIVE STRESS IN LEIGH SYNDROME

De Donato MH., Luna-Sánchez M., Urpi A., Gómez-Pallarès M., Alberola M., Van der Walt G., Sanz E., Quintana A., Puighermanal E.

**P2.10**

TIME-COURSE OF ALTERATIONS IN THE ENDOCANNABINOID SYSTEM ALONG THE BASAL GANGLIA INDUCED BY ALPHA-SYNUCLEIN AGGREGATION IN NIGRAL DOPAMINERGIC NEURONS

Zubelzu M., Bidgood R., Gómez-Urquijo SM., Lucarini A., Aristieta A., Antonazzo M., Dehay B., Morera-Herrerías T.

**P2.11**

CB1-ANTAGONISM/CB2-AGONISM INCREASES THE NEUROPROTECTIVE EFFECT OF MELATONIN AFTER NEONATAL HYPOXIA-ISCHEMIA

Beldarrain G., Chillida M., Alart JA., Álvarez FJ., Hilario E., Álvarez A., Bouzier-Sore AK., Alonso-Alconada D.

**P2.12**

$\Delta^9$ -TETRAHYDROCANNABINOL AND CANNABIDIOL MODULATE HIPPOCAMPAL GLUTAMATE DYNAMICS IN AN ANIMAL MODEL OF ALZHEIMER'S DISEASE

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CANNABIDIOL BEHAVES AS A NEGATIVE ALLOSTERIC MODULATOR OF THE ADENOSINE A2A RECEPTOR

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DIFFERENTIAL BINDING MODES TO CANNABINOID CB2 RECEPTORS: THERAPEUTIC POTENTIAL OF DIFFERENT DRUGS

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THE ROLE OF CB1R-OX1R HETEROMERIC COMPLEX IN THE ALZHEIMER'S DISEASE

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THE EXPRESSION OF THE ENDOCANNABINOID RECEPTORS CB2 AND GPR55 IS HIGHLY INCREASED DURING THE PROGRESSION OF ALZHEIMER'S DISEASE IN APPNL-G-F KNOCK-IN MICE

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EFFECT OF CHRONIC THC ADMINISTRATION ON CB1, CB2 AND 5HT2A RECEPTORS mRNA EXPRESSION IN MICE UTERUS AND OVARY

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