

Curriculum vitae:

Raúl López-Arnau

Personal information

Date of birth: 28-06-1986
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Education

2011-2014 **PhD in Neuropharmacology**. PhD program: Drug Research, Development and Control. University of Barcelona

2010-2011 **Master Degree in Drug Research, Development and Control**. University of Barcelona

2004-2010 **Bachelor Degree in Chemistry**. University of Barcelona

Publications

A) Scientific papers:

López-Arnau R, Buenrostro-Jáuregui M, Camarasa J, Pubill D, Escubedo E. (2018). **Effect of the combination of mephedrone plus ethanol on serotonin and dopamine release in the nucleus accumbens and medial prefrontal cortex of awake rats**. *Naunyn Schmiedebergs Arch Pharmacol*. **391**(3):247-254.

Cantacops L, Alfonso-Loeches S, Moscoso-Castro M, Cuitavi J, Gracia-Rubio I, López-Arnau R, Escubedo E, Guerri C, Valverde O. (2017) **Maternal alcohol binge drinking induces persistent neuroinflammation associated with myelin damage and behavioural dysfunctions in offspring mice**. *Neuropharmacology*. **123**:368-384

López-Arnau R, Luján MA, Duart-Castells L, Pubill D, Camarasa J, Valverde O, Escubedo E (2017). **Exposure of adolescent mice to 3,4-methylenedioxypyrovalerone increases the psychostimulant, rewarding and reinforcing effects of cocaine in adulthood**. *British Journal of Pharmacology*. **174**: 1161-1173.

López-Arnau R, Buenrostro-Jáuregui M, Muñoz-Villegas P, Rodríguez-Morató J, Ciudad-Roberts A, Duart L, Camarasa J, De la Torre R, Pubill D, Escubedo E (2017). **The combination of MDPV and ethanol results in decreased cathinone and increased alcohol levels. Study of such pharmacological interaction**. *Progress in Neuro-Psychopharmacology and Biological Psychiatry*. **76**: 19-28.

Buenrostro-Jáuregui M, Ciudad-Roberts A, Moreno-Rius J, Muñoz-Villegas P, López-Arnau R, Pubill D, Escubedo E, Camarasa J (2016). **Changes in CREB and deltaFosB are associated with the behavioural sensitization induced by methylenedioxypyrovalerone**. *Journal of Psychopharmacology*. **30**: 707-12.

Novellas J, López-Arnau R, Carbó ML, Pubill D, Camarasa J, Escubedo E. (2015). **Concentrations of MDPV in rat striatum correlate with the psychostimulant effect.** *Journal of Psychopharmacology*, **29**: 1209-18.

López-Arnau R, Martínez-Clemente J, Rodrigo T, Pubill D, Camarasa J, Escubedo E (2015). **Neuronal changes and oxidative stress in adolescent rats after repeated exposure to mephedrone.** *Toxicology and Applied Pharmacology*. **286**:27-35.

Rubio M, López-Arnau R, Pubill D, Escubedo E, Camarasa J (2015). **Serotonin is involved in the psychostimulant and hypothermic effect of 4-methylamphetamine in rats.** *Neuroscience Letters*. **590**:68-73.

López-Arnau R, Martínez-Clemente J, Pubill D, Escubedo E, Camarasa J (2014). **Serotonergic impairment and memory deficits in adolescent rats after binge exposure of methylone.** *Journal of Psychopharmacology*. **28**:1053-63.

Martínez-Clemente J, López-Arnau R, Escubedo E, Pubill D, Camarasa J (2014). **Dose and time-dependent selective neurotoxicity induced by mephedrone in mice.** *Plos One*. **9**: e99002.

López-Arnau R, Martínez-Clemente J, Pubill D, Camarasa J, Escubedo E (2014). **Repeated doses of methylone, a new drug of abuse, induce changes in serotonin and dopamine systems in the mouse.** *Psychopharmacology (Berl)*. **231**: 3119-29.

López-Arnau R, Martínez-Clemente J, Carbó M, Escubedo E, Pubill D, Camarasa J (2013). **An integrated pharmacokinetic and pharmacodynamic study of a new drug of abuse, methylone, a synthetic cathinone sold as " bath salts".** *Progress in Neuro-Psychopharmacology and Biological Psychiatry*. **45**: 64-72.

Martínez-Clemente J, López-Arnau R, Carbó M, Escubedo E, Pubill D, Camarasa J (2013). **Mephedrone pharmacokinetics after intravenous and oral administration in rats: relation to pharmacodynamics.** *Psychopharmacology (Berl)*. **229**: 295-306.

López-Arnau R, Martínez-Clemente J, Pubill D, Escubedo E, Camarasa J (2012). **Comparative neuropharmacology of three psychostimulant cathinone derivatives: butylone, mephedrone and methylone.** *British Journal of Pharmacology*. **167**: 407-20.

B) Book chapters:

Camarasa J, Escubedo E, Pubill D, López-Arnau R (2016). *La Huella del Placer. De la regulación a la adicción.* En J. Juárez. **Derivados anfetamínicos.** México, D.F. (in press).

López-Arnau R, Buenrostro-Jáuregui M (2016). *La Huella del Placer. De la regulación a la adicción.* En J. Juárez. **El Lado Oscuro del Placer: Neurotoxicidad de las Drogas de Abuso.** México, D.F. (in press).

Professional experience

A) Industry:

2010 **I+D Department** – design, synthesis and characterization of APIs – *Unión Químico Farmacéutica (UQUIFA)*. (Sant Celoni, Barcelona, España)

2009 **Analytical laboratory (practice)** – Quality control; wastewater - *Consorci per la Defensa del riu Besòs*. (Granollers, Barcelona, España)

B) University:

B1) Research:

2016 - nowadays. **Postdoctoral researcher**, *University of Barcelona*. (Barcelona, España)

2015-2016. Postdoctoral period, **researcher** associated to the project SAF2013-46135-P: Influence of alcohol in the psychostimulant, neurotoxic and reinforcing effects of a new drug of abuse, mephedrone, in adolescent rats. *Department of Pharmacology, Toxicology and Therapeutic Chemistry. Faculty of Pharmacy. University of Barcelona* (Barcelona, España)

2011- 2014. **PhD student** associated to the project SGR 14-1081 – Neuropharmacological study of amphetamine derivatives– *Department of Pharmacology, Toxicology and Therapeutic Chemistry. Faculty of Pharmacy. University of Barcelona* (Barcelona, España)

2010-2011 **Molecular analysis Department** – sample analysis using IR - *Serveis Científics i Tecnològics de la Universitat de Barcelona (CCiTUB)*. (Barcelona, España)

B2) Teaching:

June 2017 – January 2018. **Graduate Supervisor**. Student: Vanessa Mosquera Entrena. Title: Efectes ex vivo de les noves catinones sintètiques sobre la regulació i la funcionalitat del transportador de dopamina. *University of Barcelona*. (Barcelona, España)

2016 - nowadays. **Postdoctoral researcher and professor**. Subjects: General Pharmacology, Pharmacology and Therapeutics I, Pharmacology and Therapeutics II and Pharmacognosy. Faculty of Pharmacy. *University of Barcelona*. (Barcelona, España)

January 2014-December 2014. Member of the team developing the teaching project **MOOC** (*Massive Open Online course*) "**Principles of Pharmacology and Therapeutics**" (Ref. 2013 MOOCS00058) AGAUR (Agencia de Gestión de Ayudas Universitarias y de Investigación). Departamento de Economía y Conocimiento. Generalidad de Cataluña

Languages

Spanish (native)

Catalan (native)

English (Advance)

National and International stays and collaborations

Centre School of English, Dublin, Ireland. (August 2016). (intensive english course)

Parc de Recerca Biomèdica de Barcelona (PRBB), Barcelona, Spain (September 2015-January 2016). Supervisor: Dra. Olga Valverde (Self-administration in mice).

Università degli Studi di Cagliari, Cagliari, Italy. (June-August 2014). Supervisor/s: Dr. G. DiChiara and Dr. Danielle Lecca. (Self-administration in rats). *FENS* fellowship (*Federation of European Neurosciences Societies*).

Karolinska Institutet – Pronexus Analytical, Stockholm, Sweden. (February-June 2014). Supervisor: Dr. Jan Kehr (Microdialysis). University of Barcelona fellowship.

Liverpool School of English, Liverpool, U.K. (August 2012). (intensive english course)

Posters and oral presentations

A) Posters

Luján, M.A., López-Arnau, R., Duart-Castells, L., Pubill, D., Camarasa, J., Valverde, O., Escubedo, E. **Early exposure of mice to MDPV increases the vulnerability to cocaine in adulthood.** *XXXVIII Congreso Sociedad Española de Farmacología*. Barcelona, Spain (2017)

Muñoz-Villegas, P.; Buenrostro-Jáuregui, M.; Moreno-Rius, J.; Gutiérrez, A.; Ciudad-Roberts, A.; López-Arnau, R.; Camarasa, J.; Pubill, D.; Escubedo, E. **Cocaine-like properties of a new drug of abuse: MDPV.** *16 Congreso de la Sociedad Española de Neurociencias*. Granada, Spain (2015)

Buenrostro-Jáuregui, M.; López-Arnau, R.; Ciudad-Roberts, A.; Moreno-Rius, J.; Pubill, D.; Camarasa, J.; Escubedo, E. **Psychostimulant properties and behavioral sensitization following MDPV exposure in rodents.** *36 Congreso de la Sociedad Española de Farmacología*. Valencia, Spain (2015)

López-Arnau, R.; Martínez-Clemente, J.; Pubill, D.; Camarasa, J.; Escubedo, E. **Neurochemical, histological and behavioral changes after methylone exposure in rats.** *9th FENS Forum of Neuroscience*. Milan, Italy (2014)

Martínez-Clemente, J.; López-Arnau, R.; Pubill, D.; Escubedo, E.; Camarasa, J. **Repeated administration of mephedrone induces hyperthermia and serotonergic impairment in rat brain.** *9th FENS Forum of Neuroscience*. Milan, Italy (2014)

López-Arnau, R.; Martínez-Clemente, J.; Carbó, M.; Pubill, D.; Camarasa, J.; Escubedo, E. **Pharmacokinetic analysis of mephedrone and methylone after intravenous and oral administration in rats.** *6th European Congress of Pharmacology*. Granada, Spain (2012)

Martínez-Clemente, J.; López-Arnau, R.; Pubill, D.; Escubedo, E.; Camarasa, J. **The neuropharmacology of psychostimulant cathinone derivatives used as drugs of abuse.** *6th European Congress of Pharmacology*. Granada, Spain (2012)

Martínez-Clemente, J.; López-Arnau, R.; Pubill, D.; Escubedo, E.; Camarasa, J. **Neurochemical profile of new beta-keto amphetamines: mephedrone and butylone.** *XXXIII SEF Congress*. Málaga, Spain (2011)

B) Oral presentations

Pharmacokinetic and Pharmacodynamic of cathinones. *Acadèmia de les Ciències Mèdiques i de la Salut de Catalunya i de Balears*. Barcelona, Spain (2012)

Technical and specific skills

Analytical techniques:

Liquid and Gas chromatography (LC, GC) and high pressure liquid chromatography (HPLC) coupled to mass spectrometry (MS, MS/MS)

Thin Layer chromatography (TLC)

Infrared and UV-Vis spectrometry (IR, UV-Vis)

Nuclear magnetic resonance (NMR- H^1 , NMR- C^{13} , COSY, NOSY, NMR- H^1 -2D,...)

Biological techniques (*in vitro*):

Sinaptosomal, synaptic vesicles and membrane preparations

Western Blot

Immunohistochemistry

Radioligand binding assays and uptake experiments

***In vivo* techniques (rats and mice):**

Basic and advanced techniques (subcutaneous, intraperitoneal, intravenous and oral administration, blood extraction, etc...) jugular vein catheterization, brain dissection,...(Accreditation as experimenting staff in experimental animal models)

Behavioral tests (*Morris Water Maze, conditioned place preference, elevated plus-maze, locomotor activity, forced swimming test, suspension tail test*, among others)

Stereotaxic surgery and microdialysis

Intravenous self-administration in rodents

Softwares

Microsoft Office (Excel, Word and PowerPoint)

Statistical analysis (GraphPad Prism, InStat and InVivoStat)

Database (Pubmed, Chemical Abstracts Services, SciFinder Scholar, ISI Web, Reaxys,...)

Behavioral testing (Smart v.3.0)

Other techniques:

Design and synthesis of organic compounds and its characterization, especially amphetamine-like compounds.