

## Curriculum Vitae

<b>NAME</b> Sabatino Maione	<b>POSITION TITLE</b> MD, PhD, Professor		
<b>INSTITUTION AND LOCATION</b>	<b>DEGREE (if applicable)</b>	<b>YEAR(s)</b>	<b>FIELD OF STUDY</b>
Centre for Molecular Neurobiology, University of Naples Federico II, Italy	Post-Doc	1996-1999	Neuropharmacology
Second University of Naples, Italy	Specialization	1996	Pharmacology
School of Pharmacy, London	PhD	1993	Pharmacology
University of Naples Federico II, Italy	Degree	1986	Medicine

### A. Positions and Honors.

Professor of Pharmacology - School of Medicine, University of Campania L. Vanvitelli, Naples, Italy (2000);  
Head of the Research Group in Pain Neuropharmacology and Pathophysiology - Dpt of Experimental Medicine, University of Campania L. Vanvitelli, Naples, Italy (since 1997).

### B. Selected peer-reviewed publications (in chronological order).

List of publications (2008 up to now).

F. Guida, L. Luongo, S. Boccella, M.E. Giordano, R. Romano, G. Bellini, I. Manzo, A. Furiano, A. Rizzo, R. Imperatore, F.A. Iannotti, E. D' Aniello, F. Piscitelli, F.sca Rossi, L. Cristino, V. Di Marzo, V de Novellis and S. Maione Palmitoylethanolamide induces microglia changes associated with increased migration and phagocytic activity: involvement of the CB2 receptor. *Scientific Report*, 2017 *in press*

Luongo L, Starowicz K, Maione S, Di Marzo V. Allodynia Lowering Induced by Cannabinoids and Endocannabinoids (ALICE). *Pharmacol Res.* 2017;119:272-277

Bellini G, Torella M, Manzo I, Tortora C, Luongo L, Punzo F, Colacurci N, Nobili B, Maione S, Rossi F. PKC $\beta$ II-mediated cross-talk of TRPV1/CB2 modulates the glucocorticoid-induced osteoclast overactivity. *Pharmacol Res.* 2017;115:267-274.

De Gregorio D, Posa L, Ochoa-Sanchez R, McLaughlin R, Maione S, Comai S, Gobbi G. The hallucinogen d-lysergic diethylamide (LSD) decreases dopamine firing activity through 5-HT<sub>1A</sub>, D<sub>2</sub> and TAAR1 receptors. *Pharmacol Res.* 2016;113:81-91.

Palazzo E, Marabese I, Luongo L, Guida F, de Novellis V, Maione S. Nociception modulation by supraspinal group III metabotropic glutamate receptors. *J Neurochem.* 2016,1.

Palazzo E, Marabese I, de Novellis V, Rossi F, Maione S. Metabotropic Glutamate Receptor 7: From

Synaptic Function to Therapeutic Implications. *Curr Neuropharmacol*. 2016;14(5):504-13

Rossi F, Bellini G, Luongo L, Manzo I, Tolone S, Tortora C, Bernardo ME, Grandone A, Conforti A, Docimo L, Nobili B, Perrone L, Locatelli F, Maione S, Del Giudice EM. Cannabinoid Receptor 2 as Antiobesity Target: Inflammation, Fat Storage, and Browning Modulation. *J Clin Endocrinol Metab*. 2016, 101(9):3469-78.

Palazzo E, Luongo L, Guida F, Marabese I, Romano R, Iannotta M, Rossi F, D'Aniello A, Stella L, Marmo F, Usiello A, de Bartolomeis A, Maione S, de Novellis V. D-Aspartate drinking solution alleviates pain and cognitive impairment in neuropathic mice. *Amino Acids*. 2016 ;48(7):1553-67.

Moriello AS, Luongo L, Guida F, Christodoulou MS, Perdicchia D, Maione S, Passarella D, Marzo VD, Petrocellis L. Chalcone Derivatives Activate and Desensitize the Transient Receptor Potential Ankyrin 1 Cation Channel, Subfamily A, Member 1 TRPA1 Ion Channel: Structure-Activity Relationships in vitro and Anti-Nociceptive and Anti-inflammatory Activity in vivo. *CNS Neurol Disord Drug Targets*. 2016;15(8):987-994

Punzo D, Errico F, Cristino L, Sacchi S, Keller S, Belardo C, Luongo L, Nuzzo T, Imperatore R, Florio E, De Novellis V, Affinito O, Migliarini S, Maddaloni G, Sisalli MJ, Pasqualetti M, Pollegioni L, Maione S, Chiariotti L, Usiello A. Age-Related Changes in D-Aspartate Oxidase Promoter Methylation Control Extracellular D-Aspartate Levels and Prevent Precocious Cell Death during Brain Aging. *J Neurosci*. 2016;36(10):3064-78

Aiello F, Badolato M, Pessina F, Sticozzi C, Maestrini V, Aldinucci C, Luongo L, Guida F, Ligresti A, Artese A, Allarà M, Costa G, Frosini M, Schiano Moriello A, De Petrocellis L, Valacchi G, Alcaro S, Maione S, Di Marzo V, Corelli F, Brizzi A. Design and Synthesis of New Transient Receptor Potential Vanilloid Type-1 (TRPV1) Channel Modulators: Identification, Molecular Modeling Analysis, and Pharmacological Characterization of the N-(4-Hydroxy-3-methoxybenzyl)-4-(thiophen-2-yl)butanamide, a Small Molecule Endowed with Agonist TRPV1 Activity and Protective Effects against Oxidative Stress. *ACS Chem Neurosci*. 2016 ;7(6):737-4

Brindisi M, Maramai S, Gemma S, Brogi S, Grillo A, Di Cesare Mannelli L, Gabellieri E, Lamponi S, Saponara S, Gorelli B, Tedesco D, Bonfiglio T, Landry C, Jung KM, Armirotti A, Luongo L, Ligresti A, Piscitelli F, Bertucci C, Dehouck MP, Campiani G, Maione S, Ghelardini C, Pittaluga A, Piomelli D, Di Marzo V, Butini S. Development and Pharmacological Characterization of Selective Blockers of 2-Arachidonoyl Glycerol Degradation with Efficacy in Rodent Models of Multiple Sclerosis and Pain. *J Med Chem*. 2016;59(6):2612-32

Peduto A, Krauth V, Collarile S, Dehm F, Ambruosi M, Belardo C, Guida F, Massa A, Esposito V, Maione S, de Rosa M, Werz O, Filosa R. Exploring the role of chloro and methyl substitutions in 2-phenylthiomethyl-benzoindeole derivatives for 5-LOX enzyme inhibition. *Eur J Med Chem*. 2016;108:466-75.

*Eur J Med Chem*. 2016 Jan 27;108:466-75. dolini G, Grandone A, Torella M, Miraglia del Giudice E, Nobili B, Perrone L, Maione S, Rossi F. The Cannabinoid Receptor 2 Q63R Variant Modulates the Relationship between Childhood Obesity and Age at Menarche. *PLoS One*. 2015;10(10):e0140142

Rinaldi B, Guida F, Furiano A, Donniacuo M, Luongo L, Gritti G, Urbanek K, Messina G, Maione S, Rossi F, de Novellis V. Effect of Prolonged Moderate Exercise on the Changes of Nonneuronal Cells in Early Myocardial Infarction. *Neural Plast*. 2015; 2015:265967

Guida F, Luongo L, Marmo F, Romano R, Iannotta M, Napolitano F, Belardo C, Marabese I, D'Aniello A, De Gregorio D, Rossi F, Piscitelli F, Lattanzi R, de Bartolomeis A, Usiello A, Di Marzo V, de Novellis V, Maione S. Palmitoylethanolamide reduces pain-related behaviors and restores glutamatergic synapses homeostasis

in the medial prefrontal cortex of neuropathic mice. *Mol Brain*. 2015 12;8:47

Imperatore R, Morello G, Luongo L, Taschler U, Romano R, De Gregorio D, Belardo C, Maione S, Di Marzo V, Cristino L. Genetic deletion of monoacylglycerol lipase leads to impaired cannabinoid receptor CB1 R signaling and anxiety-like behavior. *J Neurochem*. 2015 (in press)

Rossi F, Bellini G, Tortora C, Bernardo ME, Luongo L, Conforti A, Starc N, Manzo I, Nobili B, Locatelli F, Maione S. CB2 and TRPV1 receptors oppositely modulate in vitro human osteoblast activity. *Pharmacol Res*. 2015 99:194-201

Sagheddu C, Aroni S, De Felice M, Lecca S, Luchicchi A, Melis M, Muntoni AL, Romano R, Palazzo E, Guida F, Maione S, Pistis M. Enhanced serotonin and mesolimbic dopamine transmissions in a rat model of neuropathic pain. *Neuropharmacology*. 2015;97:383-93

Cristino L, Luongo L, Imperatore R, Boccella S, Becker T, Morello G, Piscitelli F, Busetto G, Maione S, Di Marzo V. Orexin-A and Endocannabinoid Activation of the Descending Antinociceptive Pathway Underlies Altered Pain Perception in Leptin Signaling Deficiency. *Neuropsychopharmacol*. 2015 (in press)

Di Cesare Mannelli L, Pacini A, Corti F, Boccella S, Luongo L, Esposito E, Cuzzocrea S, Maione S, Calignano A, Ghelardini C. Antineuropathic profile of N-palmitoylethanolamine in a rat model of oxaliplatin-induced neurotoxicity. *PLoS One*. 2015 3;10 6

Cristino L, Luongo L, Squillace M, Paolone G, Mango D, Piccinin S, Zianni E, Imperatore R, Iannotta M, Longo F, Errico F, Vescovi AL, Morari M, Maione S, Gardoni F, Nisticò R, Usiello A. d-Aspartate oxidase influences glutamatergic system homeostasis in mammalian brain. *Neurobiol Aging*. 2015 36(5):1890-902

Palazzo E, Romano R, Luongo L, Boccella S, De Gregorio D, Giordano ME, Rossi F, Marabese I, Scafuro MA, de Novellis V, Maione S. MMPIP, an mGluR7-selective negative allosteric modulator, alleviates pain and normalizes affective and cognitive behavior in neuropathic mice. *Pain*. 2015 156 (6):1060-73.

Little JW, Ford A, Symons-Liguori AM, Chen Z, Janes K, Doyle T, Xie J, Luongo L, Tosh DK, Maione S, Bannister K, Dickenson AH, Vanderah TW, Porreca F, Jacobson KA, Salvemini D. Endogenous adenosine A3 receptor activation selectively alleviates persistent pain states. *Brain*. 2015;138: 28-35

Petrelli R, Torquati I, Kachler S, Luongo L, Maione S, Franchetti P, Grifantini M, Novellino E, Lavecchia A, Klotz KN, Cappellacci L. J 5'-C-Ethyl-tetrazolyl-N(6)-Substituted Adenosine and 2-Chloro-adenosine Derivatives as Highly Potent Dual Acting A1 Adenosine Receptor Agonists and A3 Adenosine Receptor Antagonists. *Med Chem*. 2015 58(5):2560-6.

Guida F, Lattanzi R, Boccella S, Maftai D, Romano R, Marconi V, Balboni G, Salvadori S, Scafuro MA, de Novellis V, Negri L, Maione S, Luongo L. PC1, a non-peptide PKR1-preferring antagonist, reduces pain behavior and spinal neuronal sensitization in neuropathic mice. *J. Pharmacol Res*. 2015;91:36-46.

Maione S, Radanova L, De Gregorio D, Luongo L, De Petrocellis L, Di Marzo V, Imming P. Effects of metabolites of the analgesic agent dipyrone (metamizol) on rostral ventromedial medulla cell activity in mice. *Eur J Pharmacol*. 2015 748:115-22

Boccella S, Vacca V, Errico F, Marinelli S, Squillace M, Guida F, Di Maio A, Vitucci D, Palazzo E, De Novellis V, Maione S, Pavone F, Usiello A. D-aspartate modulates nociceptive-specific neuron activity and pain threshold in inflammatory and neuropathic pain condition in mice. *Biomed Res Int*. 2015, 2015:905906

Bellini G, Olivieri AN, Grandone A, Alessio M, Gicchino MF, Nobili B, Perrone L, Maione S, Miraglia Del Giudice E, Rossi F Association between cannabinoid receptor type 2 Q63R variant and oligo/polyarticular

juvenile idiopathic arthritis. *J. Scand J Rheumatol.* 2015 44(4):284-7.

Palazzo E, de Novellis V, Rossi F, Maione S. Supraspinal metabotropic glutamate receptor subtype 8: a switch to turn off pain. *Amino Acid* 2014 39(3):444-54

Maffei D, Marconi V, Florenzano F, Giancotti LA, Castelli M, Moretti S, Borsani E, Rodella LF, Balboni G, Luongo L, Maione S, Sacerdote P, Negri L, Lattanzi R. Controlling the activation of the Bv8/prokineticin system reduces neuroinflammation and abolishes thermal and tactile hyperalgesia in neuropathic animals. *J. Br J Pharmacol.* 2014;171(21):4850-65

Palazzo E, Marabese I, de Novellis V, Rossi F, Maione S. Supraspinal metabotropic glutamate receptors: a target for pain relief and beyond. *J. Eur J Neurosci.* 2014 39(3):444-54.

Endocannabinoids and neuropathic pain: focus on neuron-glia and endocannabinoid-neurotrophin interactions. Luongo L, Maione S, Di Marzo V. *J. Eur J Neurosci.* 2014;39(3):401-8

Rossi F, Marabese I, De Chiaro M, Boccella S, Luongo L, Guida F, De Gregorio D, Giordano C, de Novellis V, Palazzo E, Maione S. Dorsal striatum metabotropic glutamate receptor 8 affects nocifensive responses and rostral ventromedial medulla cell activity in neuropathic pain conditions. *J Neurophysiol.* 2013

Palazzo E, Marabese I, Luongo L, Boccella S, Bellini G, Giordano ME, Rossi F, Scafuro M, Novellis Vd, Maione S. Effects of a metabotropic glutamate receptor subtype 7 negative allosteric modulator in the periaqueductal grey on pain responses and rostral ventromedial medulla cell activity in rat. *Mol Pain.* 2013; 9:44.

Rossi F, Bernardo ME, Bellini G, Luongo L, Conforti A, Manzo I, Guida F, Cristino L, Imperatore R, Petrosino S, Nobili B, Di Marzo V, Locatelli F, Maione S. The cannabinoid receptor type 2 as mediator of mesenchymal stromal cell immunosuppressive properties. *PLoS One.* 2013 ;8(11):80022.

De Scalzi F, Ulivi V, Cancedda R, Piscitelli F, Luongo L, Guida F, Gatta L, Maione S, Di Marzo V. Platelet Rich Plasma exerts antinociceptive activity by a peripheral endocannabinoid-related mechanism. *Tissue Eng Part A.* 2013 9(19-20):2120-9.

Luongo L, Guida F, Boccella S, Bellini G, Gatta L, Rossi F, de Novellis V, Maione S. Palmitoylethanolamide reduces formalin-induced neuropathic-like behaviour through spinal glial/microglial phenotypical changes in mice. *CNS Neurol Disord Drug Targets.* 2013;12(1):45-54.

Luongo L, Petrelli R, Gatta L, Giordano C, Guida F, Vita P, Franchetti P, Grifantini M, de Novellis V, Cappellacci L, Maione S. 5'-Chloro-5'-deoxy-(±)-ENBA, a potent and selective adenosine A(1) receptor agonist, alleviates neuropathic pain in mice through functional glial and microglial changes without affecting motor or cardiovascular functions. *Molecules.* 2012;17(12):13712-26.

Rossi F, Bellini G, Luongo L, Mancusi S, Torella M, Tortora C, Manzo I, Guida F, Nobili B, de Novellis V, Maione S. The 17- $\beta$ -oestradiol inhibits osteoclast activity by increasing the cannabinoid CB2 receptor expression. *Pharmacol Res.* 2013 ;68(1):7-15.

Guida F, Luongo L, Aviello G, Palazzo E, De Chiaro M, Gatta L, Boccella S, Marabese I, Zjawiony JK, Capasso R, Izzo AA, de Novellis V, Maione S. Salvinorin A reduces mechanical allodynia and spinal neuronal hyperexcitability induced by peripheral formalin injection. *Mol Pain.* 2012;8:60.

Luongo L, de Novellis V, Gatta L, Palazzo E, Vita D, Guida F, Giordano C, Siniscalco D, Marabese I, De Chiaro M, Boccella S, Rossi F, Maione S. Role of metabotropic glutamate receptor 1 in the basolateral amygdala-driven prefrontal cortical deactivation in inflammatory pain in the rat. *Neuropharmacology.* 2013;

66:317-29.

Luongo L, Costa B, D'Agostino B, Guida F, Comelli F, Gatta L, Matteis M, Sullo N, De Petrocellis L, de Novellis V, Maione S, Di Marzo V. Palvanil, a non-pungent capsaicin analogue, inhibits inflammatory and neuropathic pain with little effects on bronchopulmonary function and body temperature. *Pharmacol Res.* 2012;66(3):243-50.

Palazzo E, Luongo L, Bellini G, Guida F, Marabese I, Boccella S, Rossi F, Maione S, de Novellis V. Changes in Cannabinoid Receptor Subtype 1 Activity and Interaction with Metabotropic Glutamate Subtype 5 Receptors in the Periaqueductal Gray-Rostral Ventromedial Medulla Pathway in a Rodent Neuropathic Pain Model. *CNS Neurol Disord Drug Targets.* 2012 11(2):148-61.

Rossi F, Bellini G, Tolone C, Luongo L, Mancusi S, Papparella A, Sturgeon C, Fasano A, Nobili B, Perrone L, Maione S, Miraglia Del Giudice E. The Cannabinoid Receptor type 2 Q63R variant increases the risk of celiac disease: Implication for a novel molecular biomarker and future therapeutic intervention. *Pharmacol Res.* 2012; 66(1):88-94

Mugnaini C, Nocerino S, Pedani V, Pasquini S, Tafi A, De Chiaro M, Bellucci L, Valoti M, Guida F, Luongo L, Dragoni S, Ligresti A, Rosenberg A, Bolognini D, Cascio MG, Pertwee RG, Moaddel R, Maione S, Di Marzo V, Corelli F. Investigations on the 4-Quinolone-3-Carboxylic Acid Motif Part 5: Modulation of the Physicochemical Profile of a Set of Potent and Selective Cannabinoid-2 Receptor Ligands through a Bioisosteric Approach. *Chem Med Chem.* 2012.

de Novellis V, Luongo L, Guida F, Cristino L, Palazzo E, Russo R, Marabese I, D'Agostino G, Calignano A, Rossi F, Di Marzo V, Maione S. Effects of intra-ventrolateral periaqueductal grey palmitoylethanolamide on thermoceptive threshold and rostral ventromedial medulla cell activity. *Eur J Pharmacol.* 2012 ;676(1-3):41-50.

Giordano C, Cristino L, Luongo L, Siniscalco D, Petrosino S, Fabiana P, Marabese I, Gatta L, Rossi F, Imperatore R, Palazzo E, de Novellis V, Di Marzo V and Maione S. TRPV1-dependent and -independent alterations in the limbic cortex of neuropathic mice: impact on glial caspases and pain perception, 2011 *Cerebral Cortex*, 22(11):2495-518

Lattanzi R, Sacerdote P, Franchi S, Canestrelli M, Miele R, Barra D, Visentin S, DeNuccio C, Porreca F, De Felice M, Guida F, Luongo L, de Novellis V, Maione S, Negri L. Pharmacological activity of a Bv8 analogue modified in position 24. *Br J Pharmacol.* 2012;166(3):950-63.

Palazzo E, Luongo L, de Novellis V, Rossi F, Marabese I, Maione S. Transient receptor potential vanilloid type 1 and pain development. *Curr Opin Pharmacol.* 2011

Palazzo E, Guida F, Gatta L, Luongo L, Boccella S, Bellini G, Marabese I, de Novellis V, Rossi F, Maione S. EP1 receptor within the ventrolateral periaqueductal grey controls thermonociception and rostral ventromedial medulla cell activity in healthy and neuropathic rat. *Mol Pain.* 2011 ;7(1):82.

Pasquini S, De Rosa M, Pedani V, Mugnaini C, Guida F, Luongo L, De Chiaro M, Maione S, Dragoni S, Frosini M, Ligresti A, Di Marzo V, Corelli F. Investigations on the 4-quinolone-3-carboxylic acid motif. 4. Identification of new potent and selective ligands for the cannabinoid type 2 receptor with diverse substitution patterns and antihyperalgesic effects in mice. *J Med Chem.* 2011;54(15):5444-53

Giordano C, Siniscalco D, Melisi D, Luongo L, Curcio A, Soukupova M, Palazzo E, Marabese I, De Chiaro M, Rimoli MG, Rossi F, Maione S, de Novellis V. The galactosylation of N( $\omega$ )-nitro-L-arginine enhances its anti-nocifensive or anti-allodynic effects by targeting glia in healthy and neuropathic mice. *Eur J Pharmacol.* 2011; 656(1-3):52-62.

de Novellis V, Vita D, Gatta L, Luongo L, Bellini G, De Chiaro M, Marabese I, Siniscalco D, Boccella S, Piscitelli F, Di Marzo V, Palazzo E, Rossi F, Maione S. The blockade of the transient receptor potential vanilloid type 1 and fatty acid amide hydrolase decreases symptoms and central sequelae in the medial prefrontal cortex of neuropathic rats. *Mol Pain*. 2011;7:7

Rossi Francesca, Bellini Giulia, Luongo Livio, Torella Marco, Mancusi Silvia, De Petrocellis Luciano, Petrosino Stefania, Siniscalco Dario, Colacurci Nicola, Perrotta Silverio, Nobili Bruno, Di Marzo Vincenzo, Maione Sabatino The endovanilloid/endocannabinoid system: a new potential target for osteoporosis therapy. *Bone* 2011;48(5):997-1007

Enza Palazzo, Ida Marabese, Marie Soukupova, Livio Luongo, Serena Boccella, Catia Giordano, Vito de Novellis, Francesca Rossi and Sabatino Maione. Metabotropic glutamate receptor subtype 8 in the amygdala modulates thermal threshold, neurotransmitter release and rostral ventromedial medulla cell activity in inflammatory pain. *The Journal of Neuroscience* 2011;31(12):4687-97

Palazzo E, Luongo L, de Novellis V, Berrino L, Rossi F, Maione S. Moving towards supraspinal TRPV1 receptors for chronic pain relief. *Mol Pain*. 2010; 6:66.

Pasquini S, Ligresti A, Mugnaini C, Semeraro T, Cicione L, De Rosa M, Guida F, Luongo L, De Chiaro M, Cascio MG, Bolognini D, Marini P, Pertwee R, Maione S, Di Marzo V, Corelli F. Investigations on the 4-quinolone-3-carboxylic acid motif. 3. Synthesis, structure-affinity relationships, and pharmacological characterization of 6-substituted 4-quinolone-3-carboxamides as highly selective cannabinoid-2 receptor ligands. *J Med Chem*. 2010;53(16):5915-28

Siniscalco D, Giordano C, Galderisi U, Luongo L, Alessio N, Di Bernardo G, de Novellis V, Rossi F, Maione S. Intra-brain microinjection of human mesenchymal stem cells decreases allodynia in neuropathic mice. *Cell Mol Life Sci*. 2010 ;67(4):655-69.

Luongo L, Palazzo E, Tambaro S, Giordano C, Gatta L, Scafuro MA, Rossi FS, Lazzari P, Pani L, de Novellis V, Malcangio M, Maione S. 1-(2',4'-dichlorophenyl)-6-methyl-N-cyclohexylamine-1,4-dihydroindeno[1,2-c]pyrazole-3-carboxamide, a novel CB2 agonist, alleviates neuropathic pain through functional microglial changes in mice. *Neurobiol Dis*. 2010;37(1):177-85

Palazzo E, Guida F, Migliozzi A, Gatta L, Marabese I, Luongo L, Rossi C, de Novellis V, Fernández-Sánchez E, Soukupova M, Zafra F, Maione S. Intraperiaqueductal gray glycine and D-serine exert dual effects on rostral ventromedial medulla ON- and OFF-cell activity and thermoceptive threshold in the rat. *J. Neurophysiol*. 2009;102(6):3169-79

Maione S, Starowicz K, Cristino L, Guida F, Palazzo E, Luongo L, Rossi F, Marabese I, de Novellis V and Di Marzo V. Functional interaction between TRPV1 and  $\mu$ -opioid receptors in descending antinociceptive pathway activates glutamate transmission and induces analgesia. *J. Neurophys.*, 2009 May;101(5):2411-2222

de Novellis V, Palazzo E, Rossi F, De Petrocellis L, Petrosino S, Guida F, Luongo L, Migliozzi A, Cristino L, Marabese I, Starowicz K, Di Marzo V, Maione S;. The analgesic effect of N-arachidonoyl-serotonin, a FAAH inhibitor and TRPV1 receptor antagonist, associated with changes in rostral ventromedial medulla and locus coeruleus cell activity in rats. *Neuropharmacology*. 2008, 55(7): 1105-13.

Siniscalco D, Giordano C, Fuccio C, Luongo L, Ferraraccio F, Rossi F, de Novellis V, Roth KA, Maione S. Involvement of subtype 1 metabotropic glutamate receptors in apoptosis and caspase-7 over-expression in spinal cord of neuropathic rats. *Pharmacol Res*. 2008, 57(3):223-33.

**C. Current Research Support.**

PRIN 2013

GW pharmaceutical founding

Epitech Group