biographical sketch

name: **Kunos, George** position title: **Scientific Director**

education *(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)*

 year

 institution and location degree conferred field of study

Semmelweis Medical University, Budapest, Hungary M.D. 1966 Medicine

McGill University, Montreal, Canada Ph.D. 1973 Pharmacology

**Professional experience:**

2000-present **Scientific Director,** Natl. Inst. Alcohol Abuse & Alcoholism (NIAAA), Natl. Inst. Health, Bethesda, MD

1992-2000 **Professor & Chairman,** Department of Pharmacology and Toxicology and Professor of

 Medicine; Medical College of Virginia Commonwealth University, Richmond, VA

1987-1992 **Chief,** Lab. Physiol. Pharmacol. Studies, NIAAA, NIH

1984-1988 **Professor** of Pharmacology and Medicine, McGill University, Montreal, Canada

1979-1983 **Assoc. Prof.** of Pharmacology, McGill University, Montreal, Canada

1974-1979 **Assist. Prof.** of Pharmacology, McGill University, Montreal, Canada

1971-1973 **Post-doctoral fellow** under Mark Nickerson, McGill Univ., Montreal, Canada

1966-1971 **Assist. Prof.,** 3d Dept of Medicine, Semmelweis Univ. Mentor: Matyas Szentivanyi

**Honors**: Gold Medalist, Semmelweis Medical University, 1966;

Chercheur‑Boursier Scholar of Quebec Medical Research Council, 1975‑81;

Elected Fellow, American Heart Association(F.A.H.A.)1993;

Elected Foreign Member, Hungarian Academy of Sciences, 1995;

Mechoulam award, Intl. Cannabinoid Res. Soc., 2005;

Hyman Zimmerman State-of-theArt Lecture, Amer. Assoc for Study of Liver Diseases, 2007;

Mark Nickerson Memorial Lecture Award, McGill University, 2007;

Arany Janos medal, Hungarian Academy of Sciences, 2008;

NIH Director’s Award, 2008.

Thomson-Reuter highly cited scientist, 2014-.

**Editorial Boards**: European Journal of Pharmacology, 1987-94; Brain Research Bulletin, 1995-2006; Neurochemistry International, Assoc. editor, 1997-; Prostaglandins and Other Lipid Mediators, 2003-; CNS Drug Reviews, 2006- Am J Physiol Endocr Metab. 2010-

**Current research interests:** biology of endogenous cannabinoids and their role in metabolic and cardiovascular regulation; neurobiology of appetite, including alcohol drinking behavior;

**Mentorship**: Trained 9 Ph.D. students and 32 post‑doctoral fellows.

**Service**: member, Applied Pharmacology Task Force, National Board of Medical Examiners (1996-1999)

**Professional societies**: American Heart Association (fellow); ASPET; Society for Neuroscience; ASBMB; Research Society on Alcoholism; Intl. Cannabinoid Research Society

**Publications**: 215 papers, 26 book chapters. Cited over 16,800 times (Scopus, ISI), h-factor; 63

**Representative publications**: (corresponding author)

Kunos, G., C. Farsang, and M.D. Ramirez-Gonzalez: β-Endorphin: Possible involvement in the antihypertensive effect of central α-receptor activation.

**Science** 211:82-84, 1981. (cited >190 times)

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Járai Z, Wagner JA, Varga K, Lake KD, Compton DR, Marin BR, Zimmer AM, Bonner TI, Buckley NE, Mezey E, Razdan RK,….. Kunos G: Cannabinoid-induced mesenteric vasodilation via a novel endothelial site of action.

**Proc. Natl. Acad. Sci. USA**  (track II) 96:14136-14141, 1999. (cited >440 times)

Di Marzo V, Goparaju SK, Wang L, Liu J, Batkai S, Jarai Z, Fezza F, Miura GI, Palmiter RD…. Kunos G: Leptin-regulated hypothalamic endocannabinoids acting at CB1 receptors are involved in maintaining food intake.

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Bátkai S, Járai Z, ….. Kunos G: Endocannabinoids acting at vascular CB1 receptors mediate the vasodilated state in advanced liver cirrhosis.

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Wang L, Liu J, Harvey-White J, Zimmer A, Kunos G: Endocannabinoid signaling via CB1 receptors is involved in ethanol preference and its age-dependent decline in mice.

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**J. Clin. Invest.** 115:1298-1305, 2005. (cited >600 times)

Pacher P, Bátkai S, Kunos G: The endocannabinoid system as an emerging target of pharmacotherapy.

**Pharmacological Reviews** 58:389-362, 2006. (cited >780 times)

Liu J, Wang L, Harvey-White J, Osei-Hyiaman D, Razdan R, Gong Q, Chan AC, Zhou Z, Huang B, Kim HY, Kunos G. A biosynthetic pathway for anandamide.

**Proc. Natl. Acad. Sci. USA** 103:2428-2433, 2006. (cited > 200 times)

Jeong W, Osei-Hyiaman D, Liu J, Batkai S, Mukhopadhyay P, Horiguchi N, Perk O, Harvey-White J,.. Kunos G. Paracrine activation of hepatic CB1 receptors by stellate cell-derived endocannabinoids mediate alcoholic fatty liver.

**Cell Metabolism** 7:227-235, 2008. (cited > 120 times)

Osei-Hyiaman D, Liu J, Zhou L, Godlewski G, Harvey-White J, Jeong WI, Batkai S…… Kunos G: Hepatic CB1 receptor involvement in diet-induced steatosis, altered lipid profile, and insulin and leptin resistance.

**J. Clin. Invest.**  118:3160-3169, 2008. (cited > 190 times)

Tam Y, Vemuri VK, Liu J, Osei-Hyiaman D, Batkai S, Mukhopadhyay B, Godlewski G, Ohnuma S, Ambudkar SV, Pickel J, Makriyannis A, Kunos G: Peripheral CB1 cannabinoid receptor blockade improves cardiometabolic risk in obesity.

 **J. Clin. Invest.** 120:2953-2966, 2010. (cited > 150 times)

Liu J, Zhou L, Xiong K, Godlewski G,…..Kunos G: hepatic Cannabinoid receptor-1 mediates diet-induced insulin resistance via insulin signaling and clearance in mice.

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Tam J, Cinar R, Liu J, Godlewski G, Wesley D, Jourdan T, Szanda G, Mukhopadhyey B, Chedester L, Liow JS, Innis RB, Rice KC, Deschamps, JR, Chorvat RJ, McElroy JF, Kunos G.Peripheral CB1 receptor inverse agonism reduces obesity by reversing leptin resistance.

**Cell Metabolism** 16:167-79, 2012.

Liu J, Cinar R, Xiong K, Lin Y, Godlewski G, Ntambi JM, Kunos G: Monounsaturated fatty acids generated via stearoyl CoA desaturase-1 are endogenous inhibitors of fatty acid amide hydrolase.

 **Proc Natl Acad Sci USA** 110:18832-37, 2013.

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**Nature Medicine** 19:1132-40, 2013.

Cinar R, Godlewski G, Liu J, Tam J, Jourdan T, Mukhopadhyay B, Harvey-White J, Kunos G: Hepatic CB1 Receptors Mediate Diet-Induced Insulin Resistance by Increasing de novo Ceramide Synthesis.

**Hepatology** 59:143-53, 2014.

Jourdan T, Szanda G, Rosenberg AC, Tam J, Earley B, Godlewski G, Cinar R, Liu J, Ju C, Pacher P, Kunos G: Overactive cannabinoid receptor 1 podocytes drives diabetic nephropathy.

 **Proc Natl Acad Sci USA** 111: E5420-8, 2014.