

Research output

THE CONCISE GUIDE TO PHARMACOLOGY 2021/22: G protein-coupled receptors

Alexander, S. P. H., Christopoulos, A., Davenport, A. P., Kelly, E., Mathie, A., Peters, J. A., Veale, E. L., Armstrong, J. F., Faccenda, E., Harding, S. D., Pawson, A. J., Southan, C., Davies, J. A., Abbracchio, M. P., Alexander, W., Al-hosaini, K., Bäck, M., Barnes, N. M., Bathgate, R., Beaulieu, J. M. & 135 others, Bernstein, K. E., Bettler, B., Birdsall, N. J. M., Blaho, V., Boulay, F., Bousquet, C., Bräuner-Osborne, H., Burnstock, G., Caló, G., Castaño, J. P., Catt, K. J., Ceruti, S., Chazot, P., Chiang, N., Chini, B., Chun, J., Cianciulli, A., Civelli, O., Clapp, L. H., Couture, R., Csaba, Z., Dahlgren, C., Dent, G., Singh, K. D., Douglas, S. D., Dournaud, P., Eguchi, S., Escher, E., Filardo, E. J., Fong, T., Fumagalli, M., Gainetdinov, R. R., Gasparo, M. D., Gerard, C., Gershengorn, M., Gobeil, F., Goodfriend, T. L., Goudet, C., Gregory, K. J., Gundlach, A. L., Hamann, J., Hanson, J., Hauger, R. L., Hay, D. L., Heinemann, A., Hollenberg, M. D., Holliday, N. D., Horiuchi, M., Hoyer, D., Hunyady, L., Husain, A., IJzerman, A. P., Inagami, T., Jacobson, K. A., Jensen, R. T., Jockers, R., Jonnalagadda, D., Karnik, S., Kaupmann, K., Kemp, J., Kennedy, C., Kihara, Y., Kitazawa, T., Kozielwicz, P., Kreienkamp, H. J., Kukkonen, J. P., Langenhan, T., Leach, K., Lecca, D., Lee, J. D., Leeman, S. E., Leprince, J., Li, X. X., Williams, T. L., Lolait, S. J., Lupp, A., Macrae, R., Maguire, J., Mazella, J., McArdle, C. A., Melmed, S., Michel, M. C., Miller, L. J., Mitolo, V., Mouillac, B., Müller, C. E., Murphy, P., Nahon, J. L., Ngo, T., Norel, X., Nyimanu, D., O'Carroll, A. M., Offermanns, S., Panaro, M. A., Parmentier, M., Pertwee, R. G., Pin, J. P., Prossnitz, E. R., Quinn, M., Ramachandran, R., Ray, M., Reinscheid, R. K., Rondard, P., Rovati, G. E., Ruzza, C., Sanger, G. J., Schöneberg, T., Schulte, G., Schulz, S., Segaloff, D. L., Serhan, C. N., Stoddart, L. A., Sugimoto, Y., Summers, R., Tan, V. P., Thal, D., Thomas, W., Timmermans, P. B. M. W. M., Tirupula, K., Tulipano, G., Unal, H., Unger, T., Valant, C., Vanderheyden, P., Vaudry, D., Vaudry, H., Vilardaga, J. P., Walker, C. S., Wang, J. M., Ward, D. T., Wester, H. J., Willars, G. B., Woodruff, T. M., Yao, C. & Ye, R. D., Oct 2021, In: British Journal of Pharmacology. 178, S1, p. S27-S156 130 p.

GPR55 regulates the responsiveness to, but does not dimerise with, α_1A -adrenoceptors

Walsh, S. K., Lipina, C., Ang, S. Y., Sato, M., Chia, L. Y., Kocan, M., Hutchinson, D. S., Summers, R. J. & Wainwright, C. L., Jun 2021, In: Biochemical Pharmacology. 188, 12 p., 114560.

Editorial: Recent Advances in G Protein-Coupled Receptor Signalling: Impact of Intracellular Location, Environment and Biased Agonism

Halls, M. L., Davenport, A. P. & Summers, R. J., 28 May 2021, In: Frontiers in Pharmacology. 12, 3 p., 707393.

Pharmacological Insights Into Safety and Efficacy Determinants for the Development of Adenosine Receptor Biased Agonists in the Treatment of Heart Failure

Rueda, P., Merlin, J., Chimenti, S., Feletou, M., Paysant, J., White, P. J., Christopoulos, A., Sexton, P. M., Summers, R. J., Charman, W. N., May, L. T. & Langmead, C. J., 11 Mar 2021, In: Frontiers in Pharmacology. 12, 15 p., 628060.

The metabolic effects of mirabegron are mediated primarily by β_3 -adrenoceptors

Dehvari, N., Sato, M., Bokhari, M. H., Kalinovich, A., Ham, S., Gao, J., Nguyen, H. T. M., Whiting, L., Mukaida, S., Merlin, J., Chia, L. Y., Wootten, D., Summers, R. J., Evans, B. A., Bengtsson, T. & Hutchinson, D. S., 1 Oct 2020, In: Pharmacology Research & Perspectives. 8, 5, 16 p., e00643.

Adrenoceptors—New roles for old players

Michel, M. C., Bond, R. A. & Summers, R. J., 1 Jul 2019, In: British Journal of Pharmacology. 176, 14, p. 2339-2342 4 p.

BRL37344 stimulates GLUT4 translocation and glucose uptake in skeletal muscle via β_2 -adrenoceptors without causing classical receptor desensitization

Mukaida, S., Sato, M., Öberg, A. I., Dehvari, N., Olsen, J. M., Kocan, M., Halls, M. L., Merlin, J., Sandström, A. L., Csikasz, R. I., Evans, B. A., Summers, R. J., Hutchinson, D. S. & Bengtsson, T., 1 May 2019, In: American Journal of Physiology - Regulatory Integrative and Comparative Physiology. 316, 5, p. R666-R677 12 p.

Metabolic effects of mirabegron in primary adipocytes in vitro, and on metabolic parameters in vivo

Hutchinson, D., Dehvari, N., Sato, M., Gao, W., Whiting, L., Kalinovich, A., Mukaida, S., Merlin, J., Wootten, D. L., Summers, R. J., Evans, B. & Bengtsson, T., May 2019, p. 283-283. 1 p.

AT1R-AT2R-RXFP1 functional crosstalk in myfibroblasts: Impact on the therapeutic targeting of renal and cardiac fibrosis

Chow, B. S. M., Kocan, M., Shen, M., Wang, Y., Han, L., Chew, J. Y., Wang, C., Bosnyak, S., Mirabito-Colafella, K. M., Barsha, G., Wigg, B., Johnstone, E. K. M., Hossain, M. A., Pflieger, K. D. G., Denton, K. M., Widdop, R. E., Summers, R. J., Bathgate, R. A. D., Hewitson, T. D. & Samuel, C. S., 1 Jan 2019, In: Journal of the American Society of Nephrology. 30, 11, p. 2191-2207 17 p.

Drug-receptor kinetics and sigma-1 receptor affinity differentiate clinically evaluated histamine H₃ receptor antagonists

Riddy, D. M., Cook, A. E., Shackelford, D. M., Pierce, T. L., Mocaer, E., Mannoury la Cour, C., Sors, A., Charman, W. N., Summers, R. J., Sexton, P. M., Christopoulos, A. & Langmead, C. J., 1 Jan 2019, In: *Neuropharmacology*. 144, p. 244-255 12 p.

Bone marrow transplantation and RNAseq analysis of *Gpr21*^{-/-} monocytes reveals reduced migratory function and downregulation of inflammatory genes

Riddy, D., Kammoun, H., Bosnyak-Gladovic, S., Ziemann, M., Summers, R., Sexton, P. M., Murphy, A. & Langmead, C., 2019. 2 p.

Divergent effects of strontium and calcium-sensing receptor positive allosteric modulators (calcimimetics) on human osteoclast activity

Diepenhorst, N. A., Leach, K., Keller, A. N., Rueda, P., Cook, A. E., Pierce, T. L., Nowell, C., Pastoureau, P., Sabatini, M., Summers, R. J., Charman, W. N., Sexton, P. M., Christopoulos, A. & Langmead, C. J., 1 Nov 2018, In: *British Journal of Pharmacology*. 175, 21, p. 4095-4108 14 p.

Molecular pharmacology of GPCRs

Langmead, C. J. & Summers, R. J., 1 Nov 2018, In: *British Journal of Pharmacology*. 175, 21, p. 4005-4008 4 p.

Rosiglitazone and a β_3 -adrenoceptor agonist are both required for functional browning of white adipocytes in culture

Merlin, J., Sato, M., Chia, L. Y., Fahey, R., Pakzad, M., Nowell, C. J., Summers, R. J., Bengtsson, T., Evans, B. A. & Hutchinson, D. S., 30 May 2018, In: *Frontiers in Endocrinology*. 9, MAY, 17 p., 249.

Comparative genotypic and phenotypic analysis of human peripheral blood monocytes and surrogate monocyte-like cell lines commonly used in metabolic disease research

Riddy, D. M., Goy, E., Delerive, P., Summers, R. J. & Langmead, C. J., 1 May 2018, In: *PLoS ONE*. 13, 5, 19 p., e0197177.

INSL5 activates multiple signalling pathways and regulates GLP-1 secretion in NCI-H716 cells

Ang, S. Y., Evans, B. A., Poole, D. P., Bron, R., DiCello, J. J., Bathgate, R. A. D., Kocan, M., Hutchinson, D. S. & Summers, R. J., 1 Apr 2018, In: *Journal of Molecular Endocrinology*. 60, 3, p. 213-224 12 p.

α_{1A} -Adrenoceptors activate mTOR signalling and glucose uptake in cardiomyocytes

Sato, M., Evans, B. A., Sandström, A. L., Chia, L. Y., Mukaida, S., Thai, B. S., Nguyen, A., Lim, L., Tan, C. Y. R., Baltos, J. A., White, P. J., May, L. T., Hutchinson, D. S., Summers, R. J. & Bengtsson, T., 1 Feb 2018, In: *Biochemical Pharmacology*. 148, p. 27-40 14 p.

G protein-coupled receptors targeting insulin resistance, obesity, and type 2 diabetes mellitus

Riddy, D. M., Delerive, P., Summers, R. J., Sexton, P. & Langmead, C. J., 1 Jan 2018, In: *Pharmacological Reviews*. 70, 1, p. 39-67 29 p.

The PPAR γ agonist rosiglitazone promotes the induction of brite adipocytes, increasing β -adrenoceptor-mediated mitochondrial function and glucose uptake

Merlin, J., Sato, M., Nowell, C., Pakzad, M., Fahey, R., Gao, J., Dehvari, N., Summers, R. J., Bengtsson, T., Evans, B. A. & Hutchinson, D. S., 1 Jan 2018, In: *Cellular Signalling*. 42, p. 54-66 13 p.

ML290 is a biased allosteric agonist at the relaxin receptor RXFP1

Kocan, M., Sarwar, M., Ang, S. Y., Xiao, J., Marugan, J., Hossain, M. A., Wang, C., Hutchinson, D. S., Samuel, C. S., Agoulnik, A. I., Bathgate, R. A. D. & Summers, R. J., 1 Dec 2017, In: *Scientific Reports*. 7, 1, 14 p., 2968.

Structure-function analyses of a pertussis-like toxin from pathogenic *Escherichia coli* reveal a distinct mechanism of inhibition of trimeric G-proteins

Littler, D. R., Ang, S. Y., Moriel, D. G., Kocan, M., Kleifeld, O., Johnson, M. D., Tran, M. T., Paton, A. W., Paton, J. C., Summers, R. J., Schembri, M. A., Rossjohn, J. & Beddoe, T., 8 Sep 2017, In: *Journal of Biological Chemistry*. 292, 36, p. 15143-15158 16 p.

Factors influencing biased agonism in recombinant cells expressing the human α_{1A} -adrenoceptor

da Silva Junior, E. D., Sato, M., Merlin, J., Broxton, N., Hutchinson, D. S., Ventura, S., Evans, B. A. & Summers, R. J., 1 Jul 2017, In: British Journal of Pharmacology. 174, 14, p. 2318-2333 16 p.

Signal transduction pathways activated by insulin-like peptide 5 at the relaxin family peptide RXFP4 receptor

Ang, S. Y., Hutchinson, D. S., Patil, N., Evans, B. A., Bathgate, R. A. D., Halls, M. L., Hossain, M. A., Summers, R. J. & Kocan, M., 1 May 2017, In: British Journal of Pharmacology. 174, 10, p. 1077-1089 13 p.

The actions of relaxin on the human cardiovascular system

Sarwar, M., Du, X. J., Dschietzig, T. B. & Summers, R. J., 1 May 2017, In: British Journal of Pharmacology. 174, 10, p. 933-949 17 p.

High throughput, quantitative analysis of human osteoclast differentiation and activity

Diepenhorst, N., Nowell, C., Rueda, P., Henriksen, K., Pierce, T., Cook, A., Pastoureau, P., Sabatini, M., Charman, W., Christopoulos, A., Summers, R., Sexton, P. & Langmead, C., 15 Feb 2017, In: Analytical Biochemistry. 519, p. 51-56 6 p.

Isoform-specific biased agonism of histamine H_3 receptor agonists

Riddy, D. M., Cook, A. E., Diepenhorst, N. A., Bösnyak, S., Brady, R., La Cour, C. M., Mocaer, E., Summers, R. J., Charman, W. N., Sexton, P. M., Christopoulos, A. & Langmead, C. J., 1 Feb 2017, In: Molecular Pharmacology. 91, 2, p. 87-99 13 p.

The actions of relaxin family peptides on signal transduction pathways activated by the relaxin family peptide receptor RXFP4

Ang, S. Y., Hutchinson, D. S., Evans, B. A., Hossain, M. A., Patil, N., Bathgate, R. A. D., Kocan, M. & Summers, R. J., Jan 2017, In: Naunyn-Schmiedeberg's Archives of Pharmacology. 390, 1, p. 105-111 7 p.

Constitutive knockout of *Gpr21* inhibits the ex vivo migration of mouse immune cells

Riddy, D., Simonds, S., Bösnyak-Gladovic, S., Fabb, S., Rueda, P., Sexton, P. M., Summers, R., Cowley, M. & Langmead, C., 2017.

Recent progress in the understanding of relaxin family peptides and their receptors

Summers, R. J., 2017, In: British Journal of Pharmacology. 174, 10, p. 915-920 6 p.

Molecular pharmacology of G protein-coupled receptors

Summers, R. J., 1 Oct 2016, In: British Journal of Pharmacology. 173, 20, p. 2931-2933 3 p.

Antifibrotic actions of Serelaxin: New roles for an old player

Samuel, C. S., Summers, R. J. & Hewitson, T. D., Jun 2016, In: Trends in Pharmacological Sciences. 37, 6, p. 485-497 13 p.

The C-terminus of the B-chain of human insulin-like peptide 5 is critical for cognate RXFP4 receptor activity

Patil, N. A., Bathgate, R. A. D., Kocan, M., Ang, S. Y., Tailhades, J., Separovic, F., Summers, R., Grosse, J., Hughes, R. A., Wade, J. D. & Hossain, M. A., 1 Apr 2016, In: Amino Acids. 48, 4, p. 987-992 6 p.

Engineering of a novel simplified human insulin-like peptide 5 agonist

Patil, N. A., Hughes, R. A., Rosengren, K. J., Kocan, M., Ang, S. Y., Tailhades, J., Separovic, F., Summers, R. J., Grosse, J., Wade, J., Bathgate, R. A. D. & Hossain, M. A., 10 Mar 2016, In: Journal of Medicinal Chemistry. 59, 5, p. 2118-2125 8 p.

Murine GPRC6A mediates cellular responses to L-amino acids, but not osteocalcin variants

Rueda, P., Harley, E., Lu, Y., Stewart, G. D., Fabb, S., Diepenhorst, N., Cremers, B., Rouillon, M-H., Wehrle, I., Geant, A., Lamarche, G., Leach, K., Charman, W. N., Christopoulos, A., Summers, R. J., Sexton, P. M. & Langmead, C. J., 1 Jan 2016, In: PLoS ONE. 11, 1, p. 1-19 19 p., e0146846.

A single-chain derivative of the relaxin hormone is a functionally selective agonist of the G protein-coupled receptor, RXFP1

Hossain, M. A., Kocan, M., Yao, S. T., Royce, S. G., Nair, V. B., Siwek, C., Patil, N. A., Harrison, I. P., Rosengren, K. J., Selemidis, S., Summers, R. J., Wade, J. D., Bathgate, R. A. D. & Samuel, C. S., 2016, In: Chemical Science. 7, 6, p. 3805-3819 15 p.

Comparative genotypic and phenotypic analysis of surrogate monocytic-like cell lines and human peripheral blood monocytes

Riddy, D., Goy, E., Summers, R., Christopoulos, A., Sexton, P. M. & Langmead, C., 2016. 1 p.

Enhanced serelaxin signalling in co-cultures of human primary endothelial and smooth muscle cells

Sarwar, M., Samuel, C. S., Bathgate, R., Stewart, D. R. & Summers, R. J., 2016, In: British Journal of Pharmacology. 173, 3, p. 484 - 496 13 p.

Isoform-specific bias of histamine H3 receptor agonists

Riddy, D., Cook, A. E., Diepenhorst, N., Bosnyak, S., Brady, R., La Cour, C. M., Mocaer, E., Summers, R., Charman, W., Sexton, P. M., Christopoulos, A. & Langmead, C., 2016.

Orthosteric, allosteric and biased signalling at the relaxin-3 receptor RXFP3

Kocan, M., Ang, S. Y. & Summers, R. J., 2016, In: Neurochemical Research. 41, 3, p. 610-619 10 p.

International union of basic and clinical pharmacology. XCV. Recent advances in the understanding of the pharmacology and biological roles of relaxin family peptide receptors 1-4, the receptors for relaxin family peptides

Halls, M. L., Bathgate, R. A. D., Sutton, S. W., Dschietzig, T. B. & Summers, R. J., 2015, In: Pharmacological Reviews. 67, 2, p. 389-440 52 p.

Label-free kinetics: exploiting functional hemi-equilibrium to derive rate constants for muscarinic receptor antagonists

Riddy, D. M., Valant, C., Rueda, P., Charman, W. N., Sexton, P. M., Summers, R. J., Christopoulos, A. & Langmead, C. J., 2015, In: Molecular Pharmacology. 88, 4, p. 779-790 12 p.

Serelaxin-mediated signal transduction in human vascular cells: bell-shaped concentration-response curves reflect differential coupling to G proteins

Sarwar, M., Samuel, C. S., Bathgate, R. A., Stewart, D. R. & Summers, R. J., 2015, In: British Journal of Pharmacology. 172, 4, p. 1005-1019 15 p.

Improving type 2 diabetes through a distinct adrenergic signaling pathway involving mTORC2 that mediates glucose uptake in skeletal muscle

Sato, M., Dehvari, N., Oberg, A., Dallner, O. S., Sandstrom, A. L., Olsen, J. M., Csikasz, R. I., Summers, R. J., Hutchinson, D. S. & Bengtsson, T., 2014, In: Diabetes. 63, 12, p. 4115 - 4129 15 p.

Relaxin requires the angiotensin II type 2 receptor to abrogate renal interstitial fibrosis

Chow, B. SM., Kocan, M., Bosnyak, S., Sarwar, M., Wigg, B., Jones, E. S., Widdop, R. E., Summers, R. J., Bathgate, R. A. D., Hewitson, T. D. & Samuel, C. S., 2014, In: Kidney International. 86, 1, p. 75 - 85 11 p.

Response to Comment on Sato et al. Improving type 2 diabetes through a distinct adrenergic signaling pathway involving mTORC2 that mediates glucose uptake in skeletal muscle. Diabetes 2014;63:4115-4129

Sato, M., Dehvari, N., Oberg, A., Summers, R. J., Hutchinson, D. S. & Bengtsson, T., 2014, In: Diabetes. 63, 12, p. 22 - 23 2 p.

Signalling profiles of H3 relaxin, H2 relaxin and R3(B?23-27)R/I5 acting at the relaxin family peptide receptor 3 (RXFP3)

Kocan, M., Sarwar, M., Hossain, M. A., Wade, J. D. & Summers, R. J., 2014, In: British Journal of Pharmacology. 171, 11, p. 2827 - 2841 15 p.

Themed issue of the British Journal of Pharmacology

Summers, R. J., 2014, In: British Journal of Pharmacology. 171, 5, p. 1069 - 1072 4 p.

Chronic activation of the low affinity site of beta -adrenoceptors stimulates haemodynamics but exacerbated pressure-overload cardiac remodelling

Kiriazis, H., Tugiono, N., Xu, Q., Gao, X-M., Jennings, N., Ming, Z., Su, Y., Klenowski, P., Summers, R. J., Kaumann, A., Molenaar, P. & Du, X-J., 2013, In: British Journal of Pharmacology. 170, 2, p. 352 - 365 14 p.

Orthosteric binding of rho-Da1a, a natural peptide of snake venom interacting selectively with the alpha(1A)-Adrenoceptor

Maiga, A., Merlin, J., Marcon, E., Rouget, C., Larregola, M., Gilquin, B., Fruchart-Gaillard, C., Lajeunesse, E., Marchetti, C., Lorphelin, A., Bellanger, L., Summers, R. J., Hutchinson, D. S., Evans, B. A., Servent, D. & Gilles, N., 2013, In: PLoS ONE. 8, 7, 11 p., e68841.

Relaxin family peptides and their receptors

Bathgate, R., Halls, M. L., van der Westhuizen, E. T., Callander, G., Kocan, M. & Summers, R. J., 2013, In: Physiological Reviews. 93, 1, p. 405 - 480 76 p.

{beta}Adrenoceptor-mediated regulation of glucose uptake in skeletal muscle—ligand-directed signalling or a reflection of system complexity?

Evans, B. A., Hutchinson, D. S. & Summers, R. J., 2013, In: Naunyn-Schmiedeberg's Archives of Pharmacology. 386, 9, p. 757 - 760 4 p.

Beta(2)-adrenoceptors increase translocation of GLUT4 via GPCR kinase sites in the receptor C-terminal tail

Dehvari, N., Hutchinson, D., Nevzorova, J., Dallner, O., Sato, M., Kocan, M., Merlin, J., Evans, B., Summers, R. & Bengtsson, T., 2012, In: British Journal of Pharmacology. 165, 5, p. 1442 - 1456 15 p.

Interaction with caveolin-1 modulates G protein coupling of the mouse beta3-adrenoceptor

Sato, M., Hutchinson, D. S., Halls, M. L., Furness, S. G. B., Bengtsson, T., Evans, B. A. & Summers, R. J., 2012, In: Journal of Biological Chemistry. 287, 24, p. 20674 - 20688 15 p.

Themed section: Molecular Pharmacology of G protein-coupled receptors

Summers, R., 2012, In: British Journal of Pharmacology. 165, 6, p. 1609 - 1612 4 p.

Quantification of functional selectivity at the human α 1A- adrenoceptor (Molecular Pharmacology (2011) 79, (298-307))

Evans, B. A., Broxton, N., Merlin, J., Sato, M., Hutchinson, D. S., Christopoulos, A. & Summers, R. J., Mar 2011, In: Molecular Pharmacology. 79, 3, p. 627 1 p.

Evolution of beta-blockers: from anti-anginal drugs to ligand-directed signalling

Baker, J. G., Hill, S. J. & Summers, R. J., 2011, In: Trends in Pharmacological Sciences. 32, 4, p. 227 - 234 8 p.

Modulation of the glucagon-like peptide-1 receptor signaling by naturally occurring and synthetic flavonoids

Wooten, D., Simms, J., Koole, C., Woodman, O., Summers, R., Christopoulos, A. & Sexton, P., 2011, In: Journal of Pharmacology and Experimental Therapeutics. 336, 2, p. 540 - 550 11 p.

Quantification of functional selectivity at the human {alpha}1A-adrenoceptor

Evans, B. A., Broxton, N., Merlin, J., Sato, M., Hutchinson, D. S., Christopoulos, A. & Summers, R. J., 2011, In: Molecular Pharmacology. 79, 2, p. 298 - 307 10 p.

Role of beta-adrenoceptors in glucose uptake in astrocytes using beta-adrenoceptor knockout mice

Catus, S. L., Gibbs, M. E., Sato, M., Summers, R. J. & Hutchinson, D. S., 2011, In: British Journal of Pharmacology. 162, 8, p. 1700 - 1715 16 p.

alpha{2}-Adrenoceptors activate noradrenaline-mediated glycogen turnover in chick astrocytes

Hutchinson, D. S., Catus, S. L., Merlin, J., Summers, R. J. & Gibbs, M. E., 2011, In: Journal of Neurochemistry. 117, 5, p. 915 - 926 12 p.

Allosteric ligands of the glucagon-like peptide 1 receptor (GLP-1R) differentially modulate endogenous and exogenous peptide responses in a pathway-selective manner: Implications for drug screening

Koole, C., Wootten, D., Simms, J., Valant, C., Sridhar, R., Woodman, O., Miller, L. J., Summers, R., Christopoulos, A. & Sexton, P. M., 2010, In: *Molecular Pharmacology*. 78, 3, p. 456 - 465 10 p.

Cardiovascular effects of relaxin: from basic science to clinical therapy

Du, X-J., Bathgate, R. A. D., Samuel, C. S., Dart, A. M. & Summers, R. J., 2010, In: *Nature Reviews Cardiology*. 7, 1, p. 48 - 58 11 p.

H2 relaxin is a biased ligand relative to H3 relaxin at the relaxin family peptide receptor 3 (RXFP3) [S]

van der Westhuizen, E. T., Christopoulos, A., Sexton, P., Wade, J. & Summers, R., 2010, In: *Molecular Pharmacology*. 77, 5, p. 759 - 772 14 p.

Ligand-directed signalling at beta-adrenoceptors

Evans, B., Sato, M., Sarwar, M., Hutchinson, D. & Summers, R., 2010, In: *British Journal of Pharmacology*. 159, 5, p. 1022 - 1038 17 p.

Memory loss caused by beta-amyloid protein is rescued by a beta3-adrenoceptor agonist

Gibbs, M. E., Maksel, D. M., Gibbs, Z., Hou, X., Summers, R. J. & Small, D. H., 2010, In: *Neurobiology of Aging*. 31, p. 614 - 624 10 p.

Molecular pharmacology of G protein-coupled receptors: Editorial

Summers, R., 2010, In: *British Journal of Pharmacology*. 159, 5, p. 983 - 985 3 p.

Noradrenaline release in the locus coeruleus modulates memory formation and consolidation; roles for alpha- and beta-adrenergic receptors

Gibbs, M. E., Hutchinson, D. S. & Summers, R. J., 2010, In: *Neuroscience*. 170, 4, p. 1209 - 1222 14 p.

The M3-muscarinic acetylcholine receptor stimulates glucose uptake in L6 skeletal muscle cells by a CaMKK-AMPK-dependent mechanism

Merlin, J., Evans, B. A., Csikasz, R. I., Bengtsson, T., Summers, R. J. & Hutchinson, D. S., 2010, In: *Cellular Signalling*. 22, 7, p. 1104 - 1113 10 p.

Tissue functions mediated by beta3-adrenoceptors-Findings and challenges

Michel, M., Ochodnický, P. & Summers, R., 2010, In: *Naunyn-Schmiedeberg's Archives of Pharmacology*. 382, 2, p. 103 - 108 6 p.

Addition of a carboxy-terminal green fluorescent protein does not alter the binding and signaling properties of relaxin family peptide receptor 3

van der Westhuizen, E. T., Wade, J. D., Sexton, P. M. & Summers, R. J., 2009, In: *Annals of the New York Academy of Sciences*. 1160, p. 105 - 107 3 p.

Importance of adrenergic receptors in prenatally induced cognitive impairment in the domestic chick

Gibbs, M. E., Rodricks, C. L., Hutchinson, D. S., Summers, R. J. & Miller, S. L., 2009, In: *International Journal of Developmental Neuroscience*. 27, p. 27 - 35 8 p.

Investigations into the inhibitory effects of relaxin on renal myofibroblast differentiation

Samuel, C. S., Mookerjee, I., Halls, M. L., Summers, R. J., Chew, E., Bathgate, R. A. D., Tregear, G. W. & Hewitson, T. D., 2009, In: *Annals of the New York Academy of Sciences*. 1160, p. 294 - 299 6 p.

RXFP1 couples to the G α 3-Gbetagamma-PI3K-PKCzeta pathway via the final 10 amino acids of the receptor C-terminal tail

Halls, M. L., Papaioannou, M., Wade, J. D., Evans, B. A., Bathgate, R. A. D. & Summers, R. J., 2009, In: *Annals of the New York Academy of Sciences*. 1160, p. 117 - 120 4 p.

Relaxin activates multiple cAMP signaling pathway profiles in different target cells

Halls, M. L., Hewitson, T. D., Moore, X-L., Du, X-J., Bathgate, R. A. D. & Summers, R. J., 2009, In: Annals of the New York Academy of Sciences. 1160, p. 108 - 111 4 p.

Relaxin family peptide receptor (RXFP1) coupling to Galphai3, involves the C-terminal Arg752 and localization within membrane raft microdomains

Halls, M. L., van der Westhuizen, E. T., Wade, J. D., Evans, B. A., Bathgate, R. A. D. & Summers, R. J., 2009, In: Molecular Pharmacology. 75, 2, p. 415 - 428 14 p.

Relaxin inhibits renal myofibroblast differentiation via RXFP1, the nitric oxide pathway, and Smad2

Mookerjee, I., Hewitson, T. D., Halls, M. L., Summers, R. J., Mathai, M. L., Bathgate, R., Tregear, G. W. & Samuel, C. S., 2009, In: The FASEB Journal. 23, p. 1219 - 1229 10 p.

Roles of the receptor, the ligand, and the cell in the signal transduction pathways utilized by the relaxin family peptide receptors 1-3

Summers, R. J., Bathgate, R. A. D., Wade, J. D., van der Westhuizen, E. T. & Halls, M. L., 2009, In: Annals of the New York Academy of Sciences. 1160, p. 99 - 104 6 p.

COMMENTARY: Atypical pharmacologies at beta-adrenoceptors

Summers, R. J., 2008, In: British Journal of Pharmacology. 155, 3, p. 285 - 287 3 p.

Energy metabolism and memory processing: Role of glucose transport and glycogen in responses to adrenoceptor activation in the chicken

Hutchinson, D. S., Summers, R. J. & Gibbs, M. E., 2008, In: Brain Research Bulletin. 76, 3, p. 224 - 234 11 p.

Memory processing in the avian hippocampus involves interactions between beta-adrenoceptors, glutamate receptors, and metabolism

Gibbs, M. E., Bowser, D. N., Hutchinson, D. S., Loiacono, R. & Summers, R. J., 2008, In: Neuropsychopharmacology. 33, 12, p. 2831 - 2846 16 p.

Regulation of AMP-activated protein kinase activity by G-protein coupled receptors: Potential utility in treatment of diabetes and heart disease

Hutchinson, D. S., Summers, R. J. & Bengtsson, T., 2008, In: Pharmacology and Therapeutics. 119, 3, p. 291 - 310 20 p.

Relaxin family peptide receptors - from orphans to therapeutic targets

van der Westhuizen, E. T., Halls, M. L., Samuel, C. S., Bathgate, R., Unemori, E. N., Sutton, S. W. & Summers, R. J., 2008, In: Drug Discovery Today. 13, 15-16, p. 640 - 651 12 p.

Role of beta-Adrenoceptors in Memory Consolidation: beta3-Adrenoceptors Act on Glucose Uptake and beta2-Adrenoceptors on Glycogenolysis

Gibbs, M. E., Hutchinson, D. S. & Summers, R. J., 2008, In: Neuropsychopharmacology. 33, p. 2384 - 2397 13 p.

The beta3-adrenoceptor agonist 4-[[[(hexylamino)carbonyl]amino]-N-[4-[2-[[[(2S)-2-hydroxy-3-(4-hydroxyphenoxy)propyl]amino]ethyl]-phenyl]-benzenesulfonamide (L755507) and antagonist [...]

Sato, M., Hutchinson, D. S., Evans, B. A. & Summers, R. J., 2008, In: Molecular Pharmacology. 74, 5, p. 1417 - 1428 12 p.

The rush to adrenaline: Drugs in sport acting on the beta-adrenergic system

Davis, E. A., Loiacono, R. & Summers, R. J., 2008, In: British Journal of Pharmacology. 154, 3, p. 584 - 597 14 p.

Comparison of signaling pathways activated by the relaxin family peptide receptors, RXFP1 and RXFP2, using reporter genes

Halls, M. L., Bathgate, R. & Summers, R. J., 2007, In: Journal of Pharmacology and Experimental Therapeutics. 320, 1, p. 281 - 290 10 p.

Functional domains of the mouse beta3-adrenoceptor associated with differential G-protein coupling

Sato, M., Hutchinson, D. S., Evans, B. A. & Summers, R. J., 2007, In: *Biochemical Society Transactions*. 35, Pt 5, p. 1035 - 1037 3 p.

Ligand-directed signaling at the beta3-adrenoceptor produced by 3-(2-ethylphenoxy)-1-[(1S)-1,2,3,4-tetrahydronaph-1-ylamino]-2S-2-propanol oxalate (SR59230A) relative to receptor agonists

Sato, M., Horinouchi, T., Hutchinson, D. S., Evans, B. A. & Summers, R. J., 2007, In: *Molecular Pharmacology*. 72, 5, p. 1359 - 1368 10 p.

Relaxin antagonizes hypertrophy and apoptosis in neonatal rat cardiomyocytes

Moore, X-L., Tan, S-L., Lo, C-Y., Fang, L., Su, Y-D., Gao, X-M., Woodcock, E. A., Summers, R. J., Tregear, G. W., Bathgate, R. & Du, X-J., 2007, In: *Endocrinology*. 148, 4, p. 1582 - 1589 8 p.

Relaxin family peptide receptors - Former orphans reunite with their parent ligands to activate multiple signalling pathways

Halls, M. L., van der Westhuizen, E. T., Bathgate, R. & Summers, R. J., 2007, In: *British Journal of Pharmacology*. 150, 6, p. 677 - 691 15 p.

Relaxin receptors - new drug targets for multiple disease states

van der Westhuizen, E. T., Summers, R. J., Halls, M. L., Bathgate, R. & Sexton, P., 2007, In: *Current Drug Targets*. 8, 1, p. 91 - 104 14 p.

The relaxin family peptide receptor 3 activates extracellular signal-regulated kinase 1/2 through a protein kinase C-dependent mechanism

van der Westhuizen, E. T., Werry, T. D., Sexton, P. & Summers, R. J., 2007, In: *Molecular Pharmacology*. 71, 6, p. 1618 - 1629 12 p.

beta2- and beta3-Adrenoceptors activate glucose uptake in chick astrocytes by distinct mechanisms: A mechanism for memory enhancement?

Hutchinson, D. S., Summers, R. J. & Gibbs, M. E., 2007, In: *Journal of Neurochemistry*. 103, 3, p. 997 - 1008 12 p.

'Relaxin' the stiffened heart and arteries: the therapeutic potential for relaxin in the treatment of cardiovascular disease

Samuel, C. S., Du, X-J., Bathgate, R. A. D. & Summers, R. J., 2006, In: *Pharmacology and Therapeutics*. 112, 2, p. 529 - 552 24 p.

Agonist effects of zinterol at the mouse and human beta3-adrenoceptor

Hutchinson, D. S., Chernogubova, E., Sato, M., Summers, R. J. & Bengtsson, T., 2006, In: *Naunyn-Schmiedeberg's Archives of Pharmacology*. 373, 2, p. 158 - 168 11 p.

Differential G protein coupling of the relaxin family peptide receptors RXFP1 and RXFP2 is due to differences in the C-terminal tail

Halls, M. L., Bathgate, R. & Summers, R. J., 2006, p. 395 - 395. 1 p.

International union of pharmacology LVII: recommendations for the nomenclature of receptors for relaxin family peptides

Bathgate, R., Ivell, R., Sanborn, B. M., Sherwood, O. D. & Summers, R. J., 2006, In: *Pharmacological Reviews*. 58, 1, p. 7 - 31 25 p.

Mechanisms of extracellular signal-regulated kinase (ERK) 1/2 phosphorylation following activation of relaxin family peptide receptor 3 (RXFP3) by human relaxin-3 (H3 relaxin)

Sexton, P. & Summers, R. J., 2006, p. 392 - 393. 2 p.

Multiple signalling pathways involved in beta2-adrenoceptor-mediated glucose uptake in rat skeletal muscle cells

Nevzorova, J., Evans, B. A., Bengtsson, T. & Summers, R. J., 2006, In: *British Journal of Pharmacology*. 147, 4, p. 446 - 454 9 p.

Relaxin family peptide receptors RXFP1 and RXFP2 modulate cAMP signaling by distinct mechanisms
Halls, M. L., Bathgate, R. A. D. & Summers, R. J., 2006, In: *Molecular Pharmacology*. 70, 1, p. 214 - 226 13 p.

The role of the C-terminal domain in mouse beta(3)-adrenoceptor signalling
Society, S. (ed.), Horinouchi, T., Sato, M., Hutchinson, D. S., Evans, B. A. & Summers, R. J., 2006, p. 126 - 126. 1 p.

The role of the C-terminal tail of the human beta(2)-adrenoceptor in stimulation of glucose uptake in CHO cells
Nevzorova, J., Evans, B. A. & Summers, R. J., 2006, p. 394 - 394. 1 p.

Contrasting roles for beta1, beta2 and beta3-adrenoceptors in memory formation in the chick
Gibbs, M. E. & Summers, R. J., 2005, In: *Neuroscience*. 131, 1, p. 31 - 42 12 p.

Evidence for pleiotropic signaling at the mouse beta3-adrenoceptor revealed by SR59230A [3-(2-ethylphenoxy)-1-[(1S)-1,2,3,4-tetrahydronaph-1-ylamino]-2S-2-propanol oxalate]
Hutchinson, D. S., Sato, M., Evans, B. A., Christopoulos, A. & Summers, R. J., 2005, In: *Journal of Pharmacology and Experimental Therapeutics*. 312, 3, p. 1064 - 1074 11 p.

Functional domains of the mouse beta3-adrenoceptor associated with differential G-protein coupling
Sato, M., Hutchinson, D. S., Bengtsson, T., Floren, A., Langel, U., Horinouchi, T., Evans, B. A. & Summers, R. J., 2005, In: *Journal of Pharmacology and Experimental Therapeutics*. 315, 3, p. 1354 - 1361 8 p.

Identification of binding sites with differing affinity and potency for relaxin analogues on LGR7 and LGR8 receptors
Halls, M. L., Bathgate, R., Sudo, S., Kumagai, J., Bond, C. P. & Summers, R. J., 2005, *Relaxin and Related Peptides: Fourth International Conference*. Sherwood, O. D., Fields, P. A. & Steinetz, B. G. (eds.). New York USA: New York Academy of Sciences, Vol. 1041. p. 17 - 21 5 p.

Increased expression of the relaxin receptor (LGR7) in human endometrium during the secretory phase of the menstrual cycle
Bond, C. P., Parry, L. J., Samuel, C. S., Gehring, H., Lederman, F. L., Rogers, P. A. W. & Summers, R. J., 2005, *Relaxin and Related Peptides: Fourth International Conference*. Sherwood, O. D., Fields, P. A. & Steinetz, B. G. (eds.). New York USA: New York Academy of Sciences, Vol. 1041. p. 136 - 143 8 p.

Multiple binding sites revealed by interaction of relaxin family peptides with native and chimeric relaxin family peptide receptors 1 and 2 (LGR7 and LGR8)
Halls, M. L., Bond, C. P., Sudo, S., Kumagai, J., Ferraro, T., Layfield, S., Bathgate, R. A. D. & Summers, R. J., 2005, In: *Journal of Pharmacology and Experimental Therapeutics*. 313, 2, p. 677 - 687 11 p.

New Relaxin Peptides: Structure and Biological Function

Tregear, G. W., Bathgate, R. A. D., Samuel, C. S., Layfield, S., Ferraro, T., Gundlach, A. L., Ma, S., Lin, F., WILKINSON, T., Summers, R. J., Rosengren, J., Craik, D. J. & Wade, J., 2005, *Peptide science: proceedings of the Japanese Peptide Symposium*.

New relaxin peptides: Structure and function

Tregear, G. W., Bathgate, R. A. D., Samuel, C., Layfield, S., Ferraro, T., Gundlach, A. L., Burazin, T. CD., Ma, S., Lin, F., WILKINSON, T., Summers, R. J., Rosengren, J., Craik, D. J. & Wade, J., 2005, *1st Asia-Pacific International Peptide Symposium*.

Receptors for relaxin family peptides

Bathgate, R. A., Ivell, R., Sanborn, B. M. O., Sherwood, O. D. & Summers, R. J., 2005, *Relaxin and Related Peptides: Fourth International Conference*. Sherwood, O. D., Fields, P. A. & Steinetz, B. G. (eds.). New York USA: New York Academy of Sciences, Vol. 1041. p. 61 - 76 16 p.

Responses of GPCR135 to human gene 3 (H3) relaxin in CHO-K1 cells determined by microphysiometry

van der Westhuizen, E. T., Sexton, P. M., Bathgate, R. A. D. & Summers, R. J., 2005, *Relaxin and Related Peptides: Fourth International Conference*. Sherwood, O. D., Fields, P. A. & Steinetz, B. G. (eds.). New York USA: New York

Academy of Sciences, Vol. 1041. p. 332 - 337 6 p.

Signal switching after stimulation of LGR7 receptors by human relaxin 2

Halls, M. L., Bathgate, R. & Summers, R. J., 2005, *Relaxin and Related Peptides: Fourth International Conference*. Sherwood, O. D., Fields, P. A. & Steinetz, B. G. (eds.). New York USA: New York Academy of Sciences, Vol. 1041. p. 288 - 291 4 p.

Signaling pathways of the LGR7 and LGR8 receptors determined by reporter genes

Halls, M. L., Bathgate, R., Roche, P. J. & Summers, R. J., 2005, *Relaxin and Related Peptides: Fourth International Conference*. Sherwood, O. D., Fields, P. A. & Steinetz, B. G. (eds.). New York USA: New York Academy of Sciences, Vol. 1041. p. 292 - 295 4 p.

The Chemistry and Biology of Human Relaxin-3

Tregear, G. W., Bathgate, R., Layfield, S., Ferraro, T., Gundlach, A. L., Ma, S., Lin, F., Hanson, N. F., Summers, R., Rosengren, J., Craik, D. J. & Wade, J., 2005, *Annals of the New York Academy of Sciences* .

The chemistry and biology of human relaxin-3

Tregear, G. W., Bathgate, R., Layfield, S., Ferraro, T., Gundlach, A. L., Ma, S., Lin, F., Hanson, N. F., Summers, R. J., Rosengren, J., Craik, D. J. & Wade, J. D., 2005, *Relaxin and Related Peptides: Fourth International Conference*. Sherwood, O. D., Fields, P. A. & Steinetz, B. G. (eds.). New York USA: New York Academy of Sciences, Vol. 1041. p. 40 - 46 7 p.

The relaxin gene-knockout mouse: a model of progressive fibrosis

Samuel, C. S., Zhao, C., Bathgate, R. A. D., Du, X-J., Summers, R. J., Amento, E. P., Walker, L. L., McBurnie, M., Zhao, L. & Tregear, G. W., 2005, *Relaxin and Related Peptides: Fourth International Conference*. Sherwood, O. D., Fields, P. A. & Steinetz, B. G. (eds.). New York USA: New York Academy of Sciences, Vol. 1041. p. 173 - 181 9 p.

The relaxin gene-knockout mouse: a model of progressive fibrosis

Samuel, C., Zhao, C., Bathgate, R., Du, X-J., Summers, R., Amento, E., Walker, L., McBurnie, M., Zhao, L. & Tregear, G., 2005, In: *Annals of the New York Academy of Sciences*. 1041, p. 173 - 181 9 p.

Adrenaline and noradrenaline

Gibbs, M. E. & Summers, R. J., 2004, *From Messengers to Molecules: Memories Are Made of These*. Riedel, G. & Platt, B. (eds.). First ed. New York USA: Kluwer Academic Publishers, p. 155 - 173 19 p.

Increased expression of the relaxin receptor (LGR7) in human endometrium during the secretory phase of the menstrual cycle

Bond, C. P., Parry, L. J., Samuel, C. S., Gehring, H. M., Lederman, F. L., Rogers, P. A. W. & Summers, R. J., 2004, In: *The Journal of Clinical Endocrinology and Metabolism*. 89, 7, p. 3477 - 3485 9 p.

Relaxin-1-deficient mice develop an age-related progression of renal fibrosis

Samuel, C. S., Zhao, C., Bond, C. P., Hewitson, T. D., Amento, E. P. & Summers, R. J., 2004, In: *Kidney International*. 65, 6, p. 2054 - 2064 11 p.

Stereoselectivity for interactions of agonists and antagonists at mouse, rat and human 3-adrenoceptors

Popp, B. D., Hutchinson, D. S., Evans, B. A. & Summers, R. J., 2004, In: *European Journal of Pharmacology*. 484, 2-3, p. 323 - 331 9 p.

The Janus faces of adrenoceptors: factors controlling the coupling of adrenoceptors to multiple signal transduction pathways

Summers, R. J., Broxton, N., Hutchinson, D. S. & Evans, B. A., 2004, In: *Clinical and Experimental Pharmacology and Physiology*. 31, 11, p. 822 - 827 6 p.

Physiological or pathological - a role for relaxin in the cardiovascular system?

Samuel, C. S., Parry, L. J. & Summers, R. J., 2003, In: *Current Opinion in Pharmacology*. 3, 2, p. 152 - 158 7 p.

Relaxin deficiency in mice is associated with an age-related progression of pulmonary fibrosis

Samuel, C. S., Zhao, C., Bathgate, R. A. D., Bond, C. P., Burton, M. D., Parry, L. J., Summers, R. J., Tang, M. L. K., Amento, E. P. & Tregear, G. W., 2003, In: The FASEB Journal. 17, 1, p. 121 - 123 3 p.

α_2 -adrenoceptors in the basal ganglia have a role in memory consolidation and reinforcement

Gibbs, M. E. & Summers, R. J., 2003, In: Neuropharmacology. 45, 3, p. 355 - 367 13 p.

Characterization of the β -adrenoceptor subtype involved in mediation of glucose transport in L6 cells

Nevezorova, J., Bengtsson, T., Evans, B. A. & Summers, R. J., 1 Jan 2002, In: British Journal of Pharmacology. 137, 1, p. 9-18 10 p.

Inotropic responses to human gene 2 (B29) relaxin in a rat model of myocardial infarction (MI): Effect of pertussis toxin

Kompa, A. R., Samuel, C. S. & Summers, R. J., 1 Jan 2002, In: British Journal of Pharmacology. 137, 5, p. 710-718 9 p.

Mouse β_{3a} and β_{3b} -adrenoceptors expressed in Chinese hamster ovary cells display identical pharmacology but utilize distinct signalling pathways

Hutchinson, D. S., Bengtsson, T., Evans, B. A. & Summers, R. J., 1 Jan 2002, In: British Journal of Pharmacology. 135, 8, p. 1903-1914 12 p.

Effects of Glucose and 2-Deoxyglucose on Memory Formation in the Chick: Interaction with β -Adrenoceptor Agonists

Gibbs, M. E. & Summers, R. J., 2002, In: Neuroscience. 114, 1, p. 69 - 79 11 p.

Human Relaxin Gene 3 (H3) and the Equivalent Mouse Relaxin (M3) Gene

Bathgate, R., Samuel, C. S., Burazin, T. CD., Layfield, S., Claasz, A. A., Reytomas, I. G., Dawson, N. F., Zhao, C., Bond, C. P., Summers, R. J., Parry, L. J., Wade, J. D. & Tregear, G. W., 2002, In: Journal of Biological Chemistry. 277, p. 1148 - 1157 10 p.

Inotropic Responses to Human Gene 2 (B29) Relaxin in a Rat Model of Myocardial infarction (MI): effect of pertussis Toxin

Kompa, A. R., Samuel, C. S. & Summers, R. J., 2002, In: British Journal of Pharmacology. 137, p. 710 - 718 9 p.

Relaxin 3, a novel member of the insulin/relaxin superfamily of peptide hormones.

Bathgate, R. A. D., Scott, D. J., Samuel, C. S., Burazin, T. CD., Layfield, S., Claasz, A. A., Dawson, N. F., Ma, S., Bond, C., Summers, R. J., Wade, J. D. & Tregear, G. W., 2002, In: Biology of Reproduction.

Relaxin-Like bioactivity of Ovine Insulin 3 (INSL3) Analogues

Claasz, A. A., Bond, C. P., Bathgate, R., Otvos Jnr, L., Dawson, N. F., Summers, R. J., Tregear, G. W. & Wade, J. D., 2002, In: European Journal of Biochemistry. 269, 24, p. 6287 - 6293 7 p.

Role of Adrenoceptor Subtypes in Memory Consolidation

Gibbs, M. E. & Summers, R. J., 2002, In: Progress in Neurobiology. 67, 5, p. 345 - 391 47 p.

Structural requirements for the interaction of sheep insulin-like factor 3 with relaxin receptors in rat atria

Tan, Y. Y., Dawson, N. F., Kompa, A. R., Bond, C. P., Claasz, A. A., Wade, J. D., Tregear, G. W. & Summers, R. J., 2002, In: European Journal of Pharmacology. 457, 2-Mar, p. 153 - 160 8 p.

Stimulation of α_1 -adrenoceptors inhibits memory consolidation in the chick

Gibbs, M. E. & Summers, R. J., 1 Dec 2001, In: European Journal of Neuroscience. 14, 8, p. 1369-1376 8 p.

Synthesis, conformational studies and biological activity of N ^{α} -mono-biotinylated rat relaxin

Mathieu, M. N., Wade, J. D., Tregear, G. W., Bond, C. P., Summers, R. J., Catimel, B., Nice, E. C. & Otvos, L., 31 Aug 2001, In: Journal of Peptide Research. 57, 5, p. 374-382 9 p.

β_1 - and β_3 -adrenoceptor mediated smooth muscle relaxation in hypothyroid rat ileum

Brown, K. J. & Summers, R. J., 16 Mar 2001, In: European Journal of Pharmacology. 415, 2-3, p. 257-263 7 p.

Enhancement of memory consolidation in chicks by β_3 -adrenoceptor agonists

Gibbs, M. E. & Summers, R. J., 16 Feb 2001, In: European Journal of Pharmacology. 413, 2-3, p. 235-240 6 p.

The effects of human GH and its lipolytic fragment (AOD9604) on lipid metabolism following chronic treatment in obese mice and β_3 -AR knock-out mice

Heffernan, M., Summers, R. J., Thorburn, A., Ogru, E., Gianello, R., Jiang, W. J. & Ng, F. M., 1 Jan 2001, In: Endocrinology. 142, 12, p. 5182-5189 8 p.

β_1 -adrenoceptors compensate for β_3 -adrenoceptors in ileum from β_3 -adrenoceptor knock-out mice

Hutchinson, D. S., Evans, B. A. & Summers, R. J., 1 Jan 2001, In: British Journal of Pharmacology. 132, 2, p. 433-442 10 p.

Enhancement of memory consolidation in chicks by β_3 -adrenoceptor agonists

Gibbs, M. E. & Summers, R. J., 2001, In: European Journal of Pharmacology. 413, 2-3, p. 235 - 240 6 p.

Increase in fat oxidation and weight loss in obese mice caused by chronic treatment with human growth hormone or a modified C-terminal fragment

Heffernan, M. A., Thorburn, A. W., Fam, B., Summers, R. J., Conway-Campbell, B., Waters, M. J. & Ng, F. M., 2001, In: International Journal of Obesity. 25, 10, p. 1442 - 1449 8 p.

Stimulation of α_1 -adrenoceptors inhibits memory consolidation in the chick

Gibbs, M. E. & Summers, R. J., 2001, In: European Journal of Neuroscience. 14, 8, p. 1369 - 1376 8 p.

Synthesis, conformational studies and biological activity of Na⁺-mono-biotinylated rat relaxin

Mathieu, M., Wade, J. D., Catimel, B., Bond, C. P., Nice, E. C., Summers, R. J., Otvos Jnr, L. & Tregear, G. W., 2001, In: Journal of Peptide Research. 57, 5, p. 374 - 382 9 p.

The effects of human GH and its lipolytic fragment (AOD9604) on lipid metabolism following chronic treatment in obese mice and β_3 -AR knock-out mice

Heffernan, M. A., Summers, R. J., Thorburn, A. W., Ogru, E., Gianello, R., Jiang, W.-J. & Ng, F. M., 2001, In: Endocrinology. 142, 12, p. 5182 - 5189 8 p.

β_1 - and β_3 -adrenoceptor mediated smooth muscle relaxation in hypothyroid rat ileum

Brown, K. J. & Summers, R. J., 2001, In: European Journal of Pharmacology. 415, 2-3, p. 257 - 263 7 p.

β_1 -Adrenoceptors compensate for β_3 -adrenoceptors in ileum from β_3 -adrenoceptor knock-out mice

Hutchinson, D. S., Evans, B. A. & Summers, R. J., 2001, In: British Journal of Pharmacology. 132, 2, p. 433 - 442 10 p.

Intracerebroventricular administration of the β_3 -adrenoceptor agonist CL 316243 causes Fos immunoreactivity in discrete regions of rat hypothalamus

Castillo-Meléndez, M., McKinley, M. J. & Summers, R. J., 1 Sep 2000, In: Neuroscience Letters. 290, 3, p. 161-164 4 p.

β_3 -adrenoceptor regulation and relaxation responses in mouse ileum

Hutchinson, D. S., Evans, B. A. & Summers, R. J., 1 Jan 2000, In: British Journal of Pharmacology. 129, 6, p. 1251-1259 9 p.

Beta3-adrenoceptor regulation and relaxation responses in mouse ileum

Hutchinson, D. S., Evans, B. A. & Summers, R. J., 2000, In: British Journal of Pharmacology. p. 1251 - 1259 9 p.

Intracerebroventricular administration of the beta3-adrenoceptor agonist CL 316243 causes Fos immunoreactivity in discrete regions of rat hypothalamus

Castillo-Melendez, M. E., McKinley, M. J. & Summers, R. J., 2000, In: *Neuroscience Letters*. p. 161 - 164 4 p.

Lidocaine and surgical modification reduces mortality in a rat model of cardiac failure induced by coronary artery ligation

Kompa, A. R. & Summers, R. J., 2000, In: *Journal of Pharmacological and Toxicological Methods*. p. 199 - 203 5 p.

Novel strategy for the synthesis of template-assembled analogues of rat relaxin

Mathieu, M., Wade, J. D., Tan, Y. Y., Summers, R. J. & Tregear, G. W., 2000, In: *Journal of Peptide Science*. p. 235 - 242 8 p.

Separate roles for Beta2- and Beta3-adrenoceptors in memory consolidation

Gibbs, M. E. & Summers, R. J., 2000, In: *Neuroscience*. p. 913 - 922 10 p.

Separate roles for β_2 - and β_3 -adrenoceptors in memory consolidation

Gibbs, M. E. & Summers, R. J., 1 Dec 1999, In: *Neuroscience*. 95, 3, p. 913-922 10 p.

β s-Adrenoceptors: Their role and regulation in the gastrointestinal tract

Summers, R. J., Roberts, S. J., Hutchinson, D. S. & Evans, B. A., 1 Dec 1999, *Proceedings of the Western Pharmacology Society*. USA, Vol. 42. p. 115-117 3 p.

Alternative splicing generates two isoforms of the β_3 -adrenoceptor which are differentially expressed in mouse tissues

Evans, B. A., Papaioannou, M., Hamilton, S. & Summers, R. J., 10 Aug 1999, In: *British Journal of Pharmacology*. 127, 6, p. 1525-1531 7 p.

Characterization of β -adrenoceptor mediated smooth muscle relaxation and the detection of mRNA for β_1 -, β_2 - and β_3 -adrenoceptors in rat ileum

Roberts, S. J., Papaioannou, M., Evans, B. A. & Summers, R. J., 6 Jul 1999, In: *British Journal of Pharmacology*. 127, 4, p. 949-961 13 p.

Functional analysis of desensitization of the β -adrenoceptor signalling pathway in rat cardiac tissues following chronic isoprenaline infusion

McMartin, L. & Summers, R. J., 6 Jul 1999, In: *British Journal of Pharmacology*. 127, 4, p. 1012-1020 9 p.

The role of the sympathetic nervous system in the regulation of leptin synthesis in C57BL/6 mice

Evans, B. A., Agar, L. & Summers, R. J., 12 Feb 1999, In: *FEBS Letters*. 444, 2-3, p. 149-154 6 p.

Desensitization and resensitization of β_1 - and putative β_4 -adrenoceptor mediated responses occur in parallel in a rat model of cardiac failure

Kompa, A. R. & Summers, R. J., 1 Jan 1999, In: *British Journal of Pharmacology*. 128, 7, p. 1399-1406 8 p.

Desensitization of cardiac β -adrenoceptor signaling with heart failure produced by myocardial infarction in the rat.

Evidence for the role of Gi but not Gs or phosphorylating proteins

Kompa, A. R., Gu, X. H., Evans, B. A. & Summers, R. J., 1 Jan 1999, In: *Journal of Molecular and Cellular Cardiology*. 31, 6, p. 1185-1201 17 p.

Erratum: The role of the sympathetic nervous system in the regulation of leptin synthesis in C57BL/6 mice (FEBS 21523) (FEBS Letters 444 (1999) (149-154) PII: S0014579399000496)

Evans, B. A., Agar, L. & Summers, R. J., 1 Jan 1999, In: *FEBS Letters*. 451, 2, 1 p.

Actions of beta3-adrenoceptor agonists in memory consolidation

Gibbs, M. E. & Summers, R. J., 1999, p. 27 - Oral 2-5. 1 p.

Alternative splicing generates two isoforms of the beta3-adrenoceptor which are differentially expressed in mouse tissues
Evans, B. A., Papaioannou, M., Hamilton, S. & Summers, R. J., 1999, In: British Journal of Pharmacology. p. 1525 - 1531
7 p.

Beta-adrenoceptors

Summers, R. J., 1999, In: Trends in Pharmacological Sciences, Receptor and Ion Channel Supplement. p. 13 - 14 2 p.

Characterization of beta-adrenoceptor mediated smooth muscle relaxation and the detection of mRNA for beta1- beta2- and beta3- adrenoceptors in rat ileum

Roberts, S. J., Papaioannou, M., Evans, B. A. & Summers, R. J., 1999, In: British Journal of Pharmacology. p. 949 - 961
13 p.

Characterization of ileal beta-adrenoceptor mediated responses in beta3-adrenoceptor knockout mice

Hutchinson, D. S. & Summers, R. J., 1999, p. 104 - Post 1-64. 1 p.

Desensitisation and resensitisation of beta1- and putative beta4-adrenoceptor mediated responses occur in parallel in a rat model of cardiac failure

Kompa, A. R. & Summers, R. J., 1999, In: British Journal of Pharmacology. p. 1399 - 1406 8 p.

Desensitisation of cardiac beta-adrenoceptor signaling with heart failure produced by myocardial infarction in the rat. Evidence for the role of Gi but not Gs or phosphorylating proteins

Kompa, A. R., Gu, X-H., Evans, B. A. & Summers, R. J., 1999, In: Journal of Molecular and Cellular Cardiology. p. 1185 - 1201 17 p.

Desensitisation of inotropic responses to human gene 2 (B29) relaxin in a rat model of congestive heart failure is enhanced by treatment with pertussis toxin

Kompa, A. R. & Summers, R. J., 1999, p. 93 - Post 1-41. 1 p.

Functional analysis of desensitization of the beta-adrenoceptor signalling pathway in rat cardiac tissues following chronic isoprenaline infusion

McMartin, L. & Summers, R. J., 1999, In: British Journal of Pharmacology. p. 1012 - 1020 9 p.

Inotropic responses to human gene 2 (B29) relaxin are reduced in a rat model of myocardial infarction (MI)

Kompa, A. R. & Summers, R. J., 1999, p. Poster 21 - Poster 21. 1 p.

Quantitative autoradiographic studies of relaxin binding in rat atria, uterus and cerebral cortex: characterization and effects of oestrogen treatment

Tan, Y. Y., Wade, J. D., Tregear, G. W. & Summers, R. J., 1999, In: British Journal of Pharmacology. p. 91 - 98 8 p.

Regulation of immediate early gene expression by the beta3-adrenoceptor agonist CL316243 in rat brain

Castillo-Melendez, M. E. & Summers, R. J., 1999, p. 118 - Post 1-92. 1 p.

Relaxin and relaxin-related peptides: synthesis, structure and biological function

Tregear, G. W., Bathgate, R., Dawson, N. F., Ferraro, T., Macris, M., Mathieu, M., Summers, R. J., Tan, Y. Y., Zhao, L. & Wade, J. D., 1999, p. Lect. 054 - 0 p.

Role of adrenoceptor subtypes in consolidation of memory by noradrenaline

Gibbs, M. E. & Summers, R. J., 1999, p. 151 - 151. 1 p.

Solid-phase synthesis of ovine Leydig cell insulin-like peptide - a putative ovine relaxin?

Dawson, N. F., Tan, Y. Y., Macris, M., Otvos Jnr, L., Summers, R. J., Tregear, G. W. & Wade, J. D., 1999, In: Journal of Peptide Research. p. 542 - 547 6 p.

The role of thyroid hormone in regulation of beta adrenoceptor mediated relaxation of rat ileal smooth muscle

Brown, K. J. & Summers, R. J., 1999, p. 105 - Post 1-65. 1 p.

The search for a fourth beta-adrenoceptor

Evans, B. A. & Summers, R. J., 1999, p. 27 - Oral 2-6. 1 p.

Towards defining the biologically active site of relaxin

Wade, J. D., Tan, Y. Y., Otvos Jnr, L., Summers, R. J. & Tregear, G. W., 1999, p. Poster 870 -. 1 p.

The effects of the β_3 -adrenoceptor agonist BRL 35135 on UCP isoform mRNA expression

Emilsson, V., Summers, R. J., Hamilton, S., Liu, Y. L. & Cawthorne, M. A., 18 Nov 1998, In: Biochemical and Biophysical Research Communications. 252, 2, p. 450-454 5 p.

Regulation of β -adrenoceptors in a rat model of cardiac failure: Effect of perindopril

Gu, X. H., Kompa, A. R. & Summers, R. J., 1 Jul 1998, In: Journal of Cardiovascular Pharmacology. 32, 1, p. 66-74 9 p.

Differential regulation of β_3 -adrenoceptors in gut and adipose tissue of genetically obese (ob/ob) C57BL/6J-mice

Evans, B. A., Papaioannou, M., Anastasopoulos, F. & Summers, R. J., 26 Jun 1998, In: British Journal of Pharmacology. 124, 4, p. 763-771 9 p.

Cyclic AMP accumulation in rat soleus muscle: Stimulation by β_2 - but not β_3 -adrenoceptors

Roberts, S. J. & Summers, R. J., 1 May 1998, In: European Journal of Pharmacology. 348, 1, p. 53-60 8 p.

Cardiac binding of [3 H]inositol 1,4,5-trisphosphate following chronic stimulation of cyclic AMP signalling in guinea pigs

McMartin, L. & Summers, R. J., 1 Jan 1998, In: Pharmacological Research. 37, 2, p. 103-109 7 p.

β_3 -Adrenoceptors: Differential regulation and novel subtypes

Summers, R. J., Hutchinson, D. S. & Evans, B. A., 1 Jan 1998, In: Pharmacy and Toxicology, Supplement. 83, 1, p. 37-39 3 p.

A single amino acid substitution confers relaxin-like activity in sheep leydig cell insulin-like peptide (LEY I-L)

Tan, Y. Y., Dawson, N. F., Wade, J. D., Tregear, G. W. & Summers, R. J., 1998, p. 47 - 47. 1 p.

Alternative splicing generates two isoforms of the β_3 - adrenoceptor which are differentially expressed in mouse tissues

Summers, R. J., Papaioannou, M., Hamilton, S. & Evans, B. A., 1998, p. 52P - 52P. 1 p.

Alternative splicing generates two isoforms of the mouse β -adrenoceptor

Summers, R. J., Papaioannou, M., Hamilton, S. & Evans, B. A., 1998, p. 94 A11 - 94 A11. 1 p.

Alternative splicing generates two isoforms of the mouse β_3 -adrenoceptor

Summers, R. J., Papaioannou, M., Hamilton, S. & Evans, B. A., 1998, p. R612 - R612. 1 p.

β_3 -adrenoreceptors: differential regulations and novel subtypes

Summers, R. J., Hutchinson, D. S. & Evans, B. A., 1998, *Pharmacology and Toxicology*. Copenhagen Denmark: Nordic Pharmacological Society, p. 37 - 39 3 p.

Binding characteristics of the relaxin receptor in rat brain

Tan, Y. Y., Wade, J. D., Tregear, G. W. & Summers, R. J., 1998, p. 46 O8-3 - 46 O8-3. 1 p.

Cloning and expression of two isoforms of the β_3 -adrenoceptor which are differentially expressed in mouse tissues

Evans, B. A., Hutchinson, D. S., Papaioannou, M., Hamilton, S. & Summers, R. J., 1998, p. 130 - 130. 1 p.

Comparison of β_1 and putative β_4 - adrenoceptor (AR) mediated responses in a rat model of cardiac failure

Kompa, A. R. & Summers, R. J., 1998, p. 184 - 184. 1 p.

Comparison of relaxin receptors in rat isolated atria and uterus by use of synthetic and native relaxin analogues

Tan, Y. Y., Wade, J. D., Tregear, G. W. & Summers, R. J., 1998, In: British Journal of Pharmacology. p. 762 - 770 9 p.

Differential regulation of β_3 -adrenoceptors (ARs) in mouse ileum and adipose tissues by the β_3 -AR agonist CL 316243 and the β_3 -AR antagonist SR 59230A

Hutchinson, D. S., Evans, B. A. & Summers, R. J., 1998, p. R613 - R613. 1 p.

Generation of two isoforms of the mouse β_3 -adrenoceptor by alternative splicing

Summers, R. J., Papaioannou, M., Hamilton, S. & Evans, B. A., 1998, p. 150 P111 - 150 P111. 1 p.

Ovine leydig cell insulin-like peptide is not a sheep relaxin

Dawson, N. F., Macris, M., Otvos Jnr, L., Summers, R. J., Tan, Y. Y., Tregear, G. W. & Wade, J. D., 1998, p. c44 - c44. 1 p.

Ovine leydig cell insulin-like peptide: a sheep relaxin?

Wade, J. D., Dawson, N. F., Roche, P. J., Otvos Jnr, L., Summers, R. J., Tan, Y. Y. & Tregear, G. W., 1998, *Peptide Science - Present and Future*. UK: Springer (Kluwer Academic Publishers - Biomedical Engineering Society (BMES)), p. 756 - 760 5 p.

Reduced β -adrenoceptor (β -AR) function in a rat model of myocardial infarctions due to changes in G-protein mRNA

Kompa, A. R. & Summers, R. J., 1998, p. 27 P19 - 27 P19. 1 p.

Reduced β -adrenoceptor(β -AR)function in a rat model of myocardial infarction(MI) is not associated with changes in expression of receptor phosphorylating enzymes

Kompa, A. R., Evans, B. A. & Summers, R. J., 1998, p. 145 P102 - 145 P102. 1 p.

Regulation of β_3 -adrenoceptors (AR) by thyroid hormone in tissue cultures of rat ileal smooth muscle

Roberts, S. J., Hamilton, S. & Summers, R. J., 1998, p. 129 - 129. 1 p.

The effects of the β_3 -adrenoceptor agonist BRL 35134 on UCP isoform mRNA expression

Emilsson, V., Summers, R. J., Hamilton, S., Liu, Y. L. & Cawthorne, M. A., 1998, In: Biochemical and Biophysical Research Communications. p. 450 - 454 5 p.

The pharmacological properties of the mouse β_3a and β_3b - adrenoceptor expressed in CHO - KI cells studied using the cytosensor R microphysiometer

Hutchinson, D. S., Evans, B. A. & Summers, R. J., 1998, p. 174 - 174. 1 p.

The pharmacology of relaxin and related peptides

Summers, R. J., Tan, Y. Y., Wade, J. D., Dawson, N. F. & Tregear, G. W., 1998, p. 8 - 8. 1 p.

The role of G-Proteins in reduced β -adrenoceptor(β -AR function in a rat model of myocardial infarction(MI)

Kompa, A. R. & Summers, R. J., 1998, p. 93 A6 - 93 A6. 1 p.

The role of G-proteins in reduced β -adrenoceptors (β -AR) function in a rat model of myocardial infarction (MI)

Kompa, A. R. & Summers, R. J., 1998, p. Oral 1 - Oral 1. 1 p.

Functional and molecular evidence for β_1 -, β_2 - and β_3 -adrenoceptors in human colon

Roberts, S. J., Papaioannou, M., Evans, B. A. & Summers, R. J., 1 Jan 1997, In: British Journal of Pharmacology. 120, 8, p. 1527-1535 9 p.

β -adrenoceptor subtypes and their desensitization mechanisms

Summers, R. J., Kompa, A. & Roberts, S. J., 1 Jan 1997, In: Journal of Autonomic Pharmacology. 17, 6, p. 331-343 13 p.

Characterisation of relaxin binding in the rat brain

Tan, Y. T., Wade, J. D., Tregear, G. W. & Summers, R. J., 1997, p. 29 - 29. 1 p.

Examination of the relative contribution of β_1 - β_2 - and β_3 - adrenoceptor (AR) subtypes mediating smooth muscle relaxation in rat ileum

Roberts, S. J. & Summers, R. J., 1997, p. 102 - 102. 1 p.

Reduced β adrenoceptor (β - AR) function in a rat model of myocardial infarction (MI) involves changes at the level of G - proteins

Kompa, A. R. & Summers, R. J., 1997, p. 52 - 52. 1 p.

Chronic (-)-isoprenaline infusion down-regulates β_1 - and β_2 -adrenoceptors but does not transregulate muscarinic cholinergic receptors in rat heart

Matthews, J. M., Falckh, P. H. J., Molenaar, P. & Summers, R. J., 1 Dec 1996, In: Naunyn-Schmiedeberg's Archives of Pharmacology. 353, 2, p. 213-225 13 p.

Expression of β_3 -adrenoceptor mRNA in rat tissues

Evans, B. A., Papaioannou, M., Bonazzi, V. R. & Summers, R. J., 1 Jan 1996, In: British Journal of Pharmacology. 117, 1, p. 210-216 7 p.

[³H]Forskolin binding to cardiac adenylate cyclase in guinea pigs chronically infused with isoproterenol

McMartin, L. & Summers, R. J., 4 Aug 1995, In: Life Sciences. 57, 11, p. 1039-1049 11 p.

β -Adrenoceptor regulation and functional responses in the guinea-pig following chronic administration of the long-acting β_2 -adrenoceptor agonist formoterol

Kompa, A. R., Molenaar, P. & Summers, R. J., 1 Jun 1995, In: Naunyn-Schmiedeberg's Archives of Pharmacology. 351, 6, p. 576-588 13 p.

Australasian Society of Clinical and Experimental Pharmacologists and Toxicologists, 1994: SIGNALLING PATHWAYS IN CARDIAC FAILURE

Summers, R. J., McMartin, L. R., Kompa, A., Gu, X. & Molenaar, P., 1 Jan 1995, In: Clinical and Experimental Pharmacology and Physiology. 22, 11, p. 874-876 3 p.

Autoradiography of beta 1- and beta 2-adrenoceptors.

Summers, R. J. & Molenaar, P., 1 Jan 1995, In: Methods in Molecular Biology. 41, p. 25-39 15 p.

Characterization and localization of atypical β -adrenoceptors in rat ileum

Roberts, S. J., Russell, F. D., Molenaar, P. & Summers, R. J., 1 Jan 1995, In: British Journal of Pharmacology. 116, 6, p. 2549-2556 8 p.

Expression of β_3 -adrenoceptor mRNA in rat brain

Summers, R. J., Papaioannou, M., Harris, S. & Evans, B. A., 1 Jan 1995, In: British Journal of Pharmacology. 116, 6, p. 2547-2548 2 p.

Localisation and characterisation of atypical β -adrenoceptors in skeletal muscle and gut

Summers, R. J., Russell, F. D., Roberts, S. J., Bonazzi, V. R., Sharkey, A., Evans, B. A. & Molenaar, P., 1 Jan 1995, In: Pharmacology Communications. 6, 1-3, p. 237-252 16 p.

β -Adrenoceptor regulation in rat heart, lung and skin after chronic treatment with (-)-terbutolol or (-)-propranolol

Tan, Y. Y. & Summers, R. J., 1 Jan 1995, In: Journal of Autonomic Pharmacology. 15, 6, p. 421-436 16 p.

Excitatory amino acid projections to the nucleus of the solitary tract in the rat: a retrograde transport study utilizing d-³H]aspartate and [³H]GABA

Beart, P. M., Summers, R. J., Stephenson, J. A. & Christie, M. J., 1 Dec 1994, In: Journal of the Autonomic Nervous System. 50, 1, p. 109-122 14 p.

Regulation of β -adrenoceptors in the guinea-pig sinoatrial node

Russell, F. D., Kompa, A. R., Molenaar, P. & Summers, R. J., 1 May 1994, In: Naunyn-Schmiedeberg's Archives of Pharmacology. 349, 5, p. 463-472 10 p.

Autoradiographic Localization and Quantitation of β_1 - and β_2 -Adrenoceptors in the Human Atrioventricular Conducting System: A Comparison of Patients with Idiopathic Dilated Cardiomyopathy and Ischemic Heart Disease

Elnatan, J., Molenaar, P., Rosenfeldt, F. L. & Summers, R. J., 1 Jan 1994, In: Journal of Molecular and Cellular Cardiology. 26, 3, p. 313-323 11 p.

Effect of chemical sympathectomy on (-)-isoprenaline-induced changes in cardiac β -adrenoceptor subtypes in the guinea-pig and rat

Kompa, A. R., Molenaar, P. & Summers, R. J., 1 Jan 1994, In: Journal of Autonomic Pharmacology. 14, 6, p. 411-423 13 p.

β -adrenoceptor subtypes in the atrioventricular conducting system and myocardium of spontaneously hypertensive rats: Effects of angiotensin-converting enzyme inhibition by perindopril

Matthews, J. M., Molenaar, P. & Summers, R. J., 1 Jan 1994, In: Journal of Cardiovascular Pharmacology. 23, 5, p. 691-697 7 p.

Adrenoceptors and Their Second Messenger Systems

Summers, R. J. & McMartin, L. R., 1 Jan 1993, In: Journal of Neurochemistry. 60, 1, p. 10-23 14 p.

Cardiac effects of relaxin

Saxena, P. R., Bax, W. A., Du, X. Y., Schoemaker, R. G., Kakouris, H., Eddie, L. W. & Summers, R. J., 1 Jan 1993, In: Trends in Pharmacological Sciences. 14, 6, p. 231-232 2 p.

Characterization of propranolol-resistant (-)-[¹²⁵I]-cyanopindolol binding sites in rat soleus muscle

Roberts, S. J., Molenaar, P. & Summers, R. J., 1 Jan 1993, In: British Journal of Pharmacology. 109, 2, p. 344-352 9 p.

Kakouris et al. reply

Kakouris, H., Eddie, L. W. & Summers, R. J., 1 Jan 1993, In: Trends in Pharmacological Sciences. 14, 6, 1 p.

Relaxin: more than just a hormone of pregnancy

Kakouris, H., Eddie, L. W. & Summers, R. J., 1 Jan 1993, In: Trends in Pharmacological Sciences. 14, 1, p. 4-6 3 p.

The mouse relaxin gene: Nucleotide sequence and expression

Evans, B. A., John, M., Fowler, K. J., Summers, R. J., Cronk, M., Shine, J. & Tregear, G. W., 1 Jan 1993, In: Journal of Molecular Endocrinology. 10, 1, p. 15-23 9 p.

Cardiac effects of relaxin in rats

Kakouris, H., Eddie, L. W. & Summers, R. J., 2 May 1992, In: The Lancet. 339, 8801, p. 1076-1078 3 p.

Localization of (-)-[¹²⁵I]cyanopindolol binding in guinea-pig heart: characteristics of non- β -adrenoceptor related binding in cardiac pacemaker and conducting regions

Molenaar, P., Kompa, A. R., Roberts, S. J., Pak, H. S. & Summers, R. J., 17 Feb 1992, In: Neuroscience Letters. 136, 1, p. 118-122 5 p.

Absence of mitochondrial β -adrenoceptors in guinea pig myocardium: Evidence for tissue disparity
Russell, F. D., Molenaar, P. & Summers, R. J., 1 Jan 1992, In: General Pharmacology. 23, 5, p. 827-832 6 p.

Cimaterol reduces beta-adrenergic receptor density in rat skeletal muscles.
Kim, Y. S., Sainz, R. D., Summers, R. J. & Molenaar, P., 1 Jan 1992, In: Journal of Animal Science. 70, 1, p. 115-122 8 p.

Regulation of guinea-pig cardiac β -adrenoceptor subtypes after (-)-adrenaline and (-)-noradrenaline treatment
Kompa, A. R., Molenaar, P. & Summers, R. J., 1 Jan 1992, In: Molecular Neuropharmacology. 1, 4, p. 203-210 8 p.

Localization and characterization of two propranolol resistant (-) [125 I]cyanopindolol binding sites in rat skeletal muscle
Molenaar, P., Roberts, S. J., Kim, Y. S., Pak, H. S., Sainz, R. D. & Summers, R. J., 17 Dec 1991, In: European Journal of Pharmacology. 209, 3, p. 257-262 6 p.

Autoradiographic localization and quantitation of β -adrenoceptor subtypes in the guinea-pig sinoatrial node
Russell, F. D., Molenaar, P., Edyvane, N., Smolich, J. J. & Summers, R. J., 1 Dec 1991, In: Molecular Neuropharmacology. 1, 3, p. 141-147 7 p.

Characterization of β_1 - and β_2 -adrenoceptors in rat skeletal muscles
Kim, Y. S., Sainz, R. D., Molenaar, P. & Summers, R. J., 9 Oct 1991, In: Biochemical Pharmacology. 42, 9, p. 1783-1789 7 p.

Characterization and high resolution autoradiographic localization of β -adrenoceptors in ventricular and conducting regions of guinea-pig heart
Russell, F. D., Molenaar, P., Edyvane, N. & Summers, R. J., 4 Jul 1990, In: European Journal of Pharmacology. 183, 4, 1 p.

Differential regulation of β_1 - and β_2 -adrenoceptors in guinea-pig atrioventricular conducting system after chronic (-)-isoprenaline infusion
Summers, R. J., Smolich, J. J., Russell, F. D., McMartin, L. R. & Molenaar, P., 4 Jul 1990, In: European Journal of Pharmacology. 183, 4, p. 1228-1229 2 p.

Localization and function of components of the β -adrenergic system in human and blood vessels
Summers, R. J., 1 Jul 1990, In: European Journal of Pharmacology. 183, 1, 1 p.

The autoradiographic localization of adenylate cyclase in rat kidney using [3 H]forskolin
McMartin, L. R. & Summers, R. J., 15 Mar 1990, In: Biochemical Pharmacology. 39, 6, p. 1019-1028 10 p.

Antidepressant binding sites in brain: Autoradiographic comparison of [3 H]paroxetine and [3 H]imipramine localization and relationship to serotonin transporter
Hrdina, P. D., Foy, B., Hepner, A. & Summers, R. J., 1 Jan 1990, In: Journal of Pharmacology and Experimental Therapeutics. 252, 1, p. 410-418 9 p.

Densitometric analysis of β_1 - and β_2 -adrenoceptors in guinea-pig atrioventricular conducting system
Molenaar, P., Russell, F. D., Shimada, T. & Summers, R. J., 1 Jan 1990, In: Journal of Molecular and Cellular Cardiology. 22, 4, p. 483-495 13 p.

Differential regulation of beta-1 and beta-2 adrenoceptors in guinea pig atrioventricular conducting system after chronic (-)-isoproterenol infusion
Molenaar, P., Smolich, J. J., Russell, F. D., McMartin, L. R. & Summers, R. J., 1 Jan 1990, In: Journal of Pharmacology and Experimental Therapeutics. 255, 1, p. 393-400 8 p.

Effects of prolonged infusion of dopexamine on β_1 - and β_2 -adrenoceptors in guinea-pig myocardium
Williams, D. W., Elnatan, J., Molenaar, P. & Summers, R. J., 1 Jan 1990, In: Journal of Autonomic Pharmacology. 10, 3, p. 127-138 12 p.

Excitatory amino acid projections to the periaqueductal gray in the rat: A retrograde transport study utilizing d[³H]aspartate and [³H]GABA

Beart, P. M., Summers, R. J., Stephenson, J. A., Cook, C. J. & Christie, M. J., 1 Jan 1990, In: Neuroscience. 34, 1, p. 163-176 14 p.

Regulation of β_1 -, β_2 -adrenoceptors and adenylate cyclase in guinea-pig heart after chronic (-)-isoprenaline infusion

Williams, D. W., Bull, G. D. J., McMartin, L. R., Molenaar, P. & Summers, R. J., 1 Jan 1990, In: European Journal of Pharmacology. 183, 3, p. 1003-1004 2 p.

SIMUL: an accurate method for the determination of receptor subtype proportions using a personal computer

Williams, D. W. & Summers, R. J., 1 Jan 1990, In: Computer Methods and Programs in Biomedicine. 32, 2, p. 137-139 3 p.

Biochemical characterization of an autoradiographic method for studying excitatory amino acid receptors using I-[³H]glutamate

Cincotta, M., Summers, R. J. & Beart, P. M., 15 Feb 1989, In: Analytical Biochemistry. 177, 1, p. 150-155 6 p.

Bidirectional transport of NMDA receptor and ionophore in the vagus nerve

Cincotta, M., Beart, P. M., Summers, R. J. & Lodge, D., 24 Jan 1989, In: European Journal of Pharmacology. 160, 1, p. 167-171 5 p.

Coexistence and localization of β_1 - and β_2 -adrenoceptors in the human heart

Summers, R. J., Molenaar, P., Russell, F., Elnatan, J., Jones, C. R., Buxton, B. F., Chang, V. & Hambley, J., 1 Jan 1989, In: European Heart Journal. 10, SUPPL. B, p. 11-21 11 p.

FUNCTION, CHARACTERIZATION AND AUTORADIOGRAPHIC LOCALIZATION AND QUANTITATION OF β -ADRENOCEPTORS IN CARDIAC TISSUES

Molenaar, P., Russell, F. D., Shimada, T. & Summers, R. J., 1 Jan 1989, In: Clinical and Experimental Pharmacology and Physiology. 16, 6, p. 529-533 5 p.

NEW TOOLS FOR THE LOCALIZATION OF SECOND MESSENGER SYSTEMS

Summers, R. J. & McMartin, L. R., 1 Jan 1989, In: Clinical and Experimental Pharmacology and Physiology. 16, 6, p. 549-553 5 p.

New views of human cardiac β -adrenoceptors

Jones, C. R., Molenaar, P. & Summers, R. J., 1 Jan 1989, In: Journal of Molecular and Cellular Cardiology. 21, 5, p. 519-535 17 p.

Persistent β -adrenoceptor blockade with alkylating pindolol (BIM) in guinea-pig left atria and trachea

Molenaar, P., Russell, F., Pitha, J. & Summers, R., 1 Oct 1988, In: Biochemical Pharmacology. 37, 19, p. 3601-3607 7 p.

An autoradiographic study of muscarinic cholinceptors in blood vessels: no localization on vascular endothelium

Stephenson, J. A., Gibson, R. E. & Summers, R. J., 24 Aug 1988, In: European Journal of Pharmacology. 153, 2-3, p. 271-283 13 p.

Inhibition by cAMP of the phosphoinositide response to α_1 -adrenoceptor stimulation in rat kidney

Neylon, C. B. & Summers, R. J., 13 Apr 1988, In: European Journal of Pharmacology. 148, 3, p. 441-444 4 p.

Autoradiographic localization and densitometric analysis of beta-1 and beta-2 adrenoceptors in the canine left anterior descending coronary artery

Molenaar, P., Jones, C. R., McMartin, L. R. & Summers, R. J., 1 Jan 1988, In: Journal of Pharmacology and Experimental Therapeutics. 246, 1, p. 384-393 10 p.

Autoradiographic localization and function of β -adrenoceptors on the human internal mammary artery and saphenous vein
Molenaar, P., Malta, E., Jones, C. R., Buxton, B. F. & Summers, R. J., 1 Jan 1988, In: British Journal of Pharmacology. 95, 1, p. 225-233 9 p.

Reduced glutamate binding in rat dorsal vagal complex after nodose ganglionectomy

Lewis, S. J., Verberne, A. J. M., Summers, R. J., Beart, P. M. & Cincotta, M., 1 Jan 1988, In: Brain Research Bulletin. 21, 6, p. 913-916 4 p.

β -ADRENOCEPTORS IN CIRCULAR AND LONGITUDINAL MYOMETRIAL MEMBRANES AND IN LUNG MEMBRANES FROM DIOESTROUS AND POST-PARTUM GUINEA-PIGS

Handberg, G. M., Davis, E. A., Hall, S., Molenaar, P., Summers, R. J. & Pennefather, J. N., 1 Jan 1988, In: Clinical and Experimental Pharmacology and Physiology. 15, 9, p. 681-693 13 p.

Autoradiographic localization and characterization of substance P binding in dog kidney

Stephenson, J. A., Summers, R. J. & Burcher, E., 27 Oct 1987, In: European Journal of Pharmacology. 142, 3, p. 391-402 12 p.

The distribution of β -adrenoceptors in dog kidney: an autoradiographic analysis

Law, R. & Summers, R. J., 4 Aug 1987, In: European Journal of Pharmacology. 140, 1, p. 1-11 11 p.

Autoradiographic localization of beta-1 and beta-2 adrenoceptors in guinea pig atrium and regions of the conducting system.

Molenaar, P., Canale, E. & Summers, R. J., 1 Jun 1987, In: Journal of Pharmacology and Experimental Therapeutics. 241, 3, p. 1048-1064 17 p.

Characterization of beta-1 and beta-2 adrenoceptors in guinea pig atrium: functional and receptor binding studies.

Molenaar, P. & Summers, R. J., 1 Jun 1987, In: Journal of Pharmacology and Experimental Therapeutics. 241, 3, p. 1041-1047 7 p.

Autoradiographic analysis of receptors on vascular endothelium

Stephenson, J. A. & Summers, R. J., 28 Jan 1987, In: European Journal of Pharmacology. 134, 1, p. 35-43 9 p.

AUTORADIOGRAPHIC LOCALIZATION OF RECEPTORS IN THE MAMMALIAN CARDIOVASCULAR SYSTEM

Summers, R. J., Molenaar, P., Stephenson, J. A. & Jones, C. R., 1 Jan 1987, In: Clinical and Experimental Pharmacology and Physiology. 14, 5, p. 437-447 11 p.

Autoradiographic localization of receptors in the cardiovascular system

Summers, R. J., Molenaar, P. & Stephenson, J. A., 1 Jan 1987, In: Trends in Pharmacological Sciences. 8, 7, p. 272-276 5 p.

CHARACTERIZATION AND LOCALIZATION OF (—)[125I]-CYANOPINDOLOL BINDING TO NON- β -ADRENOCEPTOR SITES IN DOG KIDNEY

Lew, R. & Summers, R. J., 1 Jan 1987, In: Clinical and Experimental Pharmacology and Physiology. 14, 9, p. 711-723 13 p.

Characterization and autoradiographic localization of β -adrenoceptor subtypes in human cardiac tissues

Buxton, B. F., Jones, C. R., Molenaar, P. & Summers, R. J., 1 Jan 1987, In: British Journal of Pharmacology. 92, 2, p. 299-310 12 p.

Excitatory amino acid projections to the nucleus accumbens septi in the rat: A retrograde transport study utilizing d[³H]aspartate and [³H]GABA

Christie, M. J., Summers, R. J., Stephenson, J. A., Cook, C. J. & Beart, P. M., 1 Jan 1987, In: Neuroscience. 22, 2, p. 425-439 15 p.

Stimulation of α_1 -adrenoceptors in rat kidney mediates increased inositol phospholipid hydrolysis
Neylon, C. B. & Summers, R. J., 1 Jan 1987, In: British Journal of Pharmacology. 91, 2, p. 367-376 10 p.

Autoradiographic demonstration of endothelium-dependent 125I-Bolton-Hunter substance P binding to dog carotid artery
Stephenson, J. A., Burcher, E. & Summers, R. J., 27 May 1986, In: European Journal of Pharmacology. 124, 3, p. 377-378 2 p.

The characteristics of low and high affinity [3 H]-prazosin binding to membranes from rat renal cortex
McPherson, G. A. & Summers, R. J., 1 Feb 1986, In: Biochemical Pharmacology. 35, 3, p. 515-519 5 p.

AUTORADIOGRAPHIC ANALYSIS OF (-)-[125I]-CYP BINDING IN MOUSE KIDNEY
Lew, R. & Summers, R. J., 1 Jan 1986, In: Clinical and Experimental Pharmacology and Physiology. 13, 3, p. 211-221 11 p.

AUTORADIOGRAPHIC EVIDENCE FOR A HETEROGENEOUS DISTRIBUTION OF α_1 -ADRENORECEPTORS LABELLED BY [3 H] PRAZOSIN IN RAT, DOG AND HUMAN KIDNEY
STEPHENSON, JENNIFER. A. & SUMMERS, R. J., 1 Jan 1986, In: Journal of Autonomic Pharmacology. 6, 2, p. 109-116 8 p.

Autoradiographic analysis of the distribution of β -adrenoceptors in the dog splenic vasculature
Lipe, S. & Summers, R. J., 1 Jan 1986, In: British Journal of Pharmacology. 87, 3, p. 603-609 7 p.

Changes in the innervation and catecholamine concentrations in the myometrium of pregnant and non-pregnant sheep¹
Sigger, J. N., Harding, R. & Summers, R. J., 1 Jan 1986, In: Cells Tissues Organs. 125, 2, p. 101-107 7 p.

THE INFLUENCE OF AGE AND SEX ON CARDIAC, RENAL AND CAUDAL ARTERY CATECHOLAMINE CONTENT IN SPONTANEOUSLY HYPERTENSIVE (SHR) AND WISTAR KYOTO (WKY) RATS
HOWES, L. G., SUMMERS, R. J. & LOUIS, W. J., 1 Jan 1986, In: Journal of Autonomic Pharmacology. 6, 3, p. 171-180 10 p.

Light microscopic autoradiography of the distribution of [3H]rauwolscine binding to α_2 -adrenoceptors in rat kidney
Stephenson, J. A. & Summers, R. J., 22 Oct 1985, In: European Journal of Pharmacology. 116, 3, p. 271-278 8 p.

Localization of β -adrenoceptors in the rabbit ear by light microscopic autoradiography
Johnston, H. G. & Summers, R. J., 10 Sep 1985, In: European Journal of Pharmacology. 115, 1, p. 97-101 5 p.

Changes in brainstem and spinal adrenoceptor binding with ageing in spontaneously hypertensive and Wistar-Kyoto rats
Howes, L. G. & Summers, R. J., 24 Jun 1985, In: Neuroscience Letters. 57, 3, p. 247-250 4 p.

Autoradiographic localization of β -adrenoceptor subtypes in guinea-pig kidney
Lew, R. & Summers, R. J., 1 Jan 1985, In: British Journal of Pharmacology. 85, 2, p. 341-348 8 p.

Localization of beta adrenoceptor subtypes in rat kidney by light microscopic autoradiography
Summers, R. J., Stephenson, J. A. & Kuhar, M. J., 1 Jan 1985, In: Journal of Pharmacology and Experimental Therapeutics. 232, 2, p. 561-569 9 p.

The measurement of central noradrenergic activity in spontaneously hypertensive rats: A comparison of free 3,4-dihydroxyphenylethyleneglycol levels with FLA-63 induced noradrenaline depletion
Howes, L. G., Summers, R. J., Rowe, P. R. & Louis, W. J., 1 Jan 1985, In: Journal of Hypertension. 3, 3, p. 237-242 6 p.

[3 H]-rauwolscine binding to α_2 -adrenoceptors in the mammalian kidney: apparent receptor heterogeneity between species
Neylon, C. B. & Summers, R. J., 1 Jan 1985, In: British Journal of Pharmacology. 85, 2, p. 349-359 11 p.

α_2 -adrenoceptors in dog kidney: Autoradiographic localization and putative functions

Summers, R. J., Stephenson, J. A., Lipe, S. & Neylon, C. B., 1 Jan 1985, In: Clinical Science. 68, SUPPL. 10

Renal α adrenoceptors

Summers, R. J., 1 Dec 1984, In: Federation Proceedings. 43, 14, p. 2917-2922 6 p.

Age related changes of catecholamines and their metabolites in central nervous system regions of spontaneously hypertensive (SHR) and normotensive wistar-Kyoto (wky) rats:

Howes, L. G., Rowe, P. R., Summers, R. J. & Louis, W. J., 1 Jan 1984, In: Clinical and Experimental Hypertension. Part A: Theory and Practice. A6, 12, p. 2263-2277 15 p.

Assay of brain 3,4-dihydroxyphenylethyleneglycol (DHPG) levels by high-performance liquid chromatography with electrochemical detection. Factors affecting stability during sample preparation

Howes, L. G., Summers, R. J., Rowe, P. R. & Louis, W. J., 1 Jan 1984, In: Journal of Chromatography A. 287, C, p. 133-135 3 p.

Autoradiographic localization of adrenoceptors in peripheral tissues

Summers, R. J., 1 Jan 1984, In: Trends in Pharmacological Sciences. 5, C, p. 216-217 2 p.

Effects of Methyldopa Metabolites on Amine Transmitters and Adrenergic Receptors in Rat Brain

Louis, W. J., Conway, E., Summers, R., Beart, P. & Jarrott, B., 1 Jan 1984, In: Hypertension. 6, 5, p. 40-44 5 p.

The involvement of central alpha adrenoceptors in the antihypertensive actions of methyldopa and clonidine in the rat

Jarrott, B., Lewis, S., Conway, E. L., Summers, R. & Louis, W. J., 1 Jan 1984, In: Clinical and Experimental Hypertension. Part A: Theory and Practice. A6, 1-2, p. 387-400 14 p.

Time course of sympathetic denervation of the rat ovary after freezing its nerve supply

Gibson, W. R., Roche, P. J., Summers, R. J. & Wylie, S. N., 1 Jan 1984, In: Journal of Reproduction and Fertility. 72, 2, p. 429-433 5 p.

Effects of yohimbine stereoisomers on contractions of rat aortic strips produced by agonists with different selectivity for α_1 - and α_2 -adrenoceptors

Digges, K. G. & Summers, R. J., 9 Dec 1983, In: European Journal of Pharmacology. 96, 1-2, p. 95-99 5 p.

The characteristics of adrenoceptors in homogenates of human cerebral cortex labelled by (^3H)-rauwolscine

Summers, R. J., Barnett, D. B. & Nahorski, S. R., 12 Sep 1983, In: Life Sciences. 33, 11, p. 1105-1112 8 p.

The simultaneous determination of 3,4-dihydroxyphenylethylene glycol, 3,4-dihydroxyphenylacetic acid and catecholamines in brain tissue by high performance liquid chromatography with electrochemical detection

Howes, L. G., Summers, R. J., Rowe, P. R. & Louis, W. J., 8 Aug 1983, In: Neuroscience Letters. 38, 3, p. 327-332 6 p.

Autoradiographic localization of β -adrenoceptors in rat kidney

Summers, R. J. & Kuhar, M. J., 22 Jul 1983, In: European Journal of Pharmacology. 91, 2-3, p. 305-310 6 p.

Evidence from binding studies for β_1 -adrenoceptors associated with glomeruli isolated from rat kidney

McPherson, G. A. & Summers, R. J., 4 Jul 1983, In: Life Sciences. 33, 1, p. 87-94 8 p.

Evidence from binding studies for α_2 -adrenoceptors directly associated with glomeruli from rat kidney

McPherson, G. A. & Summers, R. J., 17 Jun 1983, In: European Journal of Pharmacology. 90, 4, p. 333-341 9 p.

Age related changes of noradrenaline content in brain regions of spontaneously hypertensive (SHR) and normotensive wistar-Kyoto (WK) rats

Howes, L. G., Rowe, P. R., Summers, R. J. & Louis, W. J., 1 Jan 1983, In: Clinical and Experimental Hypertension. Part A: Theory and Practice. A5, 6, p. 857-874 18 p.

Characterization of central α -adrenoceptors using ^3H -clonidine and its derivatives

Jarrott, B., Louis, W. J. & Summers, R. J., 1 Jan 1983, In: Chest. 83, Suppl. 2, p. 339-340 2 p.

Characterization of postsynaptic α -adrenoceptors in rat aortic strips and portal veins

Digges, K. G. & Summers, R. J., 1 Jan 1983, In: British Journal of Pharmacology. 79, 3, p. 655-665 11 p.

β -Adrenoceptor subtypes in the kidney

Summers, R. J. & McPherson, G. A., 1 Jan 1983, In: Trends in Pharmacological Sciences. 4, C, 1 p.

The relationship between α_2 -adrenoceptor selectivity and anticonvulsant effect in a series of clonidine-like drugs

Papanicolaou, J., Summers, R. J., Vajda, F. J. E. & Louis, W. J., 10 Jun 1982, In: Brain Research. 241, 2, p. 393-397 5 p.

Localisation of [^3H]clonidine binding to membranes from guinea pig renal tubules

McPherson, G. A. & Summers, R. J., 15 Feb 1982, In: Biochemical Pharmacology. 31, 4, p. 583-587 5 p.

Anticonvulsant effects of clonidine mediated through central α_2 -adrenoceptors

Papanicolaou, J., Summers, R. J., Vajda, F. J. E. & Louis, W. J., 22 Jan 1982, In: European Journal of Pharmacology. 77, 2-3, p. 163-166 4 p.

A STUDY OF α_1 -ADRENOCEPTORS IN RAT RENAL CORTEX: COMPARISON OF [^3H]PRAZOSIN BINDING WITH THE α_1 -ADRENOCEPTOR MODULATING GLUCONEOGENESIS UNDER PHYSIOLOGICAL CONDITIONS

McPHERSON, G. A. & SUMMERS, R. J., 1 Jan 1982, In: British Journal of Pharmacology. 77, 1, p. 177-184 8 p.

Anticonvulsant effects of clonidine on pentylenetetrazol (PTZ)-induced convulsions in rats

Papanicolaou, J., Summers, R. J., Vajda, F. J. E. & Louis, W. J., 1 Jan 1982, In: Clinical and Experimental Pharmacology and Physiology. 9, 4, 1 p.

CHARACTERIZATION AND LOCALIZATION OF [^3H]CLONIDINE BINDING IN MEMBRANES PREPARED FROM GUINEA-PIG SPLEEN

McPherson, G. A. & Summers, R. J., 1 Jan 1982, In: Clinical and Experimental Pharmacology and Physiology. 9, 1, p. 77-87 11 p.

Comparison of α -adrenoreceptors in aortic strips and portal veins of the rat

Digges, K. G. & Summers, R. J., 1 Jan 1982, In: Clinical and Experimental Pharmacology and Physiology. 9, 4, 1 p.

Correlation between [^3H]prazosin binding and α_1 -adrenoceptors controlling gluconeogenesis in the rat renal cortex

McPherson, G. A. & Summers, R. J., 1 Jan 1982, In: Clinical and Experimental Pharmacology and Physiology. 9, 4, 1 p.

Enhancement of pentylenetetrazol (PTZ) induced convulsions following clonidine withdrawal in rats

Summers, R. J., Papanicolaou, J., Vajda, F. J. E. & Louis, W. J., 1 Jan 1982, In: Neuroscience Letters. 27, Suppl. 8

New developments in α -adrenoreceptor drugs for the treatment of hypertension

Louis, W. J., Summers, R. J., Dynon, M. & Jarrott, B., 1 Jan 1982, In: Journal of Cardiovascular Pharmacology. 4, p. S168-S171

ROLE OF CENTRAL β -ADRENOCEPTORS IN THE CONTROL OF PENTYLENETETRAZOL-INDUCED CONVULSIONS IN RATS

LOUIS, W. J., PAPANICOLAOU, JENNY., SUMMERS, R. J. & VAJDA, F. J. E., 1 Jan 1982, In: British Journal of Pharmacology. 75, 3, p. 441-446 6 p.

Radioligand studies of α -adrenoceptors in the kidney

Summers, R. J. & McPherson, G. A., 1 Jan 1982, In: Trends in Pharmacological Sciences. 3, C, p. 291-294 4 p.

Relationship between α -adrenoceptor selectivity and anticonvulsant activity after chronic clonidine-like drugs in rats

Louis, W. J., Papanicolaou, J., Summers, R. J. & Vajda, F. J. E., 1 Jan 1982, In: British Journal of Pharmacology. 76, Suppl.

Role of central α_2 adrenoceptors in control of pentylenetetrazol (PTZ) induced convulsions in rats

Summers, R. J., Papanicolaou, J., Vajda, F. J. E. & Louis, W. J., 1 Jan 1982, In: Neuroscience Letters. 27, Suppl. 8

Role of central β_2 -adrenoceptors in the control of pentylenetetrazol-induced convulsions in rats

Papanicolaou, J., Summers, R. J., Vajda, F. J. E. & Louis, W. J., 1 Jan 1982, In: Clinical and Experimental Pharmacology and Physiology. 9, 4, 1 p.

Role of β -adrenoceptors in the anticonvulsant effect of propranolol on leptazol-induced convulsions in rats

Papanicolaou, J., Vajda, F. J. E., Summers, R. J. & Louis, W. J., 1 Jan 1982, In: Journal of Pharmacy and Pharmacology. 34, 2, p. 124-125 2 p.

The relationship between α_2 -adrenoceptor selectivity and anticonvulsant effect in a series of clonidine-like drugs

Summers, R. J., Papanicolaou, J., Vajda, F. J. E. & Louis, W. J., 1 Jan 1982, In: Clinical and Experimental Pharmacology and Physiology. 9, 4, p. 473-474 2 p.

[3 H]-GUANFACINE: A RADIOLIGAND THAT SELECTIVELY LABELS HIGH AFFINITY α_2 -ADRENOCEPTOR SITES IN HOMOGENATES OF RAT BRAIN

JARROTT, BEVYN., LOUIS, WILLIAM. J. & SUMMERS, ROGER. J., 1 Jan 1982, In: British Journal of Pharmacology. 75, 2, p. 401-408 8 p.

Comparison of [3 H]clonidine and [3 H]guanfacine binding to α_2 adrenoceptors in membranes from rat cerebral cortex

Summers, R. J., Jarrott, B. & Louis, W. J., 7 Aug 1981, In: Neuroscience Letters. 25, 1, p. 31-36 6 p.

Inhibition of phenylephrine-stimulated gluconeogenesis by chlorpromazine is mediated by α -adrenergic receptors

Tilley, L., Summers, R. J., Redgrave, T. G. & Kemp, B. E., 20 Apr 1981, In: FEBS Letters. 126, 2, p. 313-317 5 p.

Alpha-adrenoceptors in rat kidney studied by 3 H-clonidine and 3 H-prazosin binding

Summers, R. J. & McPherson, G. A., 1 Jan 1981, In: Clinical and Experimental Pharmacology and Physiology. 8, 6

Evidence for heterogeneity of post-junctional α -adrenoceptors from studies in guinea pig capsular splenic smooth muscle

McPherson, G. A. & Summers, R. J., 1 Jan 1981, In: Clinical and Experimental Pharmacology and Physiology. 8, 6

Labeling of α_2 -adrenoceptors in rat cerebral cortex with 3 H-guanfacine

Summers, R. J., Jarrott, B. & Louis, W. J., 1 Jan 1981, In: Clinical and Experimental Pharmacology and Physiology. 8, 6

PHARMACOLOGICAL INVESTIGATION OF α -ADRENORECEPTORS IN GUINEA-PIG SPLENIC CAPSULE

DIGGES, K. G., MCPHERSON, G. A. & SUMMERS, R. J., 1 Jan 1981, In: Journal of Autonomic Pharmacology. 1, 4, p. 313-320 8 p.

[3 H]Prazosin and [3 H]clonidine binding to α -adrenoceptors in membranes prepared from regions of rat kidney

McPherson, G. A. & Summers, R. J., 1 Jan 1981, In: Journal of Pharmacy and Pharmacology. 33, 1, p. 189-191 3 p.

Characterization of α -adrenoceptors in rat and guinea pig tissues using radiolabeled agonists and antagonists

Jarrott, B., Summers, R. J., Culvenor, A. J. & Louis, W. J., 1 Dec 1980, In: Circulation Research. 46, 6 II

A sensitive method for measurement of catecholamines and their metabolites in extracts of small brain areas

Rowe, P. R., Summers, R. J. & Beart, P. M., 1 Jan 1980, In: Clinical and Experimental Pharmacology and Physiology. 7, 6, p. 674-675 2 p.

Are radioligand assays useful for identification and characterization of prejunctional receptors

Summers, R. J. & Jarrott, B., 1 Jan 1980, In: Clinical and Experimental Pharmacology and Physiology. 7, 6, p. 641-642 2 p.

Characterization of (³H)clonidine binding sites in membranes prepared from guinea pig

Summers, R. J. & McPherson, G., 1 Jan 1980, In: Clinical and Experimental Pharmacology and Physiology. 7, 6, 1 p.

Displacement of [³H]clonidine binding by clonidine analogues in membranes from rat cerebral cortex

Summers, R. J., Jarrott, B. & Louis, W. J., 1 Jan 1980, In: European Journal of Pharmacology. 66, 2-3, p. 233-241 9 p.

Localization of [³H]clonidine binding sites in membranes prepared from guinea pig renal cortex

McPherson, G. & Summers, R. J., 1 Jan 1980, In: Clinical and Experimental Pharmacology and Physiology. 7, 6, p. 659-660 2 p.

Selectivity of a series of clonidine-like drugs for α_1 and α_2 adrenoceptors in rat brain

Summers, R. J., Jarrott, B. & Louis, W. J., 1 Jan 1980, In: Neuroscience Letters. 20, 3, p. 347-350 4 p.

[³H]-CLONIDINE BINDING TO α -ADRENOCEPTORS IN MEMBRANES PREPARED FROM REGIONS OF GUINEA-PIG KIDNEY: ALTERATION BY MONOVALENT AND DIVALENT CATIONS

SUMMERS, R. J., 1 Jan 1980, In: British Journal of Pharmacology. 71, 1, p. 57-63 7 p.

The actions of the β -adrenoceptor blocking agents propranolol and metoprolol in the maximally exercised horse

Snow, D. H., Summers, R. J. & Guy, P. S., 1 Dec 1979, In: Research in Veterinary Science. 27, 1, p. 22-29 8 p.

INVESTIGATION OF THE ROLE OF CALCIUM IN THE SUPER-SENSITIVITY PRODUCED BY COCAINE IN CAT SPLEEN STRIPS

SUMMERS, R. J. & TILLMAN, JANET., 1 Jan 1979, In: British Journal of Pharmacology. 65, 4, p. 689-699 11 p.

Interaction of clonidine metabolites with an α -adrenoceptor in rat brain membranes

Jarrott, B., Louis, W. J. & Summers, R. J., 1 Jan 1979, In: Clinical and Experimental Pharmacology and Physiology. 6, 6, 1 p.

THE CHARACTERISTICS OF [³H]-CLONIDINE BINDING TO AN α -ADRENOCEPTOR IN MEMBRANES FROM GUINEA-PIG KIDNEY

JARROTT, B., LOUIS, W. J. & SUMMERS, R. J., 1 Jan 1979, In: British Journal of Pharmacology. 65, 4, p. 663-670 8 p.

THE EFFECTS OF α -ADRENOCEPTOR AGONISTS AND ANTAGONISTS ON RESPONSES OF TRANSMURALLY STIMULATED PROSTATIC AND EPIDIDYMAL PORTIONS OF THE ISOLATED VAS DEFERENS OF THE RAT

BROWN, CHRISTINE. M., McGRATH, J. C. & SUMMERS, R. J., 1 Jan 1979, In: British Journal of Pharmacology. 66, 4, p. 553-564 12 p.

The effect of a series of clonidine analogues on [³H] clonidine binding in rat cerebral cortex

Jarrott, B., Louis, W. J. & Summers, R. J., 1 Jan 1979, In: Biochemical Pharmacology. 28, 1, p. 141-144 4 p.

Localisation of [³H]-clonidine binding in guinea pig kidney

Jarrott, B. & Summers, R. J., 1 Jan 1978, In: British Journal of Pharmacology. 64, 3

THE EFFECTS OF PIPEROXAN ON UPTAKE OF NORADRENALINE AND OVERFLOW OF TRANSMITTER IN THE ISOLATED BLOOD PERFUSED SPLEEN OF THE CAT

BLAKELEY, A. G. H. & SUMMERS, R. J., 1 Jan 1978, In: British Journal of Pharmacology. 63, 4, p. 683-687 5 p.

The pharmacology of labetalol, an α - and β -adrenoceptor blocking agent

Blakeley, A. G. H. & Summers, R. J., 1 Jan 1978, In: General Pharmacology. 9, 6, p. 399-402 4 p.

The actions of the β adrenoceptor blocking agents propranolol and metoprolol in the maximally exercised horse

Snow, D. H. & Summers, R. J., 1 Dec 1977, In: Journal of Physiology. 271, 2

The effects of labetalol (AH 5158) on metabolism of ^3H (-)-noradrenaline released from the cat spleen by nerve stimulation

Summers, R. J. & Tillman, J., 15 Nov 1977, In: Biochemical Pharmacology. 26, 22, p. 2137-2143 7 p.

THE EFFECTS OF LABETALOL (AH 5158) ON ADRENERGIC TRANSMISSION IN THE CAT SPLEEN

BLAKELEY, A. G. H. & SUMMERS, R. J., 1 Jan 1977, In: British Journal of Pharmacology. 59, 4, p. 643-650 8 p.

The effects of L9394 on adrenergic transmission in the cat spleen

Baco, Z. M., Blakeley, A. G. H. & Summers, R. J., 1 Jan 1977, In: British Journal of Pharmacology. 60, 2

The effects of AH 5158 on metabolism of ^3H (-) noradrenaline released from the cat spleen by nerve stimulation

Summers, R. J. & Tillman, J., 1 Dec 1976, In: British Journal of Pharmacology. 58, 2

The effects of amiodarone, an α and β receptor antagonist, on adrenergic transmission in the cat spleen

Bacq, Z. M., Blakeley, A. G. H. & Summers, R. J., 15 May 1976, In: Biochemical Pharmacology. 25, 10, p. 1195-1199 5 p.

The effects of AH 5158 on the overflow of transmitter and the uptake of [^3H] (-) noradrenaline in the cat spleen

Blakeley, A. G. H. & Summers, R. J., 1 Jan 1976, In: British Journal of Pharmacology. 56, 3

Aspects of the physiology and pharmacology of adrenergic transmission in the cat's spleen

Blakeley, A. G. H. & Summers, R. J., 1 Dec 1975, In: Bulletin et Memoires de l'Academie Royale de Medecine de Belgique. 130, 4-5 6, p. 222-233 12 p.

The effects of amiodarone (L 3428), an α and β receptor antagonist, on overflow of transmitter and uptake of noradrenaline in the cat spleen

Bacq, Z. M., Blakeley, A. G. H. & Summers, R. J., 15 Dec 1974, In: Biochemical Pharmacology. 23, 24, p. 3501-3504 4 p.

An uptake mechanism for L-noradrenaline in the cat spleen, associated with the nerves but distinct from uptake₁

Blakeley, A. G. H., Powis, G. & Summers, R. J., 1 Apr 1974, In: The Journal of Physiology. 238, 1, p. 193-206 14 p.

The effect of monoamine oxidase inhibitors on the rectal temperature of the rat

SUMMERS, R. J., 1 Jan 1974, In: Journal of Pharmacy and Pharmacology. 26, 5, p. 335-343 9 p.

Some characteristics of the uptake process in the isolated blood perfused cat spleen resistant to desmethylimipramine and 17β oestradiol

Blakeley, A. G. H., Powis, G. & Summers, R. J., 1 Dec 1973, In: British Journal of Pharmacology. 47, 3

An uptake process for L-noradrenaline resistant to desmethylimipramine (DMI) and 17β -estradiol in the cat spleen.

Blakeley, A. G., Powis, G. & Summers, R. J., 1 Feb 1973, In: Journal of Physiology. 229, 1

The effects of pargyline on overflow of transmitter and uptake of noradrenaline in the cat spleen

BLAKELEY, A. G. H., POWIS, G. & SUMMERS, R. J., 1 Jan 1973, In: British Journal of Pharmacology. 47, 4, p. 719-728 10 p.

Uptake of (L) noradrenaline in the isolated cat heart perfused with blood containing desmethylimipramine (DMI) and 17 β oestradiol (17 β O)

Blakeley, A. G. H., Powis, G. & Summers, R. J., 1 Jan 1973, In: Journal of Physiology. 234, 2

Effect of the monoamine oxidase inhibitor pargyline on the uptake of labelled noradrenaline by the cat's spleen.

Blakeley, A. G., Powis, G. & Summers, R. J., 1 Oct 1971, In: British Journal of Pharmacology. 43, 2

Cat assay for the emetic action of digitalis and related glycosides (digitoxin, digoxin, lanatoside C, ouabain and calactin)

PARSONS, J. A. & SUMMERS, R. J., 1 Jan 1971, In: British Journal of Pharmacology. 42, 1, p. 143-152 10 p.

Effects of monoamine oxidase inhibitors on the hypothermia produced in cats by halothane.

Summers, R. J., 1 Jan 1969, In: British Journal of Pharmacology. 37, 2, p. 400-413 14 p.

Qualifications

Employment

Emeritus Professor

Drug Discovery Biology
MONASH UNIVERSITY
2 Jan 2021 → present

Consultant

Atrogi Pty Ltd
Sweden
1 Jul 2017 → present

Consultant

Les Laboratoires Servier (Servier Laboratories)
France
1 Jan 2013 → present

Activities

Theme Leader

Roger Summers (Member)
10 Nov 2011

Prizes

ASCEPT Life Member

Summers, Roger (Recipient), 2010

ASCEPT/British Pharmacol Soc Visiting Lecturer

Summers, Roger (Recipient), 1991

British Pharmacological Society award for contributions to Molecular Pharmacology

Summers, Roger (Recipient), 2009

David Syme Research Prize University of Melbourne

Summers, Roger (Recipient), 1986

Emeritus Membership of ASPET
Summers, Roger (Recipient), 2019

Emeritus Professor Monash University
Summers, Roger (Recipient), 2020

Faculty Research Award for Excellence in Research
Summers, Roger (Recipient), Nov 2018

Fellow of the British Pharmacological Society
Summers, Roger (Recipient), 2005

Highly Cited Researcher from the Clarivates Web of Science Group
Summers, Roger (Recipient), 2019

Honorary Doctorate honoris causa Stockholm University
Summers, Roger (Recipient), 2006

Honorary Fellow of the British Pharmacological Society
Summers, Roger (Recipient), Dec 2017

Honorary Professorial Research Fellow Florey Institute
Summers, Roger (Recipient), 2009

Honorary Research Fellow University of Leicester
Summers, Roger (Recipient), 1996

Honorary Senior Principal Research Fellowship Florey Institute
Summers, Roger (Recipient), 2004

Kathleen & Lovat Fraser Award of the National Heart Foundation
Summers, Roger (Recipient), 1992

Michael Rand Medal ASCEPT
Summers, Roger (Recipient), 2003

Tage Erlander Visiting Professorship Swedish Research Council
Summers, Roger (Recipient), 2003

Top Cited Article Pharmacology Research and Perspectives
Summers, Roger (Recipient), 2021

Top downloaded paper British Journal of Pharmacology
Summers, Roger (Recipient), 2018

Visiting Professorship Toho University Japan
Summers, Roger (Recipient), 2003

Visiting Scientist Florey Institute
Summers, Roger (Recipient), 1988

Visiting Scientist in Neuroscience Johns Hopkins University
Summers, Roger (Recipient), 1982

Projects

Advanced protein modelling and docking system

Summers, R.
National Health and Medical Research Council (NHMRC) (Australia)
1/01/06 → 31/12/06

Central Adrenoceptor Subtypes and Their Role in Control of Metabolism and Food Intake

Summers, R. & Zakhem, M.
Monash University
1/01/00 → 31/12/00

Characterisation of insulin-independent glucose uptake mediated by G-protein coupled receptors

Summers, R., Bengtsson, T. & Hutchinson, D.
Australian Research Council (ARC)
1/01/09 → 30/06/11

Characterisation of novel ligands for diabetes

Hutchinson, D. & Summers, R.
Atrogi Pty Ltd
4/02/19 → 3/02/20

Fusion Universal Microplate Analyser - Equipment Grant 2000

Beart, P., Cheema, S., Evans, B. & Summers, R.
National Health and Medical Research Council (NHMRC) (Australia), Monash University
13/03/01 → 31/12/01

Investigation of the Mechanisms Involved in Consolidation of Memory By Beta 3 Adrenoceptoragonists

Gibbs, M. & Summers, R.
National Health and Medical Research Council (NHMRC) (Australia)
16/03/00 → 31/12/03

Microisolators, Laminar Flow Hoods and Microinjection Suite to Equip the Specific Pathogen Free Genetically Modified Mouse Facility At Monsh University

Summers, R., Bertram, J., Lawrence, A., Mercer, J. & Perkins, A.
Wellcome Trust
1/01/00 → 31/12/02

Molecular Pharmacology of Beta Adrenoceptors in Multiple Disease States - Application Is Also for a Research Fellowship - Project 124406 Combined With 124407 (gms Id 000458)

Summers, R. & Evans, B.
National Health and Medical Research Council (NHMRC) (Australia)
1/01/00 → 31/12/02

Molecular mechanisms underlying G protein coupled receptor signaling

Sexton, P., Christopoulos, A., Eidne, K. & Summers, R.
National Health and Medical Research Council (NHMRC) (Australia)
1/01/04 → 31/12/06

Molecular pharmacology of receptor activity modifying protein (RAMP) action

Sexton, P., Christopoulos, A., Summers, R. & Tilakaratne, N.
National Health and Medical Research Council (NHMRC) (Australia)

1/01/04 → 31/12/06

NSV Minor Project - Novel Drug Targets Formed By G-Protein Receptor Dimers

Summers, R., Evans, B., Hutchinson, D., Phiri, N. M. & Popp, B. D.

Novel actions of beta-adrenoceptor antagonists: Implications for the treatment of cardiac failure

Summers, R. & Evans, B.

National Health and Medical Research Council (NHMRC) (Australia)

2/01/08 → 31/12/10

Novel functional domains on adrenoceptors for drug interaction and cell signalling

Summers, R. & Evans, B.

National Health and Medical Research Council (NHMRC) (Australia)

1/01/03 → 31/12/07

Relaxin action in the heart, kidney, lung and uterus: understanding fibrosis. LP0211545

Summers, R., Parry, L. J., Samuel, C. S., Tregear, G. W. & Unemori, E.

Australian Research Council (ARC), Connetics Group

1/01/02 → 31/12/04

Relaxin: Molecular mechanisms of action in the reversal of fibrosis

Summers, R., Gao, X., Judkins, C., Bathgate, R. A. D., Du, X., Samuel, C. S., Tang, M. L. K. & Tregear, G. W.

Australian Research Council (ARC), BASS Medical Inc

1/01/05 → 31/12/07

Relaxin: molecular mechanisms of cardioprotection

Summers, R., Bathgate, R. A. D. & Samuel, C. S.

Australian Research Council (ARC), Corthera Inc.

4/01/11 → 31/12/14

Replacement of Automated Nucleotide Sequencer Component of the Genomics and Related Technologies Centre

Coppel, R., Adler, B., Mitchell, C., Rood, J. & Summers, R.

Wellcome Trust

24/09/01 → 30/06/03

Request for a POLARstar Optima - Fluorescence Microplate Reader

Drummond, G., Ferrero, R., Ricardo, S., Summers, R. & Widdop, R.

Ramaciotti Australia Foundation

1/01/05 → 31/12/05

The Janus face of G Protein-Coupled Receptors: Implications for Disease Mechanisms and Opportunities for Drug Discovery

Sexton, P., Bunnett, N., Christopoulos, A. & Summers, R.

National Health and Medical Research Council (NHMRC) (Australia)

1/01/14 → 31/12/18

The Role of Central Adrenoceptor Subtypes in Control of Memory: Analysis Using Transgenic Mice

Gibbs, M. & Summers, R.

ANZ Trustees

1/01/02 → 31/12/02

Understanding G Protein-coupled receptors (GPCRs): Accelerating discovery from concept to clinic

Sexton, P., Christopoulos, A. & Summers, R.

National Health and Medical Research Council (NHMRC) (Australia)

1/01/09 → 31/12/13

Understanding cell signalling mechanisms activated by relaxin family peptides: targets with therapeutic potential.

Summers, R. & Bathgate, R.

National Health and Medical Research Council (NHMRC) (Australia)

2/01/07 → 31/12/08

Understanding the mechanisms used by G-protein coupled receptors to regulate insulin-independent glucose transport

Hutchinson, D. & Summers, R.

National Health and Medical Research Council (NHMRC) (Australia)

2/01/08 → 31/12/10