

# Stanford

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## Brian Kobilka

Hélène Irwin Fagan Chair of Cardiology  
Molecular & Cellular Physiology

### Bio

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#### ACADEMIC APPOINTMENTS

- Professor, Molecular & Cellular Physiology
- Member, Bio-X
- Member, Cardiovascular Institute
- Member, Maternal & Child Health Research Institute (MCHRI)
- Member, Wu Tsai Neurosciences Institute

#### LINKS

- Personal Web site: <http://med.stanford.edu/kobikalab/>

### Research & Scholarship

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#### CURRENT RESEARCH AND SCHOLARLY INTERESTS

My laboratory is involved in studying several aspects of adrenergic receptor biology. Adrenergic receptors form the interface between the sympathetic nervous system and the cardiovascular system and play a critical role in the regulation of cardiovascular function. Specific projects include:

1- RECEPTOR STRUCTURE: We are interested in understanding the three dimensional structure of adrenergic receptors and learning about the conformational changes that mediate signal transduction. We are taking several experimental approaches including mutagenesis, biochemical, and biophysical studies.

2-INTRACELLULAR TRAFFICKING OF ADRENERGIC RECEPTORS: The function of receptors can be modulated by changes in receptor structure (phosphorylation) and by changes in subcellular localization. We are using immunocytochemical approaches to study the targeting of receptors to specific subcellular domains and agonist mediated redistribution of receptors. Our goal is to determine the functional significance of differences in targeting and trafficking that we have observed in several adrenergic receptors, and to identify cellular proteins that mediate receptor trafficking.

3-PHYSIOLOGIC RELEVANCE OF ADRENERGIC RECEPTOR SUBTYPE DIVERSITY: Multiple closely related subtypes of adrenergic receptors have been identified through cloning studies. We are using targeted gene modification in mice to study the physiologic role of these closely related subtypes. We have disrupted the genes for five adrenergic receptors (alpha 2a, alpha 2b, alpha 2c, beta 1, and beta2) and are investigating the consequence of these disruptions on neural and cardiovascular physiology.

## Teaching

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### STANFORD ADVISEES

#### Med Scholar Project Advisor

Teja Peddada

#### Postdoctoral Faculty Sponsor

Elise Bruguera, Chris Habrian, Peng Huang, Evan O'Brien, Jiemin Shen, Jun Xu

#### Doctoral Dissertation Advisor (AC)

Brian Garcia Rodriguez

### GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Biophysics (Phd Program)
- Molecular and Cellular Physiology (Phd Program)
- Neurosciences (Phd Program)

## Publications

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### PUBLICATIONS

- **Structural basis of  $\beta$ 1A-adrenergic receptor activation and recognition by an extracellular nanobody.** *Nature communications*  
Toyoda, Y., Zhu, A., Kong, F., Shan, S., Zhao, J., Wang, N., Sun, X., Zhang, L., Yan, C., Kobilka, B. K., Liu, X.  
2023; 14 (1): 3655
- **Structure based approaches on fentanyl template to design novel  $\mu$  opioid modulators**  
Ople, R., Wang, H., Li, Q., Polacco, B., Bernhard, S., Appourchaux, K., Sribhashyam, S., Eans, S., Huttenhain, R., McLaughlin, J., Kobilka, B., Majumdar, S.  
AMER SOC PHARMACOLOGY EXPERIMENTAL THERAPEUTICS.2023
- **Structural basis for activation of CB1 by an endocannabinoid analog.** *Nature communications*  
Krishna Kumar, K., Robertson, M. J., Thadhani, E., Wang, H., Suomivuori, C. M., Powers, A. S., Ji, L., Nikas, S. P., Dror, R. O., Inoue, A., Makriyannis, A., Skiniotis, G., Kobilka, et al  
2023; 14 (1): 2672
- **Constrained catecholamines gain  $\beta$ 2AR selectivity through allosteric effects on pocket dynamics.** *Nature communications*  
Xu, X., Shonberg, J., Kaindl, J., Clark, M. J., Stöbel, A., Maul, L., Mayer, D., Hübner, H., Hirata, K., Venkatakrishnan, A. J., Dror, R. O., Kobilka, B. K., Sunahara, et al  
2023; 14 (1): 2138
- **Function and dynamics of the intrinsically disordered carboxyl terminus of  $\beta$ 2 adrenergic receptor.** *Nature communications*  
Heng, J., Hu, Y., Perez-Hernandez, G., Inoue, A., Zhao, J., Ma, X., Sun, X., Kawakami, K., Ikuta, T., Ding, J., Yang, Y., Zhang, L., Peng, et al  
2023; 14 (1): 2005
- **Negative allosteric modulation of the glucagon receptor by RAMP2.** *Cell*  
Krishna Kumar, K., O'Brien, E. S., Habrian, C. H., Latorraca, N. R., Wang, H., Tuneew, I., Montabana, E., Marqusee, S., Hilger, D., Isacoff, E. Y., Mathiesen, J. M., Kobilka, B. K.  
2023; 186 (7): 1465-1477.e18
- **Negative allosteric modulation of the glucagon receptor by RAMP2**  
O'Brien, E. S., Kumar, K., Habrian, C., Latorraca, N. R., Wang, H., Tuneew, I., Montabana, E., Marqusee, S., Hilger, D., Isacoff, E. Y., Mathiesen, J. M., Kobilka, B. K.  
CELL PRESS.2023: 161A
- **Structural and dynamic insights into supra-physiological activation and allosteric modulation of a muscarinic acetylcholine receptor.** *Nature communications*  
Xu, J., Wang, Q., Hübner, H., Hu, Y., Niu, X., Wang, H., Maeda, S., Inoue, A., Tao, Y., Gmeiner, P., Du, Y., Jin, C., Kobilka, et al

2023; 14 (1): 376

- **Structure-based design of bitopic ligands for the  $\mu$ -opioid receptor.** *Nature*  
Faouzi, A., Wang, H., Zaidi, S. A., DiBerto, J. F., Che, T., Qu, Q., Robertson, M. J., Madasu, M. K., El Daibani, A., Varga, B. R., Zhang, T., Ruiz, C., Liu, et al  
2022
- **Insights into distinct signaling profiles of the OR activated by diverse agonists.** *Nature chemical biology*  
Qu, Q., Huang, W., Aydin, D., Paggi, J. M., Seven, A. B., Wang, H., Chakraborty, S., Che, T., DiBerto, J. F., Robertson, M. J., Inoue, A., Suomivuori, C., Roth, et al  
2022
- **Membrane phosphoinositides regulate GPCR-beta-arrestin complex assembly and dynamics.** *Cell*  
Janetzko, J., Kise, R., Barsi-Rhyné, B., Siepe, D. H., Heydenreich, F. M., Kawakami, K., Masureel, M., Maeda, S., Garcia, K. C., von Zastrow, M., Inoue, A., Kobilka, B. K.  
2022
- **A cholesterol analog stabilizes the human beta2-adrenergic receptor nonlinearly with temperature.** *Science signaling*  
Serdiuk, T., Manna, M., Zhang, C., Mari, S. A., Kulig, W., Pluhackova, K., Kobilka, B. K., Vattulainen, I., Muller, D. J.  
2022; 15 (737): eabi7031
- **Structure-based Evolution of G protein-biased mu-opioid Receptor Agonists.** *Angewandte Chemie (International ed. in English)*  
Gmeiner, P., Wang, H., Hetzer, F., Huang, W., Qu, Q., Meyerowitz, J., Kaindl, J., Hubner, H., Skiniotis, G., Kobilka, B. K.  
2022
- **Atypical structural snapshots of human cytomegalovirus GPCR interactions with host G proteins.** *Science advances*  
Tsutsumi, N., Maeda, S., Qu, Q., Vogele, M., Jude, K. M., Suomivuori, C., Panova, O., Waghray, D., Kato, H. E., Velasco, A., Dror, R. O., Skiniotis, G., Kobilka, et al  
1800; 8 (3): eabl5442
- **Translating science to medicine: The case for physician-scientists.** *Science translational medicine*  
Utz, P. J., Jain, M. K., Cheung, V. G., Kobilka, B. K., Lefkowitz, R., Yamada, T., Dzau, V. J.  
2022; 14 (632): eabg7852
- **Structures of active melanocortin-4 receptor-Gs-protein complexes with NDP-alpha-MSH and setmelanotide.** *Cell research*  
Heyder, N. A., Kleinau, G., Speck, D., Schmidt, A., Paisdzior, S., Szczepek, M., Bauer, B., Koch, A., Gallandi, M., Kwiatkowski, D., Burger, J., Mielke, T., Beck-Sickingler, et al  
2021
- **G-protein activation by a metabotropic glutamate receptor.** *Nature*  
Seven, A. B., Barros-Álvarez, X., de Lapeyrière, M., Papasergi-Scott, M. M., Robertson, M. J., Zhang, C., Nwokonko, R. M., Gao, Y., Meyerowitz, J. G., Rocher, J. P., Schelshorn, D., Kobilka, B. K., Mathiesen, et al  
2021
- **Crystal structure of dopamine D1 receptor in complex with G protein and a non-catechol agonist.** *Nature communications*  
Sun, B., Feng, D., Chu, M. L., Fish, I., Lovera, S., Sands, Z. A., Kelm, S., Valade, A., Wood, M., Ceska, T., Kobilka, T. S., Lebon, F., Kobilka, et al  
2021; 12 (1): 3305
- **Structural basis for the constitutive activity and immunomodulatory properties of the Epstein-Barr virus-encoded G protein-coupled receptor BILF1.** *Immunity*  
Tsutsumi, N., Qu, Q., Mavri, M., Baggesen, M. S., Maeda, S., Waghray, D., Berg, C., Kobilka, B. K., Rosenkilde, M. M., Skiniotis, G., Garcia, K. C.  
2021
- **How GPCR Phosphorylation Patterns Orchestrate Arrestin-Mediated Signaling.** *Cell*  
Latorraca, N. R., Masureel, M., Hollingsworth, S. A., Heydenreich, F. M., Suomivuori, C., Brinton, C., Townshend, R. J., Bouvier, M., Kobilka, B. K., Dror, R. O.  
2020
- **Viewing rare conformations of the beta2 adrenergic receptor with pressure-resolved DEER spectroscopy.** *Proceedings of the National Academy of Sciences of the United States of America*  
Lerch, M. T., Matt, R. A., Masureel, M., Elgeti, M., Kumar, K. K., Hilger, D., Foys, B., Kobilka, B. K., Hubbell, W. L.  
2020

- **Structural basis for GLP-1 receptor activation by LY3502970, an orally active nonpeptide agonist.** *Proceedings of the National Academy of Sciences of the United States of America*  
Kawai, T., Sun, B., Yoshino, H., Feng, D., Suzuki, Y., Fukazawa, M., Nagao, S., Wainscott, D. B., Showalter, A. D., Droz, B. A., Kobilka, T. S., Coghlan, M. P., Willard, et al  
2020
- **Analysis of beta2AR-Gs and beta2AR-Gi complex formation by NMR spectroscopy.** *Proceedings of the National Academy of Sciences of the United States of America*  
Ma, X., Hu, Y., Batebi, H., Heng, J., Xu, J., Liu, X., Niu, X., Li, H., Hildebrand, P. W., Jin, C., Kobilka, B. K.  
2020
- **Author Correction: Structural insights into mu-opioid receptor activation.** *Nature*  
Huang, W., Manglik, A., Venkatakrishnan, A. J., Laeremans, T., Feinberg, E. N., Sanborn, A. L., Kato, H. E., Livingston, K. E., Thorsen, T. S., Kling, R. C., Granier, S., Gmeiner, P., Husbands, et al  
2020
- **Structural insights into probe-dependent positive allostereism of the GLP-1 receptor.** *Nature chemical biology*  
Bueno, A. B., Sun, B., Willard, F. S., Feng, D., Ho, J. D., Wainscott, D. B., Showalter, A. D., Vieth, M., Chen, Q., Stutsman, C., Chau, B., Ficorilli, J., Agejas, et al  
2020
- **An allosteric modulator binds to a conformational hub in the beta2 adrenergic receptor.** *Nature chemical biology*  
Liu, X., Kaindl, J., Korczynska, M., StoSsel, A., Dengler, D., Stanek, M., Hubner, H., Clark, M. J., Mahoney, J., Matt, R. A., Xu, X., Hirata, K., Shoichet, et al  
2020
- **Activation of the alpha2B adrenoceptor by the sedative sympatholytic dexmedetomidine.** *Nature chemical biology*  
Yuan, D., Liu, Z., Kaindl, J., Maeda, S., Zhao, J., Sun, X., Xu, J., Gmeiner, P., Wang, H., Kobilka, B. K.  
2020
- **Binding pathway determines norepinephrine selectivity for the human #1AR over #2AR.** *Cell research*  
Xu, X. n., Kaindl, J. n., Clark, M. J., Hübner, H. n., Hirata, K. n., Sunahara, R. K., Gmeiner, P. n., Kobilka, B. K., Liu, X. n.  
2020
- **Structure of the neurotensin receptor 1 in complex with #-arrestin 1.** *Nature*  
Huang, W. n., Masureel, M. n., Qianhui, Q. n., Janetzko, J. n., Inoue, A. n., Kato, H. E., Robertson, M. J., Nguyen, K. C., Glenn, J. S., Skiniotis, G. n., Kobilka, B. K.  
2020
- **Structures of G# Proteins in Complex with Their Chaperone Reveal Quality Control Mechanisms.** *Cell reports*  
Seven, A. B., Hilger, D. n., Papasergi-Scott, M. M., Zhang, L. n., Qu, Q. n., Kobilka, B. K., Tall, G. G., Skiniotis, G. n.  
2020
- **Structural insights into differences in G protein activation by family A and family B GPCRs.** *Science (New York, N.Y.)*  
Hilger, D. n., Kumar, K. K., Hu, H. n., Pedersen, M. F., O'Brien, E. S., Giehm, L. n., Jennings, C. n., Eskici, G. n., Inoue, A. n., Lerch, M. n., Mathiesen, J. M., Skiniotis, G. n., Kobilka, et al  
2020; 369 (6503)
- **Structure and selectivity engineering of the M1 muscarinic receptor toxin complex.** *Science (New York, N.Y.)*  
Maeda, S. n., Xu, J. n., N Kadji, F. M., Clark, M. J., Zhao, J. n., Tsutsumi, N. n., Aoki, J. n., Sunahara, R. K., Inoue, A. n., Garcia, K. C., Kobilka, B. K.  
2020; 369 (6500): 161–67
- **Conformational transitions of a neurotensin receptor1-Gi1complex.** *Nature*  
Kato, H. E., Zhang, Y., Hu, H., Suomivuori, C., Kadji, F. M., Aoki, J., Krishna Kumar, K., Fonseca, R., Hilger, D., Huang, W., Latorraca, N. R., Inoue, A., Dror, et al  
2019
- **Assembly of a GPCR-G Protein Complex** *CELL*  
Du, Y., Duc, N., Rasmussen, S. F., Hilger, D., Kubiak, X., Wang, L., Bohon, J., Kim, H., Wegrecki, M., Asuru, A., Jeong, K., Lee, J., Chance, et al  
2019; 177 (5): 1232–+
- **Structural Insights into the Process of GPCR-G Protein Complex Formation** *CELL*

- Liu, X., Xu, X., Hilger, D., Aschauer, P., Tiemann, J. S., Du, Y., Liu, H., Hirata, K., Sun, X., Guixa-Gonzalez, R., Mathiesen, J. M., Hildebrand, P. W., Kobilka, et al  
2019; 177 (5): 1243-+
- **Structures of the M1 and M2 muscarinic acetylcholine receptor/G-protein complexes** *SCIENCE*  
Maeda, S., Qu, Q., Robertson, M. J., Skiniotis, G., Kobilka, B. K.  
2019; 364 (6440): 552-+
  - **Selective modulation of the cannabinoid type 1 (CB1) receptor as an emerging platform for the treatment of neuropathic pain** *MEDCHEMCOMM*  
Banister, S. D., Kumar, K., Kumar, V., Kobilka, B. K., Malhotra, S. V.  
2019; 10 (5): 647-59
  - **Structural insights into the activation of metabotropic glutamate receptors (vol 566, pg 79, 2019)** *NATURE*  
Koehl, A., Hu, H., Feng, D., Sun, B., Zhang, Y., Robertson, M. J., Chu, M., Kobilka, T., Laeremans, T., Steyaert, J., Tarrasch, J., Dutta, S., Fonseca, et al  
2019; 567 (7747): E10
  - **Diverse GPCRs exhibit conserved water networks for stabilization and activation** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Venkatakrishnan, A. J., Ma, A. K., Fonseca, R., Latorraca, N. R., Kelly, B., Betz, R. M., Asawa, C., Kobilka, B. K., Dror, R. O.  
2019; 116 (8): 3288-93
  - **Structural Insights into the Subtype-Selective Antagonist Binding to the M2 Muscarinic Receptor**  
Lee, S., Ryoji, S., Shoji, M., Kobayashi, T., Kobilka, B. K., Vaidehi, N.  
CELL PRESS.2019: 206A
  - **Structure of a Signaling Cannabinoid Receptor 1-G Protein Complex** *CELL*  
Kumar, K., Shalev-Benami, M., Robertson, M. J., Hu, H., Banister, S. D., Hollingsworth, S. A., Latorraca, N. R., Kato, H. E., Hilger, D., Maeda, S., Weis, W. I., Farrens, D. L., Dror, et al  
2019; 176 (3): 448-+
  - **An improved yeast surface display platform for the screening of nanobody immune libraries.** *Scientific reports*  
Uchanski, T., Zogg, T., Yin, J., Yuan, D., Wohlkonig, A., Fischer, B., Rosenbaum, D. M., Kobilka, B. K., Pardon, E., Steyaert, J.  
2019; 9 (1): 382
  - **Angiotensin Analogs with Divergent Bias Stabilize Distinct Receptor Conformations.** *Cell*  
Wingler, L. M., Elgeti, M., Hilger, D., Latorraca, N. R., Lerch, M. T., Staus, D. P., Dror, R. O., Kobilka, B. K., Hubbell, W. L., Lefkowitz, R. J.  
2019
  - **Mechanism of #2AR regulation by an intracellular positive allosteric modulator.** *Science (New York, N.Y.)*  
Liu, X. n., Masoudi, A. n., Kahsai, A. W., Huang, L. Y., Pani, B. n., Staus, D. P., Shim, P. J., Hirata, K. n., Simhal, R. K., Schwalb, A. M., Rambarat, P. K., Ahn, S. n., Lefkowitz, et al  
2019; 364 (6447): 1283-87
  - **Conformational Plasticity of Human Protease-Activated Receptor 1 upon Antagonist- and Agonist-Binding.** *Structure (London, England : 1993)*  
Spoerri, P. M., Sapra, K. T., Zhang, C. n., Mari, S. A., Kato, H. E., Kobilka, B. K., Müller, D. J.  
2019
  - **Conformational Complexity and Dynamics in a Muscarinic Receptor Revealed by NMR Spectroscopy.** *Molecular cell*  
Xu, J. n., Hu, Y. n., Kaindl, J. n., Risel, P. n., Hübner, H. n., Maeda, S. n., Niu, X. n., Li, H. n., Gmeiner, P. n., Jin, C. n., Kobilka, B. K.  
2019
  - **Assembly of a GPCR-G Protein Complex.** *Cell*  
Du, Y. n., Duc, N. M., Rasmussen, S. G., Hilger, D. n., Kubiak, X. n., Wang, L. n., Bohon, J. n., Kim, H. R., Wegrecki, M. n., Asuru, A. n., Jeong, K. M., Lee, J. n., Chance, et al  
2019
  - **Saving the Endangered Physician-Scientist - A Plan for Accelerating Medical Breakthroughs.** *The New England journal of medicine*  
Jain, M. K., Cheung, V. G., Utz, P. J., Kobilka, B. K., Yamada, T. n., Lefkowitz, R. n.  
2019; 381 (5): 399-402
  - **Structure of a Signaling Cannabinoid Receptor 1-G Protein Complex.** *Cell*

- Krishna Kumar, K., Shalev-Benami, M., Robertson, M. J., Hu, H., Banister, S. D., Hollingsworth, S. A., Latorraca, N. R., Kato, H. E., Hilger, D., Maeda, S., Weis, W. I., Farrens, D. L., Dror, et al  
2018
- **Structural insights into the subtype-selective antagonist binding to the M-2 muscarinic receptor** *NATURE CHEMICAL BIOLOGY*  
Suno, R., Lee, S., Maeda, S., Yasuda, S., Yamashita, K., Hirata, K., Horita, S., Tawaramoto, M. S., Tsujimoto, H., Murata, T., Kinoshita, M., Yamamoto, M., Kobilka, et al  
2018; 14 (12): 1150-+
  - **Structure-guided development of selective M3 muscarinic acetylcholine receptor antagonists** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Liu, H., Hofmann, J., Fish, I., Schaake, B., Eitel, K., Bartuschat, A., Kaindl, J., Rampp, H., Banerjee, A., Huebner, H., Clark, M. J., Vincent, S. G., Fisher, et al  
2018; 115 (47): 12046-50
  - **Structural insights into the subtype-selective antagonist binding to the M2 muscarinic receptor.** *Nature chemical biology*  
Suno, R., Lee, S., Maeda, S., Yasuda, S., Yamashita, K., Hirata, K., Horita, S., Tawaramoto, M. S., Tsujimoto, H., Murata, T., Kinoshita, M., Yamamoto, M., Kobilka, et al  
2018
  - **Structure-guided development of selective M3 muscarinic acetylcholine receptor antagonists.** *Proceedings of the National Academy of Sciences of the United States of America*  
Liu, H., Hofmann, J., Fish, I., Schaake, B., Eitel, K., Bartuschat, A., Kaindl, J., Rampp, H., Banerjee, A., Hubner, H., Clark, M. J., Vincent, S. G., Fisher, et al  
2018
  - **Structural insights into binding specificity, efficacy and bias of a beta2AR partial agonist.** *Nature chemical biology*  
Masureel, M., Zou, Y., Picard, L., van der Westhuizen, E., Mahoney, J. P., Rodrigues, J. P., Mildorf, T. J., Dror, R. O., Shaw, D. E., Bouvier, M., Pardon, E., Steyaert, J., Sunahara, et al  
2018; 14 (11): 1059-66
  - **Rationally Engineered Tandem Facial Amphiphiles for Improved Membrane Protein Stabilization Efficacy** *CHEMBIOCHEM*  
Das, M., Du, Y., Mortensen, J. S., Hariharan, P., Lee, H., Byrne, B., Loland, C. J., Guan, L., Kobilka, B. K., Chae, P.  
2018; 19 (20): 2225-32
  - **A comparative study of branched and linear mannitol-based amphiphiles on membrane protein stability.** *The Analyst*  
Hussain, H., Helton, T., Du, Y., Mortensen, J. S., Hariharan, P., Ehsan, M., Byrne, B., Loland, C. J., Kobilka, B. K., Guan, L., Chae, P. S.  
2018
  - **Development of an antibody fragment that stabilizes GPCR/G-protein complexes.** *Nature communications*  
Maeda, S., Koehl, A., Matile, H., Hu, H., Hilger, D., Schertler, G. F., Manglik, A., Skiniotis, G., Dawson, R. J., Kobilka, B. K.  
2018; 9 (1): 3712
  - **Structural mechanisms of selectivity and gating in anion channelrhodopsins.** *Nature*  
Kato, H. E., Kim, Y. S., Paggi, J. M., Evans, K. E., Allen, W. E., Richardson, C., Inoue, K., Ito, S., Ramakrishnan, C., Fenno, L. E., Yamashita, K., Hilger, D., Lee, et al  
2018
  - **Crystal structure of the natural anion-conducting channelrhodopsin GtACR1.** *Nature*  
Kim, Y. S., Kato, H. E., Yamashita, K., Ito, S., Inoue, K., Ramakrishnan, C., Fenno, L. E., Evans, K. E., Paggi, J. M., Dror, R. O., Kandori, H., Kobilka, B. K., Deisseroth, et al  
2018
  - **Indole-based positive allosteric modulators for targeting CB1 receptor to overcome neuropathic pain**  
Resendez, A., Kumar, K., Kumar, V., Kobilka, B., Malhotra, S.  
AMER CHEMICAL SOC.2018
  - **Single Proteoliposome High-Content Analysis Reveals Differences in the Homo-Oligomerization of GPCRs**  
Walsh, S. M., Mathiasen, S., Christensen, S. M., Fay, J. F., King, C., Provasi, D., Borrero, E., Rasmussen, S. F., Fung, J., Filizola, M., Hristova, K., Kobilka, B., Farrens, et al  
CELL PRESS.2018: 300-312
  - **An Engineered Lithocholate-Based Facial Amphiphile Stabilizes Membrane Proteins: Assessing the Impact of Detergent Customizability on Protein Stability** *CHEMISTRY-A EUROPEAN JOURNAL*

- Das, M., Du, Y., Mortensen, J. S., Bae, H., Byrne, B., Loland, C. J., Kobilka, B. K., Chae, P.  
2018; 24 (39): 9860–68
- **The Molecular Basis of G Protein-Coupled Receptor Activation.** *Annual review of biochemistry*  
Weis, W. I., Kobilka, B. K.  
2018; 87: 897–919
  - **Structure of the  $\mu$ -opioid receptor-Gi protein complex.** *Nature*  
Koehl, A., Hu, H., Maeda, S., Zhang, Y., Qu, Q., Paggi, J. M., Latorraca, N. R., Hilger, D., Dawson, R., Matile, H., Schertler, G. F., Granier, S., Weis, et al  
2018
  - **Structural Properties of the Human Protease-Activated Receptor 1 Changing by a Strong Antagonist** *STRUCTURE*  
Spoerri, P. M., Kato, H. E., Pfreundschuh, M., Mari, S. A., Serdiuk, T., Thoma, J., Sapra, K., Zhang, C., Kobilka, B. K., Muller, D. J.  
2018; 26 (6): 829–+
  - **Structure-based discovery of selective positive allosteric modulators of antagonists for the M-2 muscarinic acetylcholine receptor** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Korczynska, M., Clark, M. J., Valant, C., Xu, J., Von Moo, E., Albold, S., Weiss, D. R., Torosyan, H., Huang, W., Kruse, A. C., Lyda, B. R., May, L. T., Baltos, et al  
2018; 115 (10): E2419–E2428
  - **Structure and dynamics of GPCR signaling complexes** *NATURE STRUCTURAL & MOLECULAR BIOLOGY*  
Hilger, D., Masureel, M., Kobilka, B. K.  
2018; 25 (1): 4–12
  - **The cubicon method for concentrating membrane proteins in the cubic mesophase** *NATURE PROTOCOLS*  
Ma, P., Weichert, D., Aleksandrov, L. A., Jensen, T. J., Riordan, J. R., Liu, X., Kobilka, B. K., Caffrey, M.  
2017; 12 (9): 1745–62
  - **Single-molecule analysis of ligand efficacy in beta(2)AR-G-protein activation** *NATURE*  
Gregorio, G., Masureel, M., Hilger, D., Terry, D. S., Juette, M., Zhao, H., Zhou, Z., Perez-Aguilar, J., Hauge, M., Mathiasen, S., Javitch, J. A., Weinstein, H., Kobilka, et al  
2017; 547 (7661): 68–+
  - **Cryo-EM structure of the activated GLP-1 receptor in complex with a G protein.** *Nature*  
Zhang, Y., Sun, B., Feng, D., Hu, H., Chu, M., Qu, Q., Tarrasch, J. T., Li, S., Sun Kobilka, T., Kobilka, B. K., Skiniotis, G.  
2017; 546 (7657): 248–253
  - **Phase-plate cryo-EM structure of a class B GPCR-G-protein complex.** *Nature*  
Liang, Y., Khoshouei, M., Radjainia, M., Zhang, Y., Glukhova, A., Tarrasch, J., Thal, D. M., Furness, S. G., Christopoulos, G., Coudrat, T., Danev, R., Baumeister, W., Miller, et al  
2017; 546 (7656): 118–123
  - **Structural and Functional Analysis of a beta(2)-Adrenergic Receptor Complex with GRK5** *Cell*  
Komolov, K. E., Du, Y., Duc, N. M., Betz, R. M., Rodrigues, J. P., Leib, R. D., Patra, D., Skiniotis, G., Adams, C. M., Dror, R. O., Chung, K. Y., Kobilka, B. K., Benovic, et al  
2017; 169 (3): 407–421 e16
  - **Crystal structure of the adenosine A(2A) receptor bound to an antagonist reveals a potential allosteric pocket** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Sun, B., Bachhawat, P., Chu, M. L., Wood, M., Ceska, T., Sands, Z. A., Mercier, J., Lebon, F., Kobilka, T. S., Kobilka, B. K.  
2017; 114 (8): 2066–2071
  - **Crystal structure of the adenosine A2A receptor bound to an antagonist reveals a potential allosteric pocket.** *Proceedings of the National Academy of Sciences of the United States of America*  
Sun, B., Bachhawat, P., Chu, M. L., Wood, M., Ceska, T., Sands, Z. A., Mercier, J., Lebon, F., Kobilka, T. S., Kobilka, B. K.  
2017; 114 (8): 2066–2071
  - **Nanobodies to Study G Protein-Coupled Receptor Structure and Function.** *Annual review of pharmacology and toxicology*  
Manglik, A., Kobilka, B. K., Steyaert, J.  
2017; 57: 19–37

- **Mechanism of intracellular allosteric  $\beta$ 2AR antagonist revealed by X-ray crystal structure.** *Nature*  
Liu, X. n., Ahn, S. n., Kahsai, A. W., Meng, K. C., Latorraca, N. R., Pani, B. n., Venkatakrishnan, A. J., Masoudi, A. n., Weis, W. I., Dror, R. O., Chen, X. n., Lefkowitz, R. J., Kobilka, et al  
2017; 548 (7668): 480–84
- **Structure-based discovery of opioid analgesics with reduced side effects** *NATURE*  
Manglik, A., Lin, H., Aryal, D. K., McCorvy, J. D., Dengler, D., Corder, G., Levit, A., Kling, R. C., Bernat, V., Huebner, H., Huang, X., Sassano, M. F., Giguere, et al  
2016; 537 (7619): 185-?
- **Structure-based discovery of opioid analgesics with reduced side effects.** *Nature*  
Manglik, A., Lin, H., Aryal, D. K., McCorvy, J. D., Dengler, D., Corder, G., Levit, A., Kling, R. C., Bernat, V., Hübner, H., Huang, X., Sassano, M. F., Giguère, et al  
2016; 537 (7619): 185-190
- **Allosteric coupling from G protein to the agonist-binding pocket in GPCRs** *NATURE*  
DeVree, B. T., Mahoney, J. P., Velez-Ruiz, G. A., Rasmussen, S. G., Kuszak, A. J., Edwald, E., Fung, J., Manglik, A., Masureel, M., Du, Y., Matt, R. A., Pardon, E., Steyaert, et al  
2016; 535 (7610): 182-?
- **Accessible Mannitol-Based Amphiphiles (MNAs) for Membrane Protein Solubilisation and Stabilisation** *CHEMISTRY-A EUROPEAN JOURNAL*  
Hussain, H., Du, Y., Scull, N. J., Mortensen, J. S., Tarrasch, J., Bae, H. E., Loland, C. J., Byrne, B., Kobilka, B. K., Chae, P. S.  
2016; 22 (21): 7068-7073
- **Structural Basis for Allosteric Coupling Between G Protein and the Agonist-Binding Pocket in GPCRs**  
Mahoney, J., DeVree, B., Velez-Ruiz, G., Rasmussen, S., Kuszak, A., Edwald, E., Manglik, A., Masureel, M., Du, Y., Matt, R., Pardon, E., Steyaert, J., Kobilka, et al  
FEDERATION AMER SOC EXP BIOL.2016
- **Efficacy at the Mu Opioid Receptor: Insights from Orthosteric and Allosteric Ligands**  
Livingston, K. E., Mahoney, J., Manglik, A., Kobilka, B., Sunahara, R., Traynor, J. R.  
FEDERATION AMER SOC EXP BIOL.2016
- **Highly Branched Pentasaccharide-Bearing Amphiphiles for Membrane Protein Studies** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*  
Ehsan, M., Du, Y., Scull, N. J., Tikhonova, E., Tarrasch, J., Mortensen, J. S., Loland, C. J., Skiniotis, G., Guan, L., Byrne, B., Kobilka, B. K., Chae, P. S.  
2016; 138 (11): 3789-3796
- **Crystal structures of the M1 and M4 muscarinic acetylcholine receptors.** *Nature*  
Thal, D. M., Sun, B., Feng, D., Nawaratne, V., Leach, K., Felder, C. C., Bures, M. G., Evans, D. A., Weis, W. I., Bachhawat, P., Kobilka, T. S., Sexton, P. M., Kobilka, et al  
2016; 531 (7594): 335-340
- **Crystal structures of the M1 and M4 muscarinic acetylcholine receptors.** *Nature*  
Thal, D. M., Sun, B., Feng, D., Nawaratne, V., Leach, K., Felder, C. C., Bures, M. G., Evans, D. A., Weis, W. I., Bachhawat, P., Kobilka, T. S., Sexton, P. M., Kobilka, et al  
2016; 531 (7594): 335-340
- **Effective Application of Bicelles for Conformational Analysis of G Protein-Coupled Receptors by Hydrogen/Deuterium Exchange Mass Spectrometry**  
Nguyen Minh Duc, Du, Y., Lee, S., Zhang, C., Kobilka, B. K., Chung, K.  
CELL PRESS.2016: 396A
- **In meso in situ serial X-ray crystallography of soluble and membrane proteins at cryogenic temperatures** *ACTA CRYSTALLOGRAPHICA SECTION D-STRUCTURAL BIOLOGY*  
Huang, C., Olieric, V., Ma, P., Howe, N., Vogeley, L., Liu, X., Warshamanage, R., Weinert, T., Panepucci, E., Kobilka, B., Diederichs, K., Wang, M., Caffrey, et al  
2016; 72: 93-112
- **Allosteric regulation of G protein-coupled receptor activity by phospholipids** *NATURE CHEMICAL BIOLOGY*  
Dawaliby, R., Trubbia, C., Delporte, C., Masureel, M., Van Antwerpen, P., Kobilka, B. K., Govaerts, C.  
2016; 12 (1): 35-?
- **Tandem neopentyl glycol maltosides (TNMs) for membrane protein stabilisation** *CHEMICAL COMMUNICATIONS*



- Bae, H. E., Mortensen, J. S., Ribeiro, O., Du, Y., Ehsan, M., Kobilka, B. K., Loland, C. J., Byrne, B., Chae, P. S.  
2016; 52 (81): 12104-12107
- **High-density grids for efficient data collection from multiple crystals.** *Acta crystallographica. Section D, Structural biology*  
Baxter, E. L., Aguila, L., Alonso-Mori, R., Barnes, C. O., Bonagura, C. A., Brehmer, W., Brunger, A. T., Calero, G., Caradoc-Davies, T. T., Chatterjee, R., DeGrado, W. F., Fraser, J. S., Ibrahim, et al  
2016; 72: 2-11
  - **Imaging G protein-coupled receptors while quantifying their ligand-binding free-energy landscape** *NATURE METHODS*  
Alsteens, D., Pfreundschuh, M., Zhang, C., Spoerri, P. M., Coughlin, S. R., Kobilka, B. K., Mueller, D. J.  
2015; 12 (9): 845-?
  - **Imaging G protein-coupled receptors while quantifying their ligand-binding free-energy landscape.** *Nature methods*  
Alsteens, D., Pfreundschuh, M., Zhang, C., Spoerri, P. M., Coughlin, S. R., Kobilka, B. K., Müller, D. J.  
2015; 12 (9): 845-851
  - **Propagation of conformational changes during mu-opioid receptor activation** *NATURE*  
Sounier, R., Mas, C., Steyaert, J., Laeremans, T., Manglik, A., Huang, W., Kobilka, B. K., Demene, H., Granier, S.  
2015; 524 (7565): 375-?
  - **Propagation of conformational changes during  $\mu$ -opioid receptor activation.** *Nature*  
Sounier, R., Mas, C., Steyaert, J., Laeremans, T., Manglik, A., Huang, W., Kobilka, B. K., Déméné, H., Granier, S.  
2015; 524 (7565): 375-378
  - **Structural insights into  $\mu$ -opioid receptor activation.** *Nature*  
Huang, W., Manglik, A., Venkatakrishnan, A. J., Laeremans, T., Feinberg, E. N., Sanborn, A. L., Kato, H. E., Livingston, K. E., Thorsen, T. S., Kling, R. C., Granier, S., Gmeiner, P., Husbands, et al  
2015; 524 (7565): 315-321
  - **Structural insights into mu-opioid receptor activation** *NATURE*  
Huang, W., Manglik, A., Venkatakrishnan, A. J., Laeremans, T., Feinberg, E. N., Sanborn, A. L., Kato, H. E., Livingston, K. E., Thorsen, T. S., Kling, R. C., Granier, S., Gmeiner, P., Husbands, et al  
2015; 524 (7565): 315-?
  - **Novel Xylene-Linked Maltoside Amphiphiles (XMAs) for Membrane Protein Stabilisation.** *Chemistry (Weinheim an der Bergstrasse, Germany)*  
Cho, K. H., Du, Y., Scull, N. J., Hariharan, P., Gotfryd, K., Loland, C. J., Guan, L., Byrne, B., Kobilka, B. K., Chae, P. S.  
2015; 21 (28): 10008-10013
  - **SIGNAL TRANSDUCTION. Structural basis for nucleotide exchange in heterotrimeric G proteins.** *Science*  
Dror, R. O., Mildorf, T. J., Hilger, D., Manglik, A., Borhani, D. W., Arlow, D. H., Philippsen, A., Villanueva, N., Yang, Z., Lerch, M. T., Hubbell, W. L., Kobilka, B. K., Sunahara, et al  
2015; 348 (6241): 1361-1365
  - **Structural basis for nucleotide exchange in heterotrimeric G proteins** *SCIENCE*  
Dror, R. O., Mildorf, T. J., Hilger, D., Manglik, A., Borhani, D. W., Arlow, D. H., Philippsen, A., Villanueva, N., Yang, Z., Lerch, M. T., Hubbell, W. L., Kobilka, B. K., Sunahara, et al  
2015; 348 (6241): 1361-1365
  - **Structural Insights into the Dynamic Process of beta(2)-Adrenergic Receptor Signaling** *CELL*  
Manglik, A., Kim, T. H., Masureel, M., Altenbach, C., Yang, Z., Hilger, D., Lerch, M. T., Kobilka, T. S., Thian, F. S., Hubbell, W. L., Prosser, R. S., Kobilka, B. K.  
2015; 161 (5): 1101-1111
  - **Effective Application of Bicelles for Conformational Analysis of G Protein-Coupled Receptors by Hydrogen/Deuterium Exchange Mass Spectrometry** *JOURNAL OF THE AMERICAN SOCIETY FOR MASS SPECTROMETRY*  
Nguyen Minh Duc, N. M., Du, Y., Thorsen, T. S., Lee, S. Y., Zhang, C., Kato, H., Kobilka, B. K., Chung, K. Y.  
2015; 26 (5): 808-817
  - **Effective application of bicelles for conformational analysis of G protein-coupled receptors by hydrogen/deuterium exchange mass spectrometry.** *Journal of the American Society for Mass Spectrometry*  
Duc, N. M., Du, Y., Thorsen, T. S., Lee, S. Y., Zhang, C., Kato, H., Kobilka, B. K., Chung, K. Y.  
2015; 26 (5): 808-17

- **Identifying and quantifying two ligand-binding sites while imaging native human membrane receptors by AFM.** *Nature communications*  
Pfreundschuh, M., Alsteens, D., Wieneke, R., Zhang, C., Coughlin, S. R., Tampé, R., Kobilka, B. K., Müller, D. J.  
2015; 6: 8857-?
- **Development and Characterization of Peptidic Agonists as Gs-biased Allosteric Agonists.** *Journal of Biological Chemistry*  
Carr, R., Du, Y., Quoyer, J., Panettieri, R. A., Janz, J. M., Bouvier, M., Kobilka, B. K., Benovic, J. L.  
2014; 289 (52): 35668-35684
- **Goniometer-based femtosecond crystallography with X-ray free electron lasers** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Cohen, A. E., Soltis, S. M., Gonzalez, A., Aguila, L., Alonso-Mori, R., Barnes, C. O., Baxter, E. L., Brehmer, W., Brewster, A. S., Brunger, A. T., Calero, G., Chang, J. F., Chollet, et al  
2014; 111 (48): 17122-17127
- **Modified T4 Lysozyme Fusion Proteins Facilitate G Protein-Coupled Receptor Crystallography** *STRUCTURE*  
Thorsen, T. S., Matt, R., Weis, W. I., Kobilka, B. K.  
2014; 22 (11): 1657-1664
- **Modified T4 Lysozyme Fusion Proteins Facilitate G Protein-Coupled Receptor Crystallography.** *Structure (London, England : 1993)*  
Thorsen, T. S., Matt, R., Weis, W. I., Kobilka, B. K.  
2014; 22 (11): 1657-64
- **Brian Kobilka Stuck on structure** *NATURE*  
Azouz, H., Kobilka, B.  
2014; 514 (7522): S12-S13
- **Nanoscale high-content analysis using compositional heterogeneities of single proteoliposomes.** *Nature methods*  
Mathiasen, S., Christensen, S. M., Fung, J. J., Rasmussen, S. G., Fay, J. F., Jorgensen, S. K., Veshaguri, S., Farrens, D. L., Kiskowski, M., Kobilka, B., Stamou, D.  
2014; 11 (9): 931-934
- **Visualization of arrestin recruitment by a G-protein-coupled receptor** *NATURE*  
Shukla, A. K., Westfield, G. H., Xiao, K., Reis, R. I., Huang, L., Tripathi-Shukla, P., Qian, J., Li, S., Blanc, A., Oleskie, A. N., Dosey, A. M., Su, M., Liang, et al  
2014; 512 (7513): 218-?
- **Covalent agonists for studying G protein-coupled receptor activation.** *Proceedings of the National Academy of Sciences of the United States of America*  
Weichert, D., Kruse, A. C., Manglik, A., Hiller, C., Zhang, C., Hübner, H., Kobilka, B. K., Gmeiner, P.  
2014; 111 (29): 10744-10748
- **Novel Insights into M-3 Muscarinic Acetylcholine Receptor Physiology and Structure** *14th International Symposium on Cholinergic Mechanisms (ISCM)*  
Kruse, A. C., Li, J., Hu, J., Kobilka, B. K., Wess, J.  
HUMANA PRESS INC.2014: 316-23
- **Muscarinic acetylcholine receptors: novel opportunities for drug development** *NATURE REVIEWS DRUG DISCOVERY*  
Kruse, A. C., Kobilka, B. K., Gautam, D., Sexton, P. M., Christopoulos, A., Wess, J.  
2014; 13 (7): 549-560
- **Muscarinic acetylcholine receptor X-ray structures: potential implications for drug development** *CURRENT OPINION IN PHARMACOLOGY*  
Kruse, A. C., Hu, J., Kobilka, B. K., Wess, J.  
2014; 16: 24-30
- **The role of protein dynamics in GPCR function: insights from the beta(2)AR and rhodopsin** *CURRENT OPINION IN CELL BIOLOGY*  
Manglik, A., Kobilka, B.  
2014; 27: 136-143
- **A general protocol for the generation of Nanobodies for structural biology** *NATURE PROTOCOLS*  
Pardon, E., Laeremans, T., Triest, S., Rasmussen, S. G., Wohlkoenig, A., Ruf, A., Muyldermans, S., Hol, W. G., Kobilka, B. K., Steyaert, J.  
2014; 9 (3): 674-693
- **Regulation of beta(2)-Adrenergic Receptor Function by Conformationally Selective Single-Domain Intrabodies** *MOLECULAR PHARMACOLOGY*  
Staus, D. P., Wingler, L. M., Strachan, R. T., Rasmussen, S. G., Pardon, E., Ahn, S., Steyaert, J., Kobilka, B. K., Lefkowitz, R. J.

2014; 85 (3): 472-481

- **Activation and allosteric modulation of a muscarinic acetylcholine receptor** *NATURE*  
Kruse, A. C., Ring, A. M., Manglik, A., Hu, J., Hu, K., Eitel, K., Huebner, H., Pardon, E., Valant, C., Sexton, P. M., Christopoulos, A., Felder, C. C., Gmeiner, et al  
2013; 504 (7478): 101-?
- **Activation and allosteric modulation of a muscarinic acetylcholine receptor.** *Nature*  
Kruse, A. C., Ring, A. M., Manglik, A., Hu, J., Hu, K., Eitel, K., Hübner, H., Pardon, E., Valant, C., Sexton, P. M., Christopoulos, A., Felder, C. C., Gmeiner, et al  
2013; 504 (7478): 101-106
- **Novel Tripod Amphiphiles for Membrane Protein Analysis** *CHEMISTRY-A EUROPEAN JOURNAL*  
Chae, P. S., Kruse, A. C., Gotfryd, K., Rana, R. R., Cho, K. H., Rasmussen, S. G., Bae, H. E., Chandra, R., Gether, U., Guan, L., Kobilka, B. K., Loland, C. J., Byrne, et al  
2013; 19 (46): 15645-15651
- **Applications of molecular replacement to G protein-coupled receptors** *ACTA CRYSTALLOGRAPHICA SECTION D-BIOLOGICAL CRYSTALLOGRAPHY*  
Kruse, A. C., Manglik, A., Kobilka, B. K., Weis, W. I.  
2013; 69: 2287-2292
- **Adrenaline-activated structure of  $\beta$ 2-adrenoceptor stabilized by an engineered nanobody.** *Nature*  
Ring, A. M., Manglik, A., Kruse, A. C., Enos, M. D., Weis, W. I., Garcia, K. C., Kobilka, B. K.  
2013; 502 (7472): 575-579
- **Adrenaline-activated structure of  $\beta$ 2-adrenoceptor stabilized by an engineered nanobody.** *Nature*  
Ring, A. M., Manglik, A., Kruse, A. C., Enos, M. D., Weis, W. I., Garcia, K. C., Kobilka, B. K.  
2013; 502 (7472): 575-579
- **Muscarinic receptors as model targets and antitargets for structure-based ligand discovery.** *Molecular pharmacology*  
Kruse, A. C., Weiss, D. R., Rossi, M., Hu, J., Hu, K., Eitel, K., Gmeiner, P., Wess, J., Kobilka, B. K., Shoichet, B. K.  
2013; 84 (4): 528-540
- **Muscarinic Receptors as Model Targets and Antitargets for Structure-Based Ligand Discovery** *MOLECULAR PHARMACOLOGY*  
Kruse, A. C., Weiss, D. R., Rossi, M., Hu, J., Hu, K., Eitel, K., Gmeiner, P., Wess, J., Kobilka, B. K., Shoichet, B. K.  
2013; 84 (4): 528-540
- **Correction to "tandem facial amphiphiles for membrane protein stabilization".** *Journal of the American Chemical Society*  
Chae, P. S., Gotfryd, K., Pacyna, J., Miercke, L. J., Rasmussen, S. G., Robbins, R. A., Rana, R. R., Loland, C. J., Kobilka, B., Stroud, R., Byrne, B., Gether, U., Gellman, et al  
2013; 135 (34): 12922-?
- **Quantifying and localizing interactions guiding the structural and functional properties of GPCRs** *9th European-Biophysical-Societies-Association Congress*  
Zocher, M., Kawamura, S., Cheng, Z., Paul, P. S., Kobilka, B. K., Muller, D. J.  
SPRINGER.2013: S108-S108
- **The role of ligands on the equilibria between functional States of a g protein-coupled receptor.** *Journal of the American Chemical Society*  
Kim, T. H., Chung, K. Y., Manglik, A., Hansen, A. L., Dror, R. O., Mildorf, T. J., Shaw, D. E., Kobilka, B. K., Prosser, R. S.  
2013; 135 (25): 9465-9474
- **THE ROLE OF LIGANDS ON THE THERMAL EQUILIBRIA BETWEEN FUNCTIONAL STATES OF A G PROTEIN-COUPLED RECEPTOR**  
Kim, T., Chung, K., Manglik, A., Dror, R. O., Shaw, D. E., Kobilka, B. K., Prosser, R.  
INFORMA HEALTHCARE.2013: 193
- **Structure of active  $\beta$ -arrestin-1 bound to a G-protein-coupled receptor phosphopeptide.** *Nature*  
Shukla, A. K., Manglik, A., Kruse, A. C., Xiao, K., Reis, R. I., Tseng, W., Staus, D. P., Hilger, D., Uysal, S., Huang, L., Paduch, M., Tripathi-Shukla, P., Koide, et al  
2013; 497 (7447): 137-141
- **G-protein coupled receptors in virtual screening: Functional fidelity and selectivity**  
Weiss, D. R., Ahn, S., Sassano, M. F., Kruse, A. C., Karpiak, J., Roth, B. L., Kobilka, B. K., Shoichet, B. K., Lefkowitz, R. J.  
AMER CHEMICAL SOC.2013

- **Structural insights into the dynamic process of G-protein- coupled receptor activation**  
Kobilka, B.  
FEDERATION AMER SOC EXP BIOL.2013
- **The Dynamic Process of beta(2)-Adrenergic Receptor Activation** *CELL*  
Nygaard, R., Zou, Y., Dror, R. O., Mildorf, T. J., Arlow, D. H., Manglik, A., Pan, A. C., Liu, C. W., Fung, J. J., Bokoch, M. P., Thian, F. S., Kobilka, T. S., Shaw, et al  
2013; 152 (3): 532-542
- **Membrane Curvature Regulates the Oligomerization of Human beta(2)-Adrenergic Receptors** *57th Annual Meeting of the Biophysical-Society*  
Mathiasen, S., Tonnesen, A., Christensen, S., Fung, J. J., Rasmussen, S. G., Borrero, E., Provasi, D., Filizola, M., Kobilka, B., Stamou, D.  
CELL PRESS.2013: 42A-42A
- **Identification of GPCR-Interacting Cytosolic Proteins Using HDL Particles and Mass Spectrometry-Based Proteomic Approach** *PLOS ONE*  
Chung, K. Y., Day, P. W., Velez-Ruiz, G., Sunahara, R. K., Kobilka, B. K.  
2013; 8 (1)
- **Glucose-Neopentyl Glycol (GNG) amphiphiles for membrane protein study** *CHEMICAL COMMUNICATIONS*  
Chae, P. S., Rana, R. R., Gotfryd, K., Rasmussen, S. G., Kruse, A. C., Cho, K. H., Capaldi, S., Carlsson, E., Kobilka, B., Loland, C. J., Gether, U., Banerjee, S., Byrne, et al  
2013; 49 (23): 2287-2289
- **The Structural Basis of G-Protein-Coupled Receptor Signaling (Nobel Lecture)** *ANGEWANDTE CHEMIE-INTERNATIONAL EDITION*  
Kobilka, B.  
2013; 52 (25): 6380-6388
- **High-resolution crystal structure of human protease-activated receptor 1** *NATURE*  
Zhang, C., Srinivasan, Y., Arlow, D. H., Fung, J. J., Palmer, D., Zheng, Y., Green, H. F., Pandey, A., Dror, R. O., Shaw, D. E., Weis, W. I., Coughlin, S. R., Kobilka, et al  
2012; 492 (7429): 387-?
- **Cholesterol increases kinetic, energetic, and mechanical stability of the human beta(2)-adrenergic receptor** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Zocher, M., Zhang, C., Rasmussen, S. G., Kobilka, B. K., Mueller, D. J.  
2012; 109 (50): E3463-E3472
- **Role of Detergents in Conformational Exchange of a G Protein-coupled Receptor** *JOURNAL OF BIOLOGICAL CHEMISTRY*  
Chung, K. Y., Kim, T. H., Manglik, A., Alvares, R., Kobilka, B. K., Prosser, R. S.  
2012; 287 (43): 36305-36311
- **N-Terminal T4 Lysozyme Fusion Facilitates Crystallization of a G Protein Coupled Receptor** *PLOS ONE*  
Zou, Y., Weis, W. I., Kobilka, B. K.  
2012; 7 (10)
- **Ligand-Specific Interactions Modulate Kinetic, Energetic, and Mechanical Properties of the Human beta(2) Adrenergic Receptor** *STRUCTURE*  
Zocher, M., Fung, J. J., Kobilka, B. K., Mueller, D. J.  
2012; 20 (8): 1391-1402
- **Ligand-specific interactions modulate kinetic, energetic, and mechanical properties of the human  $\beta$ 2 adrenergic receptor.** *Structure*  
Zocher, M., Fung, J. J., Kobilka, B. K., Müller, D. J.  
2012; 20 (8): 1391-1402
- **A new era of GPCR structural and chemical biology** *NATURE CHEMICAL BIOLOGY*  
Granier, S., Kobilka, B.  
2012; 8 (8): 670-673
- **A New Class of Amphiphiles Bearing Rigid Hydrophobic Groups for Solubilization and Stabilization of Membrane Proteins** *CHEMISTRY-A EUROPEAN JOURNAL*  
Chae, P. S., Rasmussen, S. G., Rana, R. R., Gotfryd, K., Kruse, A. C., Manglik, A., Cho, K. H., Nurva, S., Gether, U., Guan, L., Loland, C. J., Byrne, B., Kobilka, et al

2012; 18 (31): 9485-9490

- **Crystal structure of the mu-opioid receptor bound to a morphinan antagonist** *NATURE*  
Manglik, A., Kruse, A. C., Kobilka, T. S., Thian, F. S., Mathiesen, J. M., Sunahara, R. K., Pardo, L., Weis, W. I., Kobilka, B. K., Granier, S.  
2012; 485 (7398): 321-U170
- **Structure of the delta-opioid receptor bound to naltrindole** *NATURE*  
Granier, S., Manglik, A., Kruse, A. C., Kobilka, T. S., Thian, F. S., Weis, W. I., Kobilka, B. K.  
2012; 485 (7398): 400-U171
- **Structure-based drug screening for G-protein-coupled receptors** *TRENDS IN PHARMACOLOGICAL SCIENCES*  
Shoichet, B. K., Kobilka, B. K.  
2012; 33 (5): 268-272
- **Structure and dynamics of the M3 muscarinic acetylcholine receptor** *NATURE*  
Kruse, A. C., Hu, J., Pan, A. C., Arlow, D. H., Rosenbaum, D. M., Rosemond, E., Green, H. F., Liu, T., Chae, P. S., Dror, R. O., Shaw, D. E., Weis, W. I., Wess, et al  
2012; 482 (7386): 552-556
- **Structure of the human M2 muscarinic acetylcholine receptor bound to an antagonist** *NATURE*  
Haga, K., Kruse, A. C., Asada, H., Yurugi-Kobayashi, T., Shiroishi, M., Zhang, C., Weis, W. I., Okada, T., Kobilka, B. K., Haga, T., Kobayashi, T.  
2012; 482 (7386): 547-U147
- **Highly Accurate Quantification of the Oligomerization of the beta 2 Adrenergic Receptor using FRET**  
Mathiasen, S., Tonnesen, A., Christensen, S. M., Fung, J., Kobilka, B., Stamou, D.  
CELL PRESS.2012: 232A-233A
- **Anti-Brownian ELektrokinetic (ABEL) Trapping of Single beta(2)-Adrenergic Receptors in the Absence and Presence of Agonist** *Conference on Single Molecule Spectroscopy and Super-Resolution Imaging V*  
Bockenhauer, S., Fuerstenberg, A., Yao, X. J., Kobilka, B. K., Moerner, W. E.  
SPIE-INT SOC OPTICAL ENGINEERING.2012
- **Structure of the muscarinic acetylcholine receptor M2 subtype bound with an antagonist QNB (3-quinuclidinyl benzilate)**  
Haga, T., Haga, K., Kruse, A. C., Kobilka, B. K., Asada, H., Kobayashi, T.  
JAPANESE PHARMACOLOGICAL SOC.2012: 37P
- **My early days in GPCR structural biology: from clone to crystal** *NATURE STRUCTURAL & MOLECULAR BIOLOGY*  
Kobilka, B.  
2011; 18 (12): 1312-13
- **Conformational dynamics of single G protein-coupled receptors in solution.** *journal of physical chemistry. B*  
Bockenhauer, S., Fuerstenberg, A., Yao, X. J., Kobilka, B. K., Moerner, W. E.  
2011; 115 (45): 13328-13338
- **Conformational Dynamics of Single G Protein-Coupled Receptors in Solution** *JOURNAL OF PHYSICAL CHEMISTRY B*  
Bockenhauer, S., Fuerstenberg, A., Yao, X. J., Kobilka, B. K., Moerner, W. E.  
2011; 115 (45): 13328-13338
- **Crystal structure of the beta(2) adrenergic receptor-Gs protein complex** *NATURE*  
Rasmussen, S. G., DeVree, B. T., Zou, Y., Kruse, A. C., Chung, K. Y., Kobilka, T. S., Thian, F. S., Chae, P. S., Pardon, E., Calinski, D., Mathiesen, J. M., Shah, S. T., Lyons, et al  
2011; 477 (7366): 549-U311
- **Conformational changes in the G protein Gs induced by the beta(2) adrenergic receptor** *NATURE*  
Chung, K. Y., Rasmussen, S. G., Liu, T., Li, S., DeVree, B. T., Chae, P. S., Calinski, D., Kobilka, B. K., Woods, V. L., Sunahara, R. K.  
2011; 477 (7366): 611-U143
- **Structural flexibility of the Gas alpha-helical domain in the beta(2)-adrenoceptor Gs complex** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Westfield, G. H., Rasmussen, S. G., Su, M., Dutta, S., DeVree, B. T., Chung, K. Y., Calinski, D., Velez-Ruiz, G., Oleskie, A. N., Pardon, E., Chae, P. S., Liu, T., Li, et al

2011; 108 (38): 16086-16091

- **Nanobody stabilization of G protein-coupled receptor conformational states** *CURRENT OPINION IN STRUCTURAL BIOLOGY*  
Steyaert, J., Kobilka, B. K.  
2011; 21 (4): 567-572
- **Structural insights into adrenergic receptor function and pharmacology** *TRENDS IN PHARMACOLOGICAL SCIENCES*  
Kobilka, B. K.  
2011; 32 (4): 213-218
- **Structure and function of an irreversible agonist-beta(2) adrenoceptor complex** *NATURE*  
Rosenbaum, D. M., Zhang, C., Lyons, J. A., Holl, R., Aragao, D., Arlow, D. H., Rasmussen, S. G., Choi, H., DeVree, B. T., Sunahara, R. K., Chae, P. S., Gellman, S. H., Dror, et al  
2011; 469 (7329): 236-240
- **Structure of a nanobody-stabilized active state of the beta(2) adrenoceptor** *NATURE*  
Rasmussen, S. G., Choi, H., Fung, J. J., Pardon, E., Casarosa, P., Chae, P. S., DeVree, B. T., Rosenbaum, D. M., Thian, F. S., Kobilka, T. S., Schnapp, A., Konetzki, I., Sunahara, et al  
2011; 469 (7329): 175-180
- **Tandem Facial Amphiphiles for Membrane Protein Stabilization** *JOURNAL OF THE AMERICAN CHEMICAL SOCIETY*  
Chae, P. S., Gotfryd, K., Pacyna, J., Miercke, L. J., Rasmussen, S. G., Robbins, R. A., Rana, R. R., Loland, C. J., Kobilka, B., Stroud, R., Byrne, B., Gether, U., Gellman, et al  
2010; 132 (47): 16750-16752
- **Maltose-neopentyl glycol (MNG) amphiphiles for solubilization, stabilization and crystallization of membrane proteins** *NATURE METHODS*  
Chae, P. S., Rasmussen, S. G., Rana, R. R., Gotfryd, K., Chandra, R., Goren, M. A., Kruse, A. C., Nurva, S., Loland, C. J., Pierre, Y., Drew, D., Popot, J., Picot, et al  
2010; 7 (12): 1003-U90
- **Energy Landscapes as a Tool to Integrate GPCR Structure, Dynamics, and Function** *PHYSIOLOGY*  
Deupi, X., Kobilka, B. K.  
2010; 25 (5): 293-303
- **International Workshop at the Nobel Forum, Karolinska Institutet on G protein-coupled receptors: finding the words to describe monomers, oligomers, and their molecular mechanisms and defining their meaning. Can a consensus be reached?** *JOURNAL OF RECEPTORS AND SIGNAL TRANSDUCTION*  
Kenakin, T., Agnati, L. F., Caron, M., Fredholm, B., Guidoli, D., Kobilka, B., Lefkowitz, R. W., Lohse, M., Woods, A., Fuxe, K.  
2010; 30 (5): 284-286
- **A Device for Separated and Reversible Co-Culture of Cardiomyocytes** *BIOTECHNOLOGY PROGRESS*  
Chen, M. Q., Whittington, R. H., Day, P. W., Kobilka, B. K., Giovangrandi, L., Kovacs, G. T.  
2010; 26 (4): 1164-1171
- **Regulation of G-Protein Coupled Receptor Traffic by an Evolutionary Conserved Hydrophobic Signal** *TRAFFIC*  
Angelotti, T., Daunt, D., Shcherbakova, O. G., Kobilka, B., Hurt, C. M.  
2010; 11 (4): 560-578
- **Ligand-specific regulation of the extracellular surface of a G-protein-coupled receptor** *NATURE*  
Bokoch, M. P., Zou, Y., Rasmussen, S. G., Liu, C. W., Nygaard, R., Rosenbaum, D. M., Fung, J. J., Choi, H., Thian, F. S., Kobilka, T. S., Puglisi, J. D., Weis, W. I., Pardo, et al  
2010; 463 (7277): 108-U121
- **Conformational Changes in GPCR Surface and Core Probed by [C-13]-Methyl NMR Spectroscopy**  
Bokoch, M. P., Nygaard, R., Zou, Y., Rasmussen, S. F., Pardo, L., Prosser, R., Mueller, L., Kobilka, B. K.  
CELL PRESS.2010: 418A
- **Ligand-regulated oligomerization of beta(2)-adrenoceptors in a model lipid bilayer** *EMBO JOURNAL*  
Fung, J. J., Deupi, X., Pardo, L., Yao, X. J., Velez-Ruiz, G. A., DeVree, B. T., Sunahara, R. K., Kobilka, B. K.  
2009; 28 (21): 3315-3328
- **The effect of ligand efficacy on the formation and stability of a GPCR-G protein complex.** *Proceedings of the National Academy of Sciences of the United States of America*

- Yao, X. J., Vélez Ruiz, G., Whorton, M. R., Rasmussen, S. G., DeVree, B. T., Deupi, X., Sunahara, R. K., Kobilka, B.  
2009; 106 (23): 9501-9506
- **The effect of ligand efficacy on the formation and stability of a GPCR-G protein complex** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Yao, X. J., Ruiz, G. V., Whorton, M. R., Rasmussen, S. G., DeVree, B. T., Deupi, X., Sunahara, R. K., Kobilka, B.  
2009; 106 (23): 9501-9506
  - **The structure and function of G-protein-coupled receptors** *NATURE*  
Rosenbaum, D. M., Rasmussen, S. G., Kobilka, B. K.  
2009; 459 (7245): 356-363
  - **Structure-based discovery of beta(2)-adrenergic receptor ligands** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Kolb, P., Rosenbaum, D. M., Irwin, J. J., Fung, J. J., Kobilka, B. K., Shoichet, B. K.  
2009; 106 (16): 6843-6848
  - **A Microsecond Time Scale Molecular Dynamics Simulation of B2AR in a Membrane**  
Romo, T. D., Grossfield, A., Pitman, M. C., Deupi, X., Cordomi, A., Kobilka, B.  
CELL PRESS.2009: 340A
  - **Understanding the ligand-receptor-G protein ternary complex for GPCR drug discovery.** *Methods in molecular biology (Clifton, N.J.)*  
Ratnala, V. R., Kobilka, B.  
2009; 552: 67-77
  - **CRYSTAL STRUCTURES OF THE beta(2)-ADRENERGIC RECEPTOR** *40th Erice Course on From Molecules to Medicine - Structure of Biological Macromolecules and Its Relevance in Combating New Diseases and Bioterrorism*  
Weis, W. I., Rosenbaum, D. M., Rasmussen, S. G., Choi, H., Thian, F. S., Kobilka, T. S., Yao, X., Day, P. W., Parnot, C., Fung, J. J., Ratnala, V. R., Kobilka, B. K., Cherezov, et al  
SPRINGER.2009: 217-230
  - **Structural insights into G-protein-coupled receptor activation** *CURRENT OPINION IN STRUCTURAL BIOLOGY*  
Weis, W. I., Kobilka, B. K.  
2008; 18 (6): 734-740
  - **Signaling from beta 1-and beta 2-adrenergic receptors is defined by differential interactions with PDE4**  
Richter, W., Day, P., Agrawal, R., Bruss, M. D., Granier, S., Wang, Y. L., Rasmussen, S. G., Homer, K., Wang, P., Lei, T., Patterson, A. J., Kobilka, B., Conti, et al  
FEDERATION AMER SOC EXP BIOL.2008
  - **New G-protein-coupled receptor crystal structures: insights and limitations** *TRENDS IN PHARMACOLOGICAL SCIENCES*  
Kobilka, B., Schertler, G. F.  
2008; 29 (2): 79-83
  - **Signaling from beta(1)- and beta(2)-adrenergic receptors is defined by differential interactions with PDE4** *EMBO JOURNAL*  
Richter, W., Day, P., Agrawal, R., Bruss, M. D., Granier, S., Wang, Y. L., Rasmussen, S. G., Horner, K., Wang, P., Lei, T., Patterson, A. J., Kobilka, B., Conti, et al  
2008; 27 (2): 384-393
  - **GPCR engineering yields high-resolution structural insights into beta(2)-adrenergic receptor function** *SCIENCE*  
Rosenbaum, D. M., Cherezov, V., Hanson, M. A., Rasmussen, S. G., Thian, F. S., Kobilka, T. S., Choi, H., Yao, X., Weis, W. I., Stevens, R. C., Kobilka, B. K.  
2007; 318 (5854): 1266-1273
  - **High-resolution crystal structure of an engineered human beta(2)-adrenergic G protein-coupled receptor** *SCIENCE*  
Cherezov, V., Rosenbaum, D. M., Hanson, M. A., Rasmussen, S. G., Thian, F. S., Kobilka, T. S., Choi, H., Kuhn, P., Weis, W. I., Kobilka, B. K., Stevens, R. C.  
2007; 318 (5854): 1258-1265
  - **Crystal structure of the human beta(2) adrenergic G-protein-coupled receptor** *NATURE*  
Rasmussen, S. G., Choi, H., Rosenbaum, D. M., Kobilka, T. S., Thian, F. S., Edwards, P. C., Burghammer, M., Ratnala, V. R., Sanishvili, R., Fischetti, R. F., Schertler, G. F., Weis, W. I., Kobilka, et al  
2007; 450 (7168): 383-U4
  - **A monoclonal antibody for G protein-coupled receptor crystallography** *NATURE METHODS*

- Day, P. W., Rasmussen, S. G., Parnot, C., Fung, J. J., Masood, A., Kobilka, T. S., Yao, X., Choi, H., Weis, W. I., Rohrer, D. K., Kobilka, B. K.  
2007; 4 (11): 927-929
- **N-ethylmaleimide-sensitive factor regulates beta(2) adrenoceptor trafficking and signaling in cardiomyocytes** *MOLECULAR PHARMACOLOGY*  
Wang, Y., Lauffer, B., von Zastrow, M., Kobilka, B. K., Xiang, Y.  
2007; 72 (2): 429-439
  - **Conformational complexity of G-protein-coupled receptors** *TRENDS IN PHARMACOLOGICAL SCIENCES*  
Kobilka, B. K., Deupi, X.  
2007; 28 (8): 397-406
  - **Structure and conformational changes in the C-terminal domain of the beta(2)-adrenoceptor - Insights from fluorescence resonance energy transfer studies** *JOURNAL OF BIOLOGICAL CHEMISTRY*  
Granier, S., Kim, S., Shafer, A. M., Ratnala, V. R., Fung, J. J., Zare, R. N., Kobilka, B.  
2007; 282 (18): 13895-13905
  - **A monomeric G protein-coupled receptor isolated in a high-density lipoprotein particle efficiently activates its G protein** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Whorton, M. R., Bokoch, M. P., Rasmussen, S. G., Huang, B., Zare, R. N., Kobilka, B., Sunahara, R. K.  
2007; 104 (18): 7682-7687
  - **G protein coupled receptor structure and activation** *BIOCHIMICA ET BIOPHYSICA ACTA-BIOMEMBRANES*  
Kobilka, B. K.  
2007; 1768 (4): 794-807
  - **Distinct PDE4D splice variants regulate beta-adrenergic signaling in neonatal mouse cardiac myocytes** *Experimental Biology 2007 Annual Meeting*  
Richter, W., Day, P., Wang, Y., Bruss, M., Wang, P., Kobilka, B., Conti, M.  
FEDERATION AMER SOC EXP BIOL.2007: A997-A997
  - **Organization of beta-adrenoceptor signaling compartments by sympathetic innervation of cardiac myocytes** *JOURNAL OF CELL BIOLOGY*  
Shcherbakova, O. G., Hurt, C. M., Xiang, Y., Dell'Acqua, M. L., Zhang, Q., Tsien, R. W., Kobilka, B. K.  
2007; 176 (4): 521-533
  - **Counting low-copy number proteins in a single cell** *SCIENCE*  
Huang, B., Wu, H., Bhaya, D., Grossman, A., Granier, S., Kobilka, B. K., Zare, R. N.  
2007; 315 (5808): 81-84
  - **Activation of G Protein Coupled Receptors** *MECHANISMS AND PATHWAYS OF HETEROTRIMERIC G PROTEIN SIGNALING*  
Deupi, X., Kobilka, B.  
2007; 74: 137-166
  - **PDZ-domain arrays for identifying components of GPCR signaling complexes** *TRENDS IN PHARMACOLOGICAL SCIENCES*  
Day, P., Kobilka, B.  
2006; 27 (10): 509-511
  - **PHYS 338-Quantitating low-copy-number proteins in a single cell by direct counting**  
Zare, R. N., Huang, B., Wu, H., Bhaya, D., Grossman, A. R., Kobilka, B. K.  
AMER CHEMICAL SOC.2006
  - **Differential targeting and function of alpha(2A) and alpha(2C) adrenergic receptor subtypes in cultured sympathetic neurons** *NEUROPHARMACOLOGY*  
Brum, P. C., Hurt, C. M., Shcherbakova, O. G., Kobilka, B., Angelotti, T.  
2006; 51 (3): 397-413
  - **Coupling ligand structure to specific conformational switches in the beta(2)-adrenoceptor** *NATURE CHEMICAL BIOLOGY*  
Yao, X., Parnot, C., Deupi, X., Ratnala, V. R., Swaminath, G., Farrens, D., Kobilka, B.  
2006; 2 (8): 417-422
  - **Phospholipid biotinylation of polydimethylsiloxane (PDMS) for protein immobilization** *LAB ON A CHIP*  
Huang, B., Wu, H. K., Kim, S., Kobilka, B. K., Zare, R. N.  
2006; 6 (3): 369-373



- **Effect of targeted deletions of beta(1)- and beta(2)-adrenergic-receptor subtypes on heart rate variability** *AMERICAN JOURNAL OF PHYSIOLOGY-HEART AND CIRCULATORY PHYSIOLOGY*  
Ecker, P. M., Lin, C. C., Powers, J., Kobilka, B. K., Dubin, A. M., Bernstein, D.  
2006; 290 (1): H192-H199
- **Differential cardioprotective/cardiotoxic effects mediated by ss-adrenergic receptor subtypes** *AMERICAN JOURNAL OF PHYSIOLOGY-HEART AND CIRCULATORY PHYSIOLOGY*  
Bernstein, D., Fajardo, G., Zhao, M. M., Urashima, T., Powers, J., Berry, G., Kobilka, B. K.  
2005; 289 (6): H2441-H2449
- **Using synthetic lipids to stabilize purified beta(2) adrenoceptor in detergent micelles** *ANALYTICAL BIOCHEMISTRY*  
Yao, Z. P., Kobilka, B.  
2005; 343 (2): 344-346
- **Probing the beta(2) adrenoceptor binding site with catechol reveals differences in binding and activation by agonists and partial agonists** *JOURNAL OF BIOLOGICAL CHEMISTRY*  
Swaminath, G., Deupi, X., LEE, T. W., Zhu, W., Thian, F. S., Kobilka, T. S., Kobilka, B.  
2005; 280 (23): 22165-22171
- **Mass spectrometric analysis of agonist effects on posttranslational modifications of the beta-2 adrenoceptor in mammalian cells** *BIOCHEMISTRY*  
Trester-Zedlitz, M., Burlingame, A., Kobilka, B., von Zastrow, M.  
2005; 44 (16): 6133-6143
- **Phosphodiesterase 4D is required for beta(2) adrenoceptor subtype-specific signaling in cardiac myocytes** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Xiang, Y., Naro, F., Zoudilova, M., Jin, S. L., Conti, M., Kobilka, B.  
2005; 102 (3): 909-914
- **Toward understanding GPCR dimers** *NATURE STRUCTURAL & MOLECULAR BIOLOGY*  
Parnot, C., Kobilka, B.  
2004; 11 (8): 691-692
- **The state of GPCR research in 2004** *NATURE REVIEWS DRUG DISCOVERY*  
Bartfai, T., Benovic, J. L., Bockaert, J., Bond, R. A., Bouvier, M., Christopoulos, A., Civelli, O., Devi, L. A., George, S. R., Inui, A., Kobilka, B., Leurs, R., Neubig, et al  
2004; 3 (7): 574-626
- **Agonist binding: A multistep process** *MOLECULAR PHARMACOLOGY*  
Kobilka, B.  
2004; 65 (5): 1060-1062
- **Protecting the myocardium: A role for the beta 2 adrenergic receptor in the heart** *CRITICAL CARE MEDICINE*  
Patterson, A. J., Zhu, W. Z., Chow, A., Agrawal, R., Kosek, J., Xiao, R. P., Kobilka, B.  
2004; 32 (4): 1041-1048
- **Plasmon-waveguide resonance studies of ligand binding to the human beta(2)-adrenergic receptor** *BIOCHEMISTRY*  
Devanathan, S., Yao, Z. P., Salamon, Z., Kobilka, B., Tollin, G.  
2004; 43 (11): 3280-3288
- **Sequential binding of agonists to the beta(2) adrenoceptor - Kinetic evidence for intermediate conformational states** *JOURNAL OF BIOLOGICAL CHEMISTRY*  
Swaminath, G., Xiang, Y., LEE, T. W., Steenhuis, J., Parnot, C., Kobilka, B. K.  
2004; 279 (1): 686-691
- **The PDZ-binding motif of the beta(2)-adrenoceptor is essential for physiologic signaling and trafficking in cardiac myocytes** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Xiang, Y., Kobilka, B.  
2003; 100 (19): 10776-10781
- **Myocyte adrenoceptor signaling pathways** *SCIENCE*  
Xiang, Y., Kobilka, B. K.

2003; 300 (5625): 1530-1532

- **Genetic manipulation of mice for analysis of beta-adrenergic receptor pharmacology and physiology** *Experimental Biology 2003 Annual Meeting*  
Angelotti, T., Desai, K., Kobilka, B.  
FEDERATION AMER SOC EXP BIOL.2003: A210-A210
- **Identification of an allosteric binding site for ZN(2+) on the beta(2) adrenergic receptor** *JOURNAL OF BIOLOGICAL CHEMISTRY*  
Swaminath, G., LEE, T. W., Kobilka, B.  
2003; 278 (1): 352-356
- **Efficient adenylyl cyclase activation by a beta(2)-adrenoceptor-G(i)alpha(2) fusion protein** *BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS*  
Seifert, R., Wenzel-Seifert, K., Arthur, J. M., Jose, P. O., Kobilka, B. K.  
2002; 298 (5): 824-828
- **Differential cardioprotective/cardiotoxic effects of beta adrenergic receptor subtypes in isolated cardiac myocytes and fibroblasts** *American-Heart-Association Abstracts From Scientific Sessions*  
Fajardo, G., Zhao, M. M., Powers, J., Kobilka, B., Bernstein, D.  
LIPPINCOTT WILLIAMS & WILKINS.2002: 123-23
- **Abnormal cardiac function associated with sympathetic nervous system hyperactivity in mice** *AMERICAN JOURNAL OF PHYSIOLOGY-HEART AND CIRCULATORY PHYSIOLOGY*  
Brum, P. C., Kosek, J., Patterson, A., Bernstein, D., Kobilka, B.  
2002; 283 (5): H1838-H1845
- **Functional immobilization of a ligand-activated G-protein-coupled receptor** *CHEMBIOCHEM*  
Neumann, L., Wohland, T., Whelan, R. J., Zare, R. N., Kobilka, B. K.  
2002; 3 (10): 993-998
- **Heterozygous alpha(2A)-adrenergic receptor mice unveil unique therapeutic benefits of partial agonists** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Tan, C. M., Wilson, M. H., MacMillan, L. B., Kobilka, B. K., Limbird, L. E.  
2002; 99 (19): 12471-12476
- **The PDZ binding motif of the beta(1) adrenergic receptor modulates receptor trafficking and signaling in cardiac myocytes** *JOURNAL OF BIOLOGICAL CHEMISTRY*  
Xiang, Y., Devic, E., Kobilka, B.  
2002; 277 (37): 33783-33790
- **Caveolar localization dictates physiologic signaling of beta(2)-adrenoceptors in neonatal cardiac myocytes** *JOURNAL OF BIOLOGICAL CHEMISTRY*  
Xiang, Y., Rybin, V. O., Steinberg, S. F., Kobilka, B.  
2002; 277 (37): 34280-34286
- **Analysis of bimolecular interactions using a miniaturized surface plasmon resonance sensor** *ANALYTICAL CHEMISTRY*  
Whelan, R. J., Wohland, T., Neumann, L., Huang, B., Kobilka, B. K., Zare, R. N.  
2002; 74 (17): 4570-4576
- **beta AR signaling required for diet-induced thermogenesis and obesity resistance** *SCIENCE*  
Bachman, E. S., Dhillon, H., Zhang, C. Y., Cinti, S., Bianco, A. C., Kobilka, B. K., Lowell, B. B.  
2002; 297 (5582): 843-845
- **The ectodomain of the luteinizing hormone receptor interacts with exoloop 2 to constrain the transmembrane region - Studies using chimeric human and fly receptors** *JOURNAL OF BIOLOGICAL CHEMISTRY*  
NISHI, S., Nakabayashi, K., Kobilka, B., Hsueh, A. J.  
2002; 277 (6): 3958-3964
- **Isoflurane and nociception - Spinal alpha(2A) adrenoceptors mediate antinociception while supraspinal alpha(1) adrenoceptors mediate pronociception** *ANESTHESIOLOGY*  
Kingery, W. S., Agashe, G. S., Guo, T. Z., Sawamura, S., Davies, M. F., Clark, J. D., Kobilka, B. K., Maze, M.  
2002; 96 (2): 367-374

- **Use of fluorescence spectroscopy to study conformational changes in the beta(2)-adrenoceptor** *G PROTEIN PATHWAYS, PT A, RECEPTORS*  
Kobilka, B. K., Gether, U.  
2002; 343: 170-182
- **Allosteric modulation of beta(2)-adrenergic receptor by Zn<sup>2+</sup>** *MOLECULAR PHARMACOLOGY*  
Swaminath, G., Steenhuis, J., Kobilka, B., LEE, T. W.  
2002; 61 (1): 65-72
- **Differential distribution of beta-adrenergic receptor subtypes in blood vessels of knockout mice lacking beta(1)- or beta(2)-adrenergic receptors** *MOLECULAR PHARMACOLOGY*  
Chruscinski, A., Brede, M. E., Meinel, L., Lohse, M. J., Kobilka, B. K., Hein, L.  
2001; 60 (5): 955-962
- **beta-adrenergic receptor subtype-specific signaling in cardiac myocytes from beta(1) and beta(2) adrenoceptor knockout mice** *MOLECULAR PHARMACOLOGY*  
Devic, E., Xiang, Y., Gould, D., Kobilka, B.  
2001; 60 (3): 577-583
- **A genetically engineered cell-based biosensor for functional classification of agents** *BIOSENSORS & BIOELECTRONICS*  
Aravanis, A. M., DeBusschere, B. D., Chruscinski, A. J., Gilchrist, K. H., Kobilka, B. K., Kovacs, G. T.  
2001; 16 (7-8): 571-577
- **Single-molecule spectroscopy of the beta(2) adrenergic receptor: Observation of conformational substates in a membrane protein** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Peleg, G., Ghanouni, P., Kobilka, B. K., Zare, R. N.  
2001; 98 (15): 8469-8474
- **Functionally different agonists induce distinct conformations in the G protein coupling domain of the beta(2) adrenergic receptor** *JOURNAL OF BIOLOGICAL CHEMISTRY*  
Ghanouni, P., Gryczynski, Z., Steenhuis, J. J., LEE, T. W., Farrens, D. L., Lakowicz, J. R., Kobilka, B. K.  
2001; 276 (27): 24433-24436
- **Functional differences between full and partial agonists: Evidence for ligand-specific receptor conformations** *JOURNAL OF PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS*  
Seifert, R., Wenzel-Seifert, K., Gether, U., Kobilka, B. K.  
2001; 297 (3): 1218-1226
- **Agonist-induced conformational changes in the G-protein-coupling domain of the beta(2) adrenergic receptor** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Ghanouni, P., Steenhuis, J. J., Farrens, D. L., Kobilka, B. K.  
2001; 98 (11): 5997-6002
- **Antinociceptive action of nitrous oxide is mediated by stimulation of noradrenergic neurons in the brainstem and activation of alpha(2B) adrenoceptors** *JOURNAL OF NEUROSCIENCE*  
Sawamura, S., Kingery, W. S., Davies, M. F., Agashe, G. S., Clark, J. D., Kobilka, B. K., Hashimoto, T., Maze, M.  
2000; 20 (24): 9242-9251
- **Cell-type specific targeting of the alpha(2c)-adrenoceptor - Evidence for the organization of receptor microdomains during neuronal differentiation of PC12 cells** *JOURNAL OF BIOLOGICAL CHEMISTRY*  
Hurt, C. M., Feng, F. Y., Kobilka, B.  
2000; 275 (45): 35424-35431
- **Activation of the luteinizing hormone receptor following substitution of Ser-277 with selective hydrophobic residues in the ectodomain hinge region** *JOURNAL OF BIOLOGICAL CHEMISTRY*  
Nakabayashi, K., Kudo, M., Kobilka, B., Hsueh, A. W.  
2000; 275 (39): 30264-30271
- **Allosteric activation of the CaR by L-amino acids** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Kobilka, B.  
2000; 97 (9): 4419-4420

- **The effect of pH on beta(2) adrenoceptor function - Evidence for protonation-dependent activation** *JOURNAL OF BIOLOGICAL CHEMISTRY*  
Ghanouni, P., Schambye, H., Seifert, R., LEE, T. W., Rasmussen, S. G., Gether, U., Kobilka, B. K.  
2000; 275 (5): 3121-3127
- **The Effect of pH on b2 Adrenoceptor Function. Evidence for protonation-dependent activation** *J Biol Chem*  
Kobilka, B.K., Ghanouni, P., Schambye, H., Seifert, R., Lee, T.W., Rasmussen, S.G., Gether, U.  
2000
- **Two functionally distinct alpha(2)-adrenergic receptors regulate sympathetic neurotransmission** *NATURE*  
Hein, L., Altman, J. D., Kobilka, B. K.  
1999; 402 (6758): 181-184
- **ERK plays a regulatory role in induction of LTP by theta frequency stimulation and its modulation by beta-adrenergic receptors** *NEURON*  
Winder, D. G., Martin, K. C., Muzzio, I. A., Rohrer, D., Chruscinski, A., Kobilka, B., Kandel, E. R.  
1999; 24 (3): 715-726
- **Restricting the mobility of G(s)alpha: Impact on receptor and effector coupling** *BIOCHEMISTRY*  
LEE, T. W., Seifert, R., Guan, X. M., Kobilka, B. K.  
1999; 38 (42): 13801-13809
- **GPCR-G alpha fusion proteins: molecular analysis of receptor-G-protein coupling** *TRENDS IN PHARMACOLOGICAL SCIENCES*  
Seifert, R., Wenzel-Seifert, K., Kobilka, B. K.  
1999; 20 (9): 383-389
- **Effects of guanine, inosine, and xanthine nucleotides on beta(2)-adrenergic receptor/G(s) interactions: Evidence for multiple receptor conformations** *MOLECULAR PHARMACOLOGY*  
Seifert, R., Gether, U., Wenzel-Seifert, K., Kobilka, B. K.  
1999; 56 (2): 348-358
- **Abnormal regulation of the sympathetic nervous system in alpha(2A)-adrenergic receptor knockout mice** *MOLECULAR PHARMACOLOGY*  
Altman, J. D., Trendelenburg, A. U., MacMillan, L., Bernstein, D., Limbird, L., Starke, K., Kobilka, B. K., Hein, L.  
1999; 56 (1): 154-161
- **Cardiovascular and metabolic alterations in mice lacking both beta 1-and beta 2-adrenergic receptors** *JOURNAL OF BIOLOGICAL CHEMISTRY*  
Rohrer, D. K., Chruscinski, A., Schauble, E. H., Bernstein, D., Kobilka, B. K.  
1999; 274 (24): 16701-16708
- **Targeted disruption of the beta 2 adrenergic receptor gene** *JOURNAL OF BIOLOGICAL CHEMISTRY*  
Chruscinski, A. J., Rohrer, D. K., Schauble, E., Desai, K. H., Bernstein, D., Kobilka, B. K.  
1999; 274 (24): 16694-16700
- **Examining the efficiency of receptor/G-protein coupling with a cleavable beta(2)-adrenoceptor-G(s alpha) fusion protein** *EUROPEAN JOURNAL OF BIOCHEMISTRY*  
Seifert, R., Wenzel-Seifert, K., Gether, U., Lam, V. T., Kobilka, B. K.  
1999; 260 (3): 661-666
- **Cardiovascular and metabolic alterations in mice lacking both b1- and b2-adrenergic receptors** *J Biol Chem*  
Kobilka, B.K., Rohrer, D.K., Chruscinski, A., Schauble, E.H., Bernstein, D.  
1999; 274 (24): 16701
- **Restricting mobility of G(s)alpha relative to the beta(2)-adrenoceptor enhances adenylate cyclase activity by reducing G(s)alpha GTPase activity** *BIOCHEMICAL JOURNAL*  
Wenzel-Seifert, K., LEE, T. W., Seifert, R., Kobilka, B. K.  
1998; 334: 519-524
- **G protein-coupled receptors - II. Mechanism of agonist activation** *JOURNAL OF BIOLOGICAL CHEMISTRY*  
Gether, U., Kobilka, B. K.  
1998; 273 (29): 17979-17982
- **Reconstitution of beta(2)-adrenoceptor-GTP-binding-protein interaction in Sf9 cells - High coupling efficiency in a beta(2)-adrenoceptor-G(s alpha) fusion protein** *EUROPEAN JOURNAL OF BIOCHEMISTRY*

- Seifert, R., LEE, T. W., Lam, V. T., Kobilka, B. K.  
1998; 255 (2): 369-382
- **Neuropeptide Y receptor 1 (NPY-Y1) expression in human heart failure and heart transplantation** *JOURNAL OF THE AUTONOMIC NERVOUS SYSTEM*  
Gullestad, L., Aass, H., Ross, H., Ueland, T., Geiran, O., KJEKSHUS, J., Simonsen, S., Fowler, M., Kobilka, B.  
1998; 70 (1-2): 84-91
  - **Different effects of G $\alpha$  splice variants on beta2-adrenoreceptor-mediated signaling. The Beta2-adrenoreceptor coupled to the long splice variant of G $\alpha$  has properties of a constitutively active receptor.** *journal of biological chemistry*  
Seifert, R., Wenzel-Seifert, K., LEE, T. W., Gether, U., Sanders-Bush, E., Kobilka, B. K.  
1998; 273 (18): 5109-5116
  - **Alterations in dynamic heart rate control in the beta(1)-adrenergic receptor knockout mouse** *AMERICAN JOURNAL OF PHYSIOLOGY-HEART AND CIRCULATORY PHYSIOLOGY*  
Rohrer, D. K., Schauble, E. H., Desai, K. H., Kobilka, B. K., Bernstein, D.  
1998; 274 (4): H1184-H1193
  - **Alterations in dynamic heart rate control in the beta1-adrenergic receptor knockout mouse.** *American journal of physiology. Heart and circulatory physiology*  
Rohrer, D. K., Schauble, E. H., Desai, K. H., Kobilka, B. K., Bernstein, D.  
1998; 274 (4): H1184-H1193
  - **Different effects of G(s) $\alpha$  splice variants on beta(2)-adrenoreceptor-mediated signaling - The beta(2)-adrenoreceptor coupled to the long splice variant of G(s) $\alpha$  has properties of a constitutively active receptor** *JOURNAL OF BIOLOGICAL CHEMISTRY*  
Seifert, R., Wenzel-Seifert, K., LEE, T. W., Gether, U., Sanders-Bush, E., Kobilka, B. K.  
1998; 273 (9): 5109-5116
  - **The developmental and physiological consequences of disrupting genes encoding beta 1 and beta 2 adrenoceptors.** *Advances in pharmacology (San Diego, Calif.)*  
Rohrer, D. K., Bernstein, D., Chruscinski, A., Desai, K. H., Schauble, E., Kobilka, B. K.  
1998; 42: 499-501
  - **G protein-coupled receptors: Functional and mechanistic insights through altered gene expression** *PHYSIOLOGICAL REVIEWS*  
Rohrer, D. K., Kobilka, B. K.  
1998; 78 (1): 35-52
  - **Insights from in vivo modification of adrenergic receptor gene expression** *ANNUAL REVIEW OF PHARMACOLOGY AND TOXICOLOGY*  
Rohrer, D. K., Kobilka, B. K.  
1998; 38: 351-373
  - **Site-specific fluorescence labeling of the beta(2) adrenergic receptor amino terminus** *ANALYTICAL BIOCHEMISTRY*  
PAROLA, A. L., Lin, S. S., Kobilka, B. K.  
1997; 254 (1): 88-95
  - **Agonists induce conformational changes in transmembrane domains III and VI of the beta(2) adrenoceptor** *EMBO JOURNAL*  
Gether, U., Lin, S., Ghanouni, P., Ballesteros, J. A., Weinstein, H., Kobilka, B. K.  
1997; 16 (22): 6737-6747
  - **Echocardiographic evaluation of the roles of beta 1, beta 2 and beta 3 adrenergic receptors in regulating cardiovascular function in knockout mice**  
Desai, K. H., Rohrer, D., Eric, S., Chruscinski, A., Kobilka, B. K., Bernstein, D.  
LIPPINCOTT WILLIAMS & WILKINS.1997: 3554-54
  - **Evaluation of the roles of beta 1, beta 2 and beta 3 adrenergic receptors in regulating cardiac and peripheral vascular function in knockout mice.**  
Rohrer, D., Schauble, E., Chruscinski, A., Desai, K. H., Kobilka, B. K., Bernstein, D.  
LIPPINCOTT WILLIAMS & WILKINS.1997: 285-85
  - **Co-expression of defective luteinizing hormone receptor fragments partially reconstitutes ligand-induced signal generation** *JOURNAL OF BIOLOGICAL CHEMISTRY*  
Osuga, Y., Hayashi, M., Kudo, M., Conti, M., Kobilka, B., Hsueh, A. J.  
1997; 272 (40): 25006-25012

- **Derivation of functional antagonists using N-terminal extracellular domain of gonadotropin and thyrotropin receptors** *MOLECULAR ENDOCRINOLOGY*  
Osuga, Y., Kudo, M., Kaipia, A., Kobilka, B., Hsueh, A. J.  
1997; 11 (11): 1659-1668
- **Intracellular trafficking of angiotensin II and its AT(1) and AT(2) receptors: Evidence for selective sorting of receptor and ligand** *MOLECULAR ENDOCRINOLOGY*  
Hein, L., Meinel, L., Pratt, R. E., Dzau, V. J., Kobilka, B. K.  
1997; 11 (9): 1266-1277
- **A novel interaction between adrenergic receptors and the alpha-subunit of eukaryotic initiation factor 2B** *JOURNAL OF BIOLOGICAL CHEMISTRY*  
Klein, U., Ramirez, M. T., Kobilka, B. K., VONZASTROW, M.  
1997; 272 (31): 19099-19102
- **Adrenergic receptors - From molecular structure to in vivo function** *TRENDS IN CARDIOVASCULAR MEDICINE*  
Hein, L., Kobilka, B. K.  
1997; 7 (5): 137-145
- **Overexpression of angiotensin AT(1) receptor transgene in the mouse myocardium produces a lethal phenotype associated with myocyte hyperplasia and heart block** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Hein, L., Stevens, M. E., Barsh, G. S., Pratt, R. E., Kobilka, B. K., Dzau, V. J.  
1997; 94 (12): 6391-6396
- **Subtype-specific intracellular trafficking of alpha(2)-adrenergic receptors** *MOLECULAR PHARMACOLOGY*  
Daunt, D. A., Hurt, C., Hein, L., Kallio, J., Feng, F., Kobilka, B. K.  
1997; 51 (5): 711-720
- **Cardiovascular indexes in the mouse at rest and with exercise: New tools to study models of cardiac disease** *AMERICAN JOURNAL OF PHYSIOLOGY-HEART AND CIRCULATORY PHYSIOLOGY*  
Desai, K. H., Sato, R., Schauble, E., Barsh, G. S., Kobilka, B. K., Bernstein, D.  
1997; 272 (2): H1053-H1061
- **Structural instability of a constitutively active G protein-coupled receptor - Agonist-independent activation due to conformational flexibility** *JOURNAL OF BIOLOGICAL CHEMISTRY*  
Gether, U., Ballesteros, J. A., Seifert, R., SANDERSBUSH, E., Weinstein, H., Kobilka, B. K.  
1997; 272 (5): 2587-2590
- **Ligand stabilization of the beta(2) adrenergic receptor: Effect of DTT on receptor conformation monitored by circular dichroism and fluorescence spectroscopy** *BIOCHEMISTRY*  
Lin, S. S., Gether, U., Kobilka, B. K.  
1996; 35 (46): 14445-14451
- **The role of beta-1 adrenergic receptors in basal end exercise stimulated heart function: Studies on mice lacking the beta-1 adrenergic receptor gene**  
Rohrer, D. K., Desai, K. H., Schauble, E., Kobilka, B. K., Bernstein, D.  
LIPPINCOTT WILLIAMS & WILKINS.1996: 1674-74
- **Diminished contractile response to isoproterenol in beta-1 adrenergic receptor deficient mice**  
Desai, K. H., Rohrer, D. K., Kobilka, B. K., Bernstein, D.  
LIPPINCOTT WILLIAMS & WILKINS.1996: 1675-75
- **Transmembrane regions V and VI of the human luteinizing hormone receptor are required for constitutive activation by a mutation in the third intracellular loop** *JOURNAL OF BIOLOGICAL CHEMISTRY*  
Kudo, M., Osuga, Y., Kobilka, B. K., Hsueh, A. J.  
1996; 271 (37): 22470-22478
- **Cardiovascular regulation in mice lacking alpha(2)-adrenergic receptor subtypes b and c** *SCIENCE*  
Link, R. E., Desai, K., Hein, L., Stevens, M. E., Chruscinski, A., Bernstein, D., Barsh, G. S., Kobilka, B. K.  
1996; 273 (5276): 803-805
- **Targeted disruption of the mouse beta 1-adrenergic receptor gene: Developmental and cardiovascular effects** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Rohrer, D. K., Desai, K. H., Jasper, J. R., Stevens, M. E., Regula, D. P., Barsh, G. S., Bernstein, D., Kobilka, B. K.

1996; 93 (14): 7375-7380

- **Arrangement of transmembrane domains in adrenergic receptors - Similarity to bacteriorhodopsin** *JOURNAL OF BIOLOGICAL CHEMISTRY*  
Mizobe, T., Maze, M., Lam, V., Suryanarayana, S., Kobilka, B. K.  
1996; 271 (5): 2387-2389
- **Adrenergic receptor signal transduction** *Symposium on Structure and Function of 7TM Receptors*  
Kobilka, B. K., Gether, U.  
MUNKSGAARD.1996: 171-179
- **FLUORESCENT LABELING OF PURIFIED BETA(2) ADRENERGIC-RECEPTOR - EVIDENCE FOR LIGAND-SPECIFIC CONFORMATIONAL-CHANGES** *JOURNAL OF BIOLOGICAL CHEMISTRY*  
Gether, U., Lin, S. S., Kobilka, B. K.  
1995; 270 (47): 28268-28275
- **BEHAVIORAL AND CARDIOVASCULAR EFFECTS OF DISRUPTING THE ANGIOTENSIN-II TYPE-2 RECEPTOR GENE IN MICE** *NATURE*  
Hein, L., Barsh, G. S., Pratt, R. E., Dzau, V. J., Kobilka, B. K.  
1995; 377 (6551): 744-747
- **AMINO AND CARBOXYL-TERMINAL MODIFICATIONS TO FACILITATE THE PRODUCTION AND PURIFICATION OF A G-PROTEIN-COUPLED RECEPTOR** *ANALYTICAL BIOCHEMISTRY*  
Kobilka, B. K.  
1995; 231 (1): 269-271
- **TARGETED INACTIVATION OF THE GENE ENCODING THE MOUSE ALPHA(2C)-ADRENOCEPTOR HOMOLOG** *MOLECULAR PHARMACOLOGY*  
Link, R. E., Stevens, M. S., KULATUNGA, M., Scheinin, M., Barsh, G. S., Kobilka, B. K.  
1995; 48 (1): 48-55
- **Adrenergic receptor signal transduction and regulation.** *Neuropharmacology*  
Hein, L., Kobilka, B. K.  
1995; 34 (4): 357-366
- **NEUROTRANSMITTER RECEPTORS .4. ADRENERGIC-RECEPTOR SIGNAL-TRANSDUCTION AND REGULATION** *NEUROPHARMACOLOGY*  
Hein, L., Kobilka, B. K.  
1995; 34 (4): 357-366
- **CARDIORESPIRATORY PERFORMANCE OF UNTRAINED MICE**  
Sato, R., Desai, K., Kobilka, B., Barsh, G., Bernstein, D.  
NATURE PUBLISHING GROUP.1995: A33-A33
- **THE CARDIOVASCULAR ROLE OF ALPHA-2B ADRENERGIC-RECEPTORS DETERMINED BY TARGETED GENE DISRUPTION**  
Desai, K., Link, R., Barsh, G., Kobilka, B., Bernstein, D.  
NATURE PUBLISHING GROUP.1995: A25-A25
- **GENETIC MODELS OF HUMAN VASCULAR-DISEASE** *CIRCULATION*  
Dzau, V. J., Gibbons, G. H., Kobilka, B. K., Lawn, R. M., Pratt, R. E.  
1995; 91 (2): 521-531
- **INTRACELLULAR TARGETING AND TRAFFICKING OF THROMBIN RECEPTORS - A NOVEL MECHANISM FOR RESENSITIZATION OF A G-PROTEIN-COUPLED RECEPTOR** *JOURNAL OF BIOLOGICAL CHEMISTRY*  
Hein, L., Ishii, K., Coughlin, S. R., Kobilka, B. K.  
1994; 269 (44): 27719-27726
- **MURINE CARDIORESPIRATORY PHYSIOLOGY - IN-VIVO STUDY OF GENETICALLY ALTERED MODELS**  
Desai, K., Sato, R., Kobilka, B., Barsh, G., Bernstein, D.  
LIPPINCOTT WILLIAMS & WILKINS.1994: 148-48
- **ANTAGONIST-DEPENDENT AND ANTAGONIST-INDEPENDENT STEPS IN THE MECHANISM OF ADRENERGIC-RECEPTOR INTERNALIZATION** *JOURNAL OF BIOLOGICAL CHEMISTRY*  
VONZASTROW, M., Kobilka, B. K.

1994; 269 (28): 18448-18452

- **PROBING THE PHYSIOLOGICAL SIGNIFICANCE OF ALPHA(2)-ADRENOCEPTOR SUBTYPE DIVERSITY IN GENETICALLY-ENGINEERED MICE**  
Link, R. E., Stevens, M. E., Desai, K., Scheinin, M., Bernstein, D., Barsh, G. S., Kobilka, B. K.  
SLACK INC.1994: A331-A331
- **RESTING AND STRESSED CARDIORESPIRATORY PARAMETERS IN THE MOUSE - NEW TOOLS FOR THE ASSESSMENT OF TRANSGENIC MODELS**  
Desai, K., Kobilka, B., Barsh, G., Bernstein, D.  
NATURE PUBLISHING GROUP.1994: A33-A33
- **THE PEPTIDE PRODUCT OF A 5' LEADER CISTRON IN THE BETA(2) ADRENERGIC-RECEPTOR MESSENGER-RNA INHIBITS RECEPTOR SYNTHESIS** *JOURNAL OF BIOLOGICAL CHEMISTRY*  
PAROLA, A. L., Kobilka, B. K.  
1994; 269 (6): 4497-4505
- **LINKAGE MAPPING OF ALPHA-2-ADRENERGIC RECEPTOR GENES TO MOUSE CHROMOSOME-2 AND CHROMOSOME-5** *MAMMALIAN GENOME*  
Link, R. E., Kobilka, B. K., Barsh, G. S.  
1993; 4 (11): 650-655
- **PRIMARY STRUCTURE OF THE MOUSE BETA(1)-ADRENERGIC RECEPTOR GENE** *BIOCHIMICA ET BIOPHYSICA ACTA*  
Jasper, J. R., Link, R. E., Chruscinski, A. J., Kobilka, B. K., Bernstein, D.  
1993; 1178 (3): 307-309
- **AMINO-ACID SUBSTITUTIONS AT POSITION 312 IN THE 7TH HYDROPHOBIC SEGMENT OF THE BETA(2)-ADRENERGIC RECEPTOR MODIFY LIGAND-BINDING SPECIFICITY** *MOLECULAR PHARMACOLOGY*  
Suryanarayana, S., Kobilka, B. K.  
1993; 44 (1): 111-114
- **SUBTYPE-SPECIFIC DIFFERENCES IN THE INTRACELLULAR SORTING OF G-PROTEIN-COUPLED RECEPTORS** *JOURNAL OF BIOLOGICAL CHEMISTRY*  
VONZASTROW, M., Link, R., Daunt, D., Barsh, G., Kobilka, B.  
1993; 268 (2): 763-766
- **ENHANCEMENT OF MEMBRANE INSERTION AND FUNCTION IN A TYPE IIIB MEMBRANE-PROTEIN FOLLOWING INTRODUCTION OF A CLEAVABLE SIGNAL PEPTIDE** *JOURNAL OF BIOLOGICAL CHEMISTRY*  
Guan, X. M., Kobilka, T. S., Kobilka, B. K.  
1992; 267 (31): 21995-21998
- **IDENTIFICATION OF INTRAMOLECULAR INTERACTIONS IN ADRENERGIC-RECEPTORS** *JOURNAL OF BIOLOGICAL CHEMISTRY*  
Suryanarayana, S., VONZASTROW, M., Kobilka, B. K.  
1992; 267 (31): 21991-21994
- **CLONING OF 2 MOUSE GENES ENCODING ALPHA-2-ADRENERGIC RECEPTOR SUBTYPES AND IDENTIFICATION OF A SINGLE AMINO-ACID IN THE MOUSE ALPHA-2-C10 HOMOLOG RESPONSIBLE FOR AN INTERSPECIES VARIATION IN ANTAGONIST BINDING** *MOLECULAR PHARMACOLOGY*  
Link, R., Daunt, D., Barsh, G., Chruscinski, A., Kobilka, B.  
1992; 42 (1): 16-27
- **IDENTIFICATION OF A SINGLE AMINO-ACID RESIDUE RESPONSIBLE FOR THE BINDING OF A CLASS OF BETA-ADRENERGIC-RECEPTOR ANTAGONISTS TO 5-HYDROXYTRYPTAMINE1A RECEPTORS** *MOLECULAR PHARMACOLOGY*  
Guan, X. M., Peroutka, S. J., Kobilka, B. K.  
1992; 41 (4): 695-698
- **LIGAND-REGULATED INTERNALIZATION AND RECYCLING OF HUMAN BETA-2-ADRENERGIC RECEPTORS BETWEEN THE PLASMA-MEMBRANE AND ENDOSOMES CONTAINING TRANSFERRIN RECEPTORS** *JOURNAL OF BIOLOGICAL CHEMISTRY*  
VONZASTROW, M., Kobilka, B. K.  
1992; 267 (5): 3530-3538



- **ADRENERGIC-RECEPTORS AS MODELS FOR G PROTEIN-COUPLED RECEPTORS** *ANNUAL REVIEW OF NEUROSCIENCE*  
Kobilka, B.  
1992; 15: 87-114
- **A POINT MUTATION IN THE 7TH HYDROPHOBIC DOMAIN OF THE ALPHA-2 ADRENERGIC-RECEPTOR INCREASES ITS AFFINITY FOR A FAMILY OF BETA-RECEPTOR-ANTAGONISTS** *JOURNAL OF BIOLOGICAL CHEMISTRY*  
Suryanarayana, S., Daunt, D. A., VONZASTROW, M., Kobilka, B. K.  
1991; 266 (23): 15488-15492
- **MOLECULAR AND CELLULAR BIOLOGY OF ADRENERGIC-RECEPTORS** *TRENDS IN CARDIOVASCULAR MEDICINE*  
Kobilka, B.  
1991; 1 (5): 189-194
- **A SINGLE POINT MUTATION IN THE 7TH HYDROPHOBIC DOMAIN OF THE ALPHA-2-ADRENERGIC RECEPTOR CHANGES ANTAGONIST BINDING-SPECIFICITY TO THAT OF A BETA-RECEPTOR** *104TH SESSION OF THE ASSOC OF AMERICAN PHYSICIANS*  
Suryanarayana, S., Daunt, D. A., VONZASTROW, M., Kobilka, B. K.  
ASSOC AMER PHYSICIANS.1991: 62-68
- **THE ROLE OF CYTOSOLIC AND MEMBRANE FACTORS IN PROCESSING OF THE HUMAN BETA-2 ADRENERGIC-RECEPTOR FOLLOWING TRANSLOCATION AND GLYCOSYLATION IN A CELL-FREE SYSTEM** *JOURNAL OF BIOLOGICAL CHEMISTRY*  
Kobilka, B. K.  
1990; 265 (13): 7610-7618
- **ANALYSIS OF LIGAND-BINDING SPECIFICITY OF RECEPTOR CHIMERAS - RESPONSE** *SCIENCE*  
Kobilka, B. K., Kobilka, T. S., DANIELS, K. W., Regan, J. W., CARAN, M. G., Lefkowitz, R. J.  
1989; 243 (4888): 237-237
- **MOLECULAR-CLONING AND EXPRESSION OF THE CDNA FOR THE HAMSTER ALPHA-1-ADRENERGIC RECEPTOR** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Cotecchia, S., Schwinn, D. A., RANDALL, R. R., Lefkowitz, R. J., Caron, M. G., Kobilka, B. K.  
1988; 85 (19): 7159-7163
- **THE GENOMIC CLONE G-21 WHICH RESEMBLES A BETA-ADRENERGIC-RECEPTOR SEQUENCE ENCODES THE 5-HT1A RECEPTOR** *NATURE*  
FARGIN, A., Raymond, J. R., Lohse, M. J., Kobilka, B. K., Caron, M. G., Lefkowitz, R. J.  
1988; 335 (6188): 358-360
- **CLONING AND EXPRESSION OF A HUMAN-KIDNEY CDNA FOR AN ALPHA-2-ADRENERGIC RECEPTOR SUBTYPE** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Regan, J. W., Kobilka, T. S., YANGFENG, T. L., Caron, M. G., Lefkowitz, R. J., Kobilka, B. K.  
1988; 85 (17): 6301-6305
- **HUMAN BETA-1-ADRENERGIC AND BETA-2-ADRENERGIC RECEPTORS - STRUCTURALLY AND FUNCTIONALLY RELATED RECEPTORS DERIVED FROM DISTINCT GENES** *TRENDS IN NEUROSCIENCES*  
Frielle, T., Kobilka, B., Lefkowitz, R. J., Caron, M. G.  
1988; 11 (7): 321-324
- **CHIMERIC ALPHA-2-ADRENERGIC, BETA-2-ADRENERGIC RECEPTORS - DELINEATION OF DOMAINS INVOLVED IN EFFECTOR COUPLING AND LIGAND-BINDING SPECIFICITY** *SCIENCE*  
Kobilka, B. K., Kobilka, T. S., Daniel, K., Regan, J. W., Caron, M. G., Lefkowitz, R. J.  
1988; 240 (4857): 1310-1316
- **FUNCTIONAL-ACTIVITY AND REGULATION OF HUMAN BETA-2-ADRENERGIC RECEPTORS EXPRESSED IN XENOPUS OOCYTES** *JOURNAL OF BIOLOGICAL CHEMISTRY*  
Kobilka, B. K., MacGregor, C., Daniel, K., Kobilka, T. S., Caron, M. G., Lefkowitz, R. J.  
1987; 262 (32): 15796-15802
- **CLONING OF THE CDNA FOR THE HUMAN BETA-1-ADRENERGIC RECEPTOR** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Frielle, T., Collins, S., Daniel, K. W., Caron, M. G., Lefkowitz, R. J., Kobilka, B. K.  
1987; 84 (22): 7920-7924

- **CLONING, SEQUENCING, AND EXPRESSION OF THE GENE CODING FOR THE HUMAN-PLATELET ALPHA-2-ADRENERGIC RECEPTOR** *SCIENCE*  
Kobilka, B. K., MATSUI, H., Kobilka, T. S., YANGFENG, T. L., FRANCKE, U., Caron, M. G., Lefkowitz, R. J., Regan, J. W.  
1987; 238 (4827): 650-656
- **AN INTRONLESS GENE ENCODING A POTENTIAL MEMBER OF THE FAMILY OF RECEPTORS COUPLED TO GUANINE-NUCLEOTIDE REGULATORY PROTEINS** *NATURE*  
Kobilka, B. K., Frielle, T., Collins, S., YANGFENG, T., Kobilka, T. S., FRANCKE, U., Lefkowitz, R. J., Caron, M. G.  
1987; 329 (6134): 75-79
- **DELINEATION OF THE INTRONLESS NATURE OF THE GENES FOR THE HUMAN AND HAMSTER BETA-2-ADRENERGIC RECEPTOR AND THEIR PUTATIVE PROMOTER REGIONS** *JOURNAL OF BIOLOGICAL CHEMISTRY*  
Kobilka, B. K., Frielle, T., Dohlman, H. G., BOLANOWSKI, M. A., Dixon, R. A., Keller, P., Caron, M. G., Lefkowitz, R. J.  
1987; 262 (15): 7321-7327
- **CDNA FOR THE HUMAN BETA-2-ADRENERGIC RECEPTOR - A PROTEIN WITH MULTIPLE MEMBRANE-SPANNING DOMAINS AND ENCODED BY A GENE WHOSE CHROMOSOMAL LOCATION IS SHARED WITH THAT OF THE RECEPTOR FOR PLATELET-DERIVED GROWTH-FACTOR** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Kobilka, B. K., Dixon, R. A., Frielle, T., Dohlman, H. G., BOLANOWSKI, M. A., SIGAL, I. S., YANGFENG, T. L., FRANCKE, U., Caron, M. G., Lefkowitz, R. J.  
1987; 84 (1): 46-50
- **BETA-ADRENERGIC RECEPTORS AND RHODOPSIN - SHEDDING NEW LIGHT ON AN OLD SUBJECT** *TRENDS IN PHARMACOLOGICAL SCIENCES*  
Lefkowitz, R. J., Benovic, J. L., Kobilka, B., Caron, M. G.  
1986; 7 (11): 444-448
- **CLONING OF THE GENE AND CDNA FOR MAMMALIAN BETA-ADRENERGIC-RECEPTOR AND HOMOLOGY WITH RHODOPSIN** *NATURE*  
Dixon, R. A., Kobilka, B. K., STRADER, D. J., Benovic, J. L., Dohlman, H. G., Frielle, T., BOLANOWSKI, M. A., Bennett, C. D., Rands, E., Diehl, R. E., Mumford, R. A., Slater, E. E., SIGAL, et al  
1986; 321 (6065): 75-79