Jan Steyaert, PhD
Full Professor & Francqui Research Professor, Faculty of Sciences and Bioengineering Sciences, VUB
Director, Department of Structural Biology Brussels, VUB
Acting Director, Structural Biology Research Center, VIB
Founder & CSO, ConFotherapeutics NV, www.ConFotherapeutics.com

Expertise

Last years, the Steyaert lab pioneered the use of nanobodies for chaperone-assisted X-ray crystallography (www.steyaertlab.eu), aiming at the highest hanging fruits of structural biology including membrane proteins, amyloidogenic proteins, and now also (transient) multiprotein complexes. The elucidation of the first GPCR structures in the agonist-bound active state demonstrate the power of Nanobodies to stabilize G protein coupled receptor conformational states including transmembrane signalling complexes. Recent work focusses on exploiting the conformational complexity of therapeutic targets for Nanobody-enabled drug discovery.
Appart of his research activities, Jan Steyaert is also a serial entrepreneur. He is a co-founder of Ablynx (now a Sanofi company) and Biotalys and more recently he founded ConfoTherapeutics, three succesful biotech spin-offs that valorize a unique class of single domain antibodies (Nanobodies) derived from camelids.

Research output

Development, characterization and engineering of anti-LexA nanobodies as suppressors of the bacterial SOS response
Vascon, F., Maso, L., Chinellato, M., Bouchiba, Y., Campagnaro, E., De Felice, S., Goormaghtigh, F., Bellio, P., Cioci, G., Angelini, A., Celenza, G., Barbe, S., Van Melderen, L., Steyaert, J., Pardon, E., Tondi, D. & Cendron, L., Jul 2022, In: FEBS Open Bio. 12, p. 24-24

Structural basis of sodium-dependent bile salt uptake into the liver
Goutam, K., Ielasi, F. S., Pardon, E., Steyaert, J. & Reyes, N., 30 Jun 2022, In: Nature. 606, 7916, p. 1015-1020 6 p.

Stabilization of Meta-I Rhodopsin Conformation by a Nanobody
Salom, D., Wu, A., Sander, C. L., Pardon, E., Steyaert, J., Kiser, P. D. & Palczewski, K., 1 May 2022, In: The FASEB Journal. 36, S1

Snapshots of actin and tubulin folding inside the TRiC chaperonin
Kelly, J. J., Tranter, D., Pardon, E., Chi, G., Kramer, H., Happonen, L., Knee, K. M., Janz, J. M., Steyaert, J., Bulawa, C., Paavilainen, V. O., Huiskonen, J. T. & Yue, W. W., May 2022, In: Nature Structural & Molecular Biology. 29, 5, p. 420-429 10 p.

Conformational transitions and ligand-binding to a muscle-type nicotinic acetylcholine receptor
Zarkadas, E., Pebay-Peyroula, E., Thompson, M. J., Schoehn, G., Uchański, T., Steyaert, J., Chipot, C., Dehez, F., Baenziger, J. E. & Nury, H., 20 Apr 2022, In: Neuron. 110, 8, p. 1358-1370.e5 13 p.

Structure, substrate recognition and initiation of hyaluronan synthase
Maloney, F. P., Kuklewicz, J., Corey, R. A., Bi, Y., Ho, R., Mateusiak, L., Pardon, E., Steyaert, J., Stansfeld, P. J. & Zimmer, J., 7 Apr 2022, In: Nature. 604, 7904, p. 195-201 7 p.

Nanobodies as allosteric modulators of Parkinson's disease-associated LRRK2
Singh, R. K., Soliman, A., Guaitoli, G., Störmer, E., von Zweydorf, F., Dal Maso, T., Oun, A., Van Rillaer, L., Schmidt, S. H., Chatterjee, D., David, J. A., Pardon, E., Schwartz, T. U., Knapp, S., Kennedy, E. J., Steyaert, J., Herberg, F. W., Kortholt, A., Gloeckner, C. J. & Versées, W., 1 Mar 2022, In: Proceedings of the National Academy of Sciences of the United States of America. 119, 9, p. 1-12 12 p., e2112712119.

Mapping inhibitory sites on the RNA polymerase of the 1918 pandemic influenza virus using nanobodies
Keown, J. R., Zhu, Z., Carrique, L., Fan, H., Walker, A. P., Serna Martin, I., Pardon, E., Steyaert, J., Fodor, E. & Grimes, J. M., 11 Jan 2022, In: Nature Communications. 13, 1, 11 p., 251.

Cryo-EM Structure of an Atypical Proton-Coupled Peptide Transporter: Di- and Tripeptide Permease C
Killer, M., Finocchio, G., Mertens, H. D. T., Svergun, D. I., Pardon, E., Steyaert, J. & Löw, C., 2022, In: Frontiers in molecular biosciences. 9, p. 1-15 15 p., 917725.

Structure, mechanism, and inhibition of Hedgehog acyltransferase
Coupland, C. E., Andrei, S. A., Ansell, T. B., Carrique, L., Kumar, P., Sefer, L., Schwab, R. A., Byrne, E. F. X., Pardon, E., Steyaert, J., Magee, A. I., Lanyon-Hogg, T., Sansom, M. S. P., Tate, E. W. & Siebold, C., 9 Dec 2021, In: Molecular Cell. 81, 24, p. 5025-5038 14 p., 5038.e10.

HDX-MS-optimized approach to characterize nanobodies as tools for biochemical and structural studies of class IB phosphoinositide 3-kinases
Rathinaswamy, M. K., Fleming, K. D., Dalwadi, U., Pardon, E., Harris, N. J., Yip, C. K., Steyaert, J. & Burke, J. E., 2 Dec 2021, In: Structure. 29, 12, p. 1371-1381.e6 28 p.

Development of a universal nanobody-binding Fab module for fiducial-assisted cryo-EM studies of membrane proteins
Bloch, J. S., Mukherjee, S., Kowal, J., Filippova, E. V., Niederer, M., Pardon, E., Steyaert, J., Kossiakoff, A. A. & Locher, K. P., 23 Nov 2021, In: Proceedings of the National Academy of Sciences of the United States of America. 118, 47, e2115435118.

Nanobody-aided crystallization of the transcription regulator PaaR2 from Escherichia coli O157:H7
De Bruyn, P., Prolic Kalinsek, M., Vandervelde, A., Malfait, M., Sterckx, Y., Sobott, F., Hadzi, S., Pardon, E., Steyaert, J. & Loris, R., 1 Oct 2021, In: Acta Crystallographica Section F - Structural Biology Communications. 77, 10, p. 374-384 11 p., 11.

Structure of autoinhibited Akt1 reveals mechanism of PIP3-mediated activation
Truebestein, L., Hornegger, H., Anrather, D., Hartl, M., Fleming, K. D., Stariha, J. T. B., Pardon, E., Steyaert, J., Burke, J. E. & Leonard, T. A., 17 Aug 2021, In: Proceedings of the National Academy of Sciences of the United States of America. 118, 33, 11 p., e2101496118.

A topological switch in CFTR modulates channel activity and sensitivity to unfolding
Scholl, D., Sigoillot, M., Overtus, M., Martinez, R. C., Martens, C., Wang, Y., Pardon, E., Laeremans, T., Garcia-Pino, A., Steyaert, J., Sheppard, D. N., Hendrix, J. & Govaerts, C., 2 Aug 2021, In: Nature Chemical Biology. 17, 9, p. 989-997 9 p.

Nano-scale resolution of native retinal rod disk membranes reveals differences in lipid composition
Sander, C. L., Sears, A. E., Pinto, A. F. M., Choi, E. H., Kahremany, S., Gao, F., Salom, D., Jin, H., Pardon, E., Suh, S., Dong, Z., Steyaert, J., Saghatelian, A., Skowronska-Krawczyk, D., Kiser, P. D. & Palczewski, K., 2 Aug 2021, In: The Journal of Cell Biology. 220, 8, e20210106.

Structure of the phosphoinositide 3-kinase (PI3K) p110γ-p101 complex reveals molecular mechanism of GPCR activation
Rathinaswamy, M. K., Dalwadi, U., Fleming, K. D., Adams, C., Stariha, J. T. B., Pardon, E., Baek, M., Vadas, O., DiMaio, F., Steyaert, J., Hansen, S. D., Yip, C. K. & Burke, J. E., Aug 2021, In: Science Advances. 7, 35, eabj4282.

New insights into molecular mechanism of signaling by endocrine FGFs
Kuzina, E., Ung, P., Mohanty, J., Tome, F., Choi, J., Pardon, E., Steyaert, J., Lax, I., Schlessinger, A. S., Schlessinger, J. & Lee, S., Jul 2021, In: FEBS Open Bio. 11, p. 217-217

Nanobody exchange chromatography
Steyaert, J., Pardon, E., Wohlkönig, A., Zögg, T., Kalichuk, V., De Keyser, P. & Fischer, B., 24 Jun 2021, Patent No. WO2021123360A1, 18 Dec 2020, Priority date 20 Dec 2019, Priority No. EP19219043

Structure of Nanobody Nb23
Percipalle, M., Hunashal, Y., Steyaert, J., Fogolari, F. & Esposito, G., 11 Jun 2021, In: Molecules. 26, 12, 21 p., 3567.

Positive allosteric modulators of the calcium-sensing receptor
Steyaert, J., Pardon, E., Wohlkönig, A., Zögg, T., Mos, I., BRÄUNER-OSBORNE, H. & MOSOLFF MATHIESEN, J., 3 Jun 2021, Patent No. WO2021105438A1, 27 Nov 2020, Priority date 27 Nov 2019, Priority No. EP19211709

Dissecting lipid contents in the distinct regions of native retinal rod disk membranes
Sander, C., Sears, A., Pinto, A., Choi, E., Kahremany, S., Pry, H., Pardon, E., Suh, S., Dong, Z., Steyaert, J., Saghatelian, A., Skowronska-Krawczyk, D., Kiser, P. & Palczewski, K., Jun 2021, In: Investigative Ophthalmology & Visual Science. 62 , 8

Nanodisc-specific antigen-binding chimeric proteins
Steyaert, J., Uchanski, T., Aricescu, A. R. & Masiulis, S., 29 Apr 2021, Patent No. WO2021078786A1, 21 Oct 2020, Priority date 21 Oct 2019, Priority No. EP19204412

In Vivo and In Vitro Characterizations of Nanobodies Raised Against the Melibiose Permease melB of Salmonella Typhimurium
Katsube, S., Willibal, K., Tikhonova, E. B., Parameswaran, H., Vemulapally, S., Pardon, E., Kaback, H. R., Steyaert, J. & Guan, L., 12 Feb 2021, In: Biophysical journal. 120, 3, p. 74A-74A

Constructing and purifying megabodies starting from individual nanobody sequences
Uchański, T., Fischer, B., Kalichuk, V., Wohlkönig, A., Zögg, T., Pardon, E. & Steyaert, J., 7 Jan 2021, 11 p.

Megabodies expand the nanobody toolkit for protein structure determination by single-particle cryo-EM
Uchański, T., Masiulis, S., Fischer, B., Kalichuk, V., López-Sánchez, U., Zarkadas, E., Weckener, M., Sente, A., Ward, P., Wohlkönig, A., Zögg, T., Remaut, H., Naismith, J. H., Nury, H., Vranken, W., Aricescu, A. R., Pardon, E. & Steyaert, J., Jan 2021, In: Nature Methods. 18, 1, p. 60-68 9 p.

Fusion protein with a toxin and scaffold protein
Steyaert, J., Pardon, E. & Vranken, W., 2021, Patent No. EP3898658

Fusion proteins comprising a cytokine and scaffold protein
Steyaert, J., Pardon, E., Wohlkönig, A., Kalichuk, V., Vranken, W., Uchanski, T., Chevigné, A. & Szpakowska, M., 2021, Patent No. EP3898664

Protein binding domains stabilizing functional conformational states of gpcrs and uses thereof
Steyaert, J., Pardon, E., Rasmussen, S. G. F., Fung, J. J., Kobilka, B. K. & Laeremans, T., 2021, Patent No. EP3557255

Protein binding domains stabilizing functional conformational states of gpcrs and uses thereof
Steyaert, J., Pardon, E., Rasmussen, S. G. F., Fung, J. J., Kobilka, B. K. & Laeremans, T., 2021, Patent No. US11162954

Protein binding domains stabilizing functional conformational states of gpcrs and uses thereof
Steyaert, J., Pardon, E., Rasmussen, S. G. F., Fung, J. J., Kobilka, B. K. & Laeremans, T., 2021, Patent No. EP3557254

Protein binding domains stabilizing functional conformational states of gpcrs and uses thereof
Steyaert, J., Pardon, E., Rasmussen, S. G. F., Fung, J. J., Kobilka, B. K. & Laeremans, T., 2021, Patent No. US11162953

A structure of substrate-bound Synaptojanin1 provides new insights in its mechanism and the effect of disease mutations
Paesmans, J., Martin, E., Deckers, B., Berghmans, M., Sethi, R., Loeys, Y., Pardon, E., Steyaert, J., Verstreken, P., Galicia, C. & Versées, W., 22 Dec 2020, In: eLife. 9, p. 1-27 27 p., e64922.

In vitro reconstitution of dynamically interacting integral membrane subunits of energy-coupling factor transporters
Setyawati, I., Stanek, W. K., Majsnerowska, M., Swier, L. J. Y. M., Pardon, E., Steyaert, J., Guskov, A. & Slotboom, D. J., 22 Dec 2020, In: eLife. 9, p. 1-21 21 p., e64389.

Discussions on the quality of antibodies are no reason to ban animal immunization
Custers, R. & Steyaert, J., 3 Dec 2020, In: EMBO Reports. 21, 12, e51761.

Modular transient nanoclustering of activated β2-adrenergic receptors revealed by single-molecule tracking of conformation-specific nanobodies
Gormal, R. S., Padmanabhan, P., Kasula, R., Bademosi, A. T., Coakley, S., Giacomotto, J., Blum, A., Joensuu, M., Wallis, T. P., Lo, H. P., Budnar, S., Rae, J., Ferguson, C., Bastiani, M., Thomas, W. G., Pardon, E., Steyaert, J., Yap, A. S., Goodhill, G. J., Hilliard, M. A. & 2 others, Parton, R. G. & Meunier, F. A., 1 Dec 2020, In: Proceedings of the National Academy of Sciences of the United States of America. 117, 48, p. 30476-30487 12 p.

Nanobody-enabled monitoring of kappa opioid receptor states
Che, T., English, J., Krumm, B. E., Kim, K., Pardon, E., Olsen, R. H. J., Wang, S., Zhang, S., Diberto, J. F., Sciaky, N., Carroll, F. I., Steyaert, J., Wacker, D. & Roth, B. L., 1 Dec 2020, In: Nature Communications. 11, 1, p. 1145 12 p., 1145.

The G-Protein Rab5A Activates VPS34 Complex II, a Class III PI3K, by a Dual Regulatory Mechanism
Buckles, T. C., Ohashi, Y., Tremel, S., McLaughlin, S. H., Pardon, E., Steyaert, J., Gordon, M. T., Williams, R. L. & Falke, J. J., 1 Dec 2020, In: Biophysical Journal. 119, 11, p. 2205-2218 13 p.

Diversity in kinetics correlated with structure in nano body-stabilized LacY
Kumar, H., Finer-Moore, J., Smirnova, I., Kasho, V., Pardon, E., Steyaert, J., Kaback, H. R. & Stroud, R. M., May 2020, In: PLOS ONE. 15, 5, 14 p., e0232846.

Methods to select agents that stabilize protein complexes
Steyaert, J., Wohlkönig, A. & Triest, S., 1 Apr 2020, Patent No. EP3194976B, 17 Jul 2015, Priority date 22 Jul 2014, Priority No. EP14178012.2

Allosteric modulation of the GTPase activity of a bacterial LRRK2 homolog by conformation-specific Nanobodies
Leemans, M., Galicia, C., Deyaert, E., Daems, E., Krause, L., Paesmans, J., Pardon, E., Steyaert, J., Kortholt, A., Sobott, F., Klostermeier, D. & Versees, W., Apr 2020, In: Biochemical Journal. 477, 7, p. 1203-1218 16 p.

Structure of the G protein chaperone and guanine nucleotide exchange factor Ric-8A bound to Gαi1
McClelland, L. J., Zhang, K., Mou, T-C., Johnston, J., Yates-Hansen, C., Li, S., Thomas, C. J., Doukov, T. I., Triest, S., Wohlkonig, A., Tall, G. G., Steyaert, J., Chiu, W. & Sprang, S. R., 26 Feb 2020, In: Nature Communications. 11, 1, 1077.

A Lipid Recognition Site at a Transmembrane Helix Kink Shapes the Agonist Response of a Pentameric Ligand-gated Ion Channel
Baenziger, J. E., Henault, C. M., Govaerts, C., Estrada, A., Lynch, J., Bertrand, D., Pardons, E., Evans, G., Woods, K. N., Elberson, B. W., Cuello, L. G., Brannigan, G. H., Nury, H., Steyaert, J. & Ulens, C., 7 Feb 2020, In: Biophysical Journal. 118, 3, p. 191A-191A

Ric8A-G alpha, a Complex Structure of a Guanine Nucleotide Exchange Factor
McClelland, L. J., Zhang, K., Mou, T-C., Johnston, J., Yates-Hansen, C., Steyaert, J., Chiu, W. & Sprang, S., 7 Feb 2020, In: Biophysical Journal. 118, 3, p. 335A-335A

Editorial overview: Engineered proteins as tools in structural biology
Steyaert, J. & Yeates, T. O., Feb 2020, In: Current Opinion in Structural Biology. 60, p. V-VI

Nanobodies to study protein conformational states
Uchański, T., Pardon, E. & Steyaert, J., Feb 2020, In: Current Opinion in Structural Biology. 60, p. 117-123 7 p.

Modulation of the Erwinia ligand-gated ion channel (ELIC) and the 5-HT3 receptor via a common vestibule site
Brams, M., Govaerts, C., Kambara, K., Price, K. L., Spurny, R., Gharpure, A., Pardon, E., Evans, G. L., Bertrand, D., Lummis, S. C., Hibbs, R. E., Steyaert, J. & Ulens, C., 28 Jan 2020, In: eLife. 9, e51511.

Binding domains directed against GPCR:G protein complexes and uses derived thereof
Steyaert, J., Pardon, E., Laeremans, T., Kobilka, B. K., Rasmussen, S. G. F., Granier, S. & Sunahara, R. K., 2020, Patent No. US10626154

Cystic fibrosis transmembrane conductance regulator stabilizing agents
Steyaert, J., Pardon, E., Laeremans, T., Govaerts, C., Grodecka, M., Sigoillot, M., Overtus, M., CARLON, M. S. & ENSINCK, M., 2020, Patent No. WO2020221888

Fusion protein with a toxin and scaffold protein
Steyaert, J., Pardon, E. & Vranken, W., 2020, Patent No. WO2020127993

Fusion proteins comprising a cytokine and scaffold protein
Steyaert, J., Pardon, E., Wohlkönig, A., Kalichuk, V., Vranken, W., Uchanski, T., Chevigné, A. & Szpakowska, M., 2020, Patent No. WO2020127983

Methods to select for agents that stabilize protein complexes
Steyaert, J., Wohlkönig, A. & Triest, S., 2020, Patent No. US10641779

Novel antigen-binding chimeric proteins and methods and uses thereof
Steyaert, J., Pardon, E., Uchanski, T. & Vranken, W., 2020, Patent No. EP3704160

Structural evidence for the critical role of the prion protein hydrophobic region in forming an infectious prion
Abskharon, R., Wang, F., Wohlkonig, A., Ruan, J., Soror, S., Giachin, G., Pardon, E., Zou, W., Legname, G., Ma, J. & Steyaert, J., 9 Dec 2019, In: PLoS Pathogens. 15, 12, p. e1008139 e1008139.

Structure of an endosomal signaling GPCR-G protein-beta-arrestin megacomplex
Steyaert, J., 18 Nov 2019, In: Nature Structural and Molecular Biology. 26, 12, p. 1123-1131 9 p.

Protein binding domains stabilizing functional conformational states of gpcrs and uses thereof
Steyaert, J., Pardon, E., Rasmussen, S. G. F., Fung, J. J., Kobilka, B. K. & Laeremans, T., 13 Nov 2019, IPC No. C07K14/705, G01N33/543, G01N33/566, G01N33/68, Patent No. EP2593792B, 18 Jul 2011, Priority date 16 Jul 2010, Priority No. US61/399781

Structure of S-layer protein Sap reveals a mechanism for therapeutic intervention in anthrax
Fioravanti, A., Van Hauwermeiren, F., Van der Verren, S. E., Jonckheere, W., Goncalves, A., Pardon, E., Steyaert, J., De Greve, H., Lamkanfi, M. & Remaut, H., Nov 2019, In: Nature Microbiology. 4, 11, p. 1805–1814 10 p.

A lipid site shapes the agonist response of a pentameric ligand-gated ion channel
Hénault, C. M., Govaerts, C., Spurny, R., Brams, M., Estrada-Mondragon, A., Lynch, J., Bertrand, D., Pardon, E., Evans, G. L., Woods, K., Elberson, B. W., Cuello, L. G., Brannigan, G., Nury, H., Steyaert, J., Baenziger, J. E. & Ulens, C., 7 Oct 2019, In: Nature Chemical Biology. 15, 12, p. 1156–1164 9 p.

The morphogen Sonic hedgehog inhibits its receptor Patched by a pincer grasp mechanism
Rudolf, A. F., Kinnebrew, M., Kowatsch, C., Ansell, T. B., El Omari, K., Bishop, B., Pardon, E., Schwab, R. A., Malinauskas, T., Qian, M., Duman, R., Covey, D. F., Steyaert, J., Wagner, A., Sansom, M. S. P., Rohatgi, R. & Siebold, C., 23 Sep 2019, In: Nature Chemical Biology. 15, 10, p. 975-982 8 p.

Structures of influenza A virus RNA polymerase offer insight into viral genome replication
Fan, H., Walker, A. P., Carrique, L., Keown, J. R., Serna Martin, I., Karia, D., Sharps, J., Hengrung, N., Pardon, E., Steyaert, J., Grimes, J. M. & Fodor, E., 12 Sep 2019, In: Nature. 537, p. 287-290 4 p.

Muscarinic acetylcholine receptor binding agents and uses thereof
Steyaert, J., Pardon, E., Kobilka, B. K., Ring, A., Kruse, A. & Manglik, A., 10 Jul 2019, IPC No. C07K16/28, EPO, Patent No. EP2953973B, 5 Feb 2014, Priority date 5 Feb 2013, Priority No. 61/961058

Mechanims of activation of the mu-opoid and the vasopressin V2 receptors seen by liquid NMR
Demene, H., Sounier, R., Laeremans, T., Orcel, H., Steyaert, J., Manglik, A., Kobilka, B., Mouillac, B. & Granier, S., Jul 2019, In: European Biophysics Journal. 48, p. S125-S125

Domain-interface dynamics of CFTR revealed by stabilizing nanobodies
Sigoillot, M., Overtus, M., Grodecka, M., Scholl, D., Garcia-Pino, A., Laeremans, T., He, L., Pardon, E., Hildebrandt, E., Urbatsch, I., Steyaert, J., Riordan, J. R. & Govaerts, C., 14 Jun 2019, In: Nature Communications. 10, 1, 12 p., 2636.

Interrogating dense ligand chemical space with a forward-synthetic library
Chevillard, F., Stotani, S., Karawajczyk, A., Hristeva, S., Pardon, E., Steyaert, J., Tzalis, D. & Kolb, P., 4 Jun 2019, In: Proceedings of the National Academy of Sciences of the United States of America. 116, 23, p. 11496-11501 6 p.

L amino acid transporter structure and molecular bases for the asymmetry of substrate interaction
Errasti-Murugarren, E., Fort, J., Bartoccioni, P., Díaz, L., Pardon, E., Carpena, X., Espino-Guarch, M., Zorzano, A., Ziegler, C., Steyaert, J., Fernández-Recio, J., Fita, I. & Palacín, M., 18 Apr 2019, In: Nature Communications. 10, 1, 12 p., 1807.

Structures of ligand-occupied β-Klotho complexes reveal a molecular mechanism underlying endocrine FGF specificity and activity
Kuzina, E. S., Ung, P. M-U., Mohanty, J., Tome, F., Choi, J., Pardon, E., Steyaert, J., Lax, I., Schlessinger, A., Schlessinger, J. & Lee, S., 16 Apr 2019, In: Proceedings of the National Academy of Sciences of the United States of America. 116, 16, p. 7819-7824 6 p.

Structural insights into the activation of metabotropic glutamate receptors
Koehl, A., Hu, H., Feng, D., Sun, B., Zhang, Y., Robertson, M. J., Chu, M., Kobilka, T. S., Laermans, T., Steyaert, J., Tarrasch, J., Dutta, S., Fonseca, R., Weis, W. I., Mathiesen, J. M., Skiniotis, G. & Kobilka, B. K., 7 Feb 2019, In: Nature. 566, 7742, p. 79–84 6 p.

GABAA receptor signalling mechanisms revealed by structural pharmacology
Masiulis, S., Desai, R., Uchanski, T., Serna Martin, I., Laverty, D., Karia, D., Malinauskas, T., Zivanov, J., Pardon, E., Kotecha, A., Steyaert, J., Miller, K. W. & Aricescu, A. R., 24 Jan 2019, In: Nature. 565, 7740, p. 454-459 6 p.

The Molecular Mechanism of Transport by the Mitochondrial ADP/ATP Carrier
Ruprecht, J. J., King, M. S., Zögg, T., Aleksandrova, A. A., Pardon, E., Crichton, P. G., Steyaert, J. & Kunji, E. R. S., 24 Jan 2019, In: Cell. 176, 3, p. 435-447.e15 13 p.

An improved yeast surface display platform for the screening of nanobody immune libraries
Uchański, T., Zögg, T., Yin, J., Yuan, D., Wohlkönig, A., Fischer, B., Rosenbaum, D. M., Kobilka, B. K., Pardon, E. & Steyaert, J., 23 Jan 2019, In: Scientific Reports - Nature. 9, 1, p. 1-12 12 p., 382.

Structure and nucleotide-induced conformational dynamics of the Chlorobium tepidum Roco protein
Deyaert, E., Leemans, M., Singh, R. K., Gallardo, R., Steyaert, J., Kortholt, A., Lauer, J. & Versées, W., 15 Jan 2019, In: Biochemical Journal. 476, 1, p. 51-66 16 p.

Structure of Prototypic Peptide Transporter DtpA from E. coli in Complex with Valganciclovir Provides Insights into Drug Binding of Human PepT1
Ural-Blimke, Y., Flayhan, A., Strauss, J., Rantos, V., Bartels, K., Nielsen, R., Pardon, E., Steyaert, J., Kosinski, J., Quistgaard, E. M. & Löw, C., 15 Jan 2019, In: Journal of the American Chemical Society. 141, 6, p. 2404–2412 9 p.

Gβγ complex antibodies and uses thereof
Gulati, S., Pardon, E., Steyaert, J. & Palczewski, K., 2019, Patent No. WO2019155041

Novel antigen-binding chimeric proteins and methods and uses thereof
Steyaert, J., Pardon, E., Uchanski, T. & Vranken, W., 2019, Patent No. WO2019086548

Opioid receptor binding agents and uses thereof
Steyaert, J., Laeremans, T., Pardon, E., Kobilka, B. K. & Manglik, A., 2019, Patent No. US10233241

Protein binding domains stabilizing functional conformational states of GPCRs and uses thereof
Steyaert, J., Pardon, E., Rasmussen, S. G. F., Fung, J. J., Kobilka, B. K. & Laeremans, T., 2019, Patent No. US10436796

Characterization and structure determination of a llama-derived nanobody targeting the J-base binding protein 1
van Beusekom, B., Heidebrecht, T., Adamopoulos, A., Fish, A., Pardon, E., Steyaert, J., Joosten, R. P. & Perrakis, A., 1 Nov 2018, In: Acta Crystallographica Section F - Structural Biology Communications. 74, Pt 11, p. 690-695 6 p.

Structural insights into binding specificity, efficacy and bias of a β2AR partial agonist.
Masureel, M., Zou, Y., Picard, L-P., van der Westhuizen, E., Mahoney, J. P., Rodrigues, J. P. G. L. M., Mildorf, T. J., Dror, R. O., Shaw, D. E., Bouvier, M., Pardon, E., Steyaert, J., Sunahara, R. K., Weis, W. I., Zhang, C. & Kobilka, B. K., Nov 2018, In: Nature Chemical Biology. 14, 11, p. 1059-1066 8 p.

Epitope tag for affinity-based applications
Pardon, E., Steyaert, J. & Wyns, L., 18 Oct 2018, IPC No. C07K14/47, C07K5/10, EPO, Patent No. EP2576609B, 25 May 2011, Priority date 25 May 2010, Priority No. GB1008682.5

Use of conformation and domain specific nanobodies to elucidate the working mechanism and structure of LRRK2 and homologous Roco proteins.
Leemans, M., Singh, R. K., Deyaert, E., Steyaert, J., Pardon, E., Gloeckner, C. J., Kortholt, A. & Versees, W., 3 Sep 2018.

Crystal Structure of a ligand-bound LacY-Nanobody Complex
Kumar, H., Finer-Moore, J. S., Jiang, X., Smirnova, I., Kasho, V., Pardon, E., Steyaert, J., Kaback, H. R. & Stroud, R. M., 28 Aug 2018, In: Proceedings of the National Academy of Sciences of the United States of America. 115, 35, p. 8769-8774 6 p.

Crystal structure of human Mediator subunit MED23
Monté, D., Clantin, B., Dewitte, F., Lens, Z., Rucktooa, P., Pardon, E., Steyaert, J., Verger, A. & Villeret, V., 23 Aug 2018, In: Nature Communications. 9, 1, p. 3389-3389 3389.

Mutational analysis of the extracellular disulphide bridges of the atypical chemokine receptor ACKR3/CXCR7 uncovers multiple binding and activation modes for its chemokine and endogenous non-chemokine agonists
Szpakowska, M., Meyrath, M., Reynders, N., Counson, M., Hanson, J., Steyaert, J. & Chevigné, A., Jul 2018, In: Biochemical Pharmacology. 153, p. 299-309 11 p.

Characterisation and structure determination of a llama-derived nanobody targeting the J-base binding protein 1
Beusekom, B. V., Heidebrecht, T., Adamopoulos, A., Fish, A., Pardon, E., Steyaert, J., Joosten, R. P. & Perrakis, A., 7 Jun 2018, In: Acta Crystallographica Section F: Structural Biology and Crystallization Communications. F74, p. 690-695

A Genetically Encoded Biosensor Reveals Location Bias of Opioid Drug Action
Stoeber, M., Jullié, D., Lobingier, B. T., Laeremans, T., Steyaert, J., Schiller, P. W., Manglik, A. & von Zastrow, M., 6 Jun 2018, In: Neuron. 98, 5, p. 963-976.e5 14 p.

Targeting G protein-coupled receptor signaling at the G protein level with a selective nanobody inhibitor
Gulati, S., Jin, H., Masuho, I., Orban, T., Cai, Y., Pardon, E., Martemyanov, K. A., Kiser, P. D., Stewart, P. L., Ford, C. P., Steyaert, J. & Palczewski, K., 18 May 2018, In: Nature Communications. 9, 1, p. 1996 15 p., 1996.

Nanobody-Enabled Reverse Pharmacology on G-Protein-Coupled Receptors. IF 12.257
Pardon, E., Betti, C., Laeremans, T., Chevillard, F., Guillemyn, K., Kolb, P., Ballet, S. & Steyaert, J., 4 May 2018, In: Angewandte Chemie International Edition. 57 , 19, p. 5292-5295 4 p.

Binding Specificities of Nanobody•Membrane Protein Complexes obtained from Chemical Cross-linking and High-Mass MALDI Mass Spectrometry
Köhler, M., Neff, C., Perez, C., Brunner, C., Pardon, E., Steyaert, J., Schneider, G., Locher, K. P. & Zenobi, R., 17 Apr 2018, In: Analytical Chemistry. 90 , 8, p. 5306–5313 8 p.

Development by Genetic Immunization of Monovalent Antibodies Against Human Vasoactive Intestinal Peptide Receptor 1 (VPAC1), New Innovative, and Versatile Tools to Study VPAC1 Receptor Function
Peyrassol, X., Laeremans, T., Lahura, V., Debulpaep, M., El Hassan, H., Steyaert, J., Parmentier, M. & Langer, I., 5 Apr 2018, In: Frontiers in Endocrinology. 9, APR, 13 p., 153.

ALLOSTERIC MODULATION OF THE PENTAMERIC LIGAND-GATED ION CHANNEL ELIC BY FUNCTIONALLY ACTIVE NANOBODIES
Ulens, C., Brains, M., De Peuter, H., Spurny, R., Pardon, E., Bertrand, D., Steyaert, J. & Govaerts, C., Apr 2018, In: The FASEB Journal. 32, 1, issue 1 supplement.

Binding-Site Compatible Fragment Growing Applied to the Design of β2-Adrenergic Receptor Ligands. IF 6.054
Chevillard, F., Rimmer, H., Betti, C., Pardon, E., Ballet, S., van Hilten, N., Steyaert, J., Diederich, W. E. & Kolb, P., 8 Feb 2018, In: Journal of Medicinal Chemistry. 61, 3, p. 1118-1129 12 p.

Allosteric Modulation of the Pentameric Ligand-Gated Ion Channel ELIC by Functionally Active Nanobodies
Brams, M., De Peuter, H., Spurny, R., Pardon, E., Bertrand, D., Steyaert, J., Govaerts, C. & Ulens, C., 2 Feb 2018, In: Biophysical Journal. 114, 3, p. 298A-298A 1 p.

Structures of β-klotho reveal a 'zip code'-like mechanism for endocrine FGF signalling
Lee, S., Choi, J., Mohanty, J., Sousa, L. P., Tome, F., Pardon, E., Steyaert, J., Lemmon, M. A., Lax, I. & Schlessinger, J., 25 Jan 2018, In: Nature. 553, 7689, p. 501–505 5 p.

Structure of the Nanobody-Stabilized Active State of the Kappa Opioid Receptor
Che, T., Majumdar, S., Zaidi, S. A., Ondachi, P., McCorvy, J. D., Wang, S., Mosier, P. D., Uprety, R., Vardy, E., Krumm, B. E., Han, G. W., Lee, M-Y., Pardon, E., Steyaert, J., Huang, X-P., Strachan, R. T., Tribo, A. R., Pasternak, G. W., Carroll, F. I., Stevens, R. C. & 4 others, Cherezov, V., Katritch, V., Wacker, D. & Roth, B. L., 11 Jan 2018, In: Cell. 172, 1-2, p. 55-67 12 p., 55-67.e15.

Challenges in the Structural-Functional Characterization of Multidomain, Partially Disordered Proteins CBP and p300: Preparing Native Proteins and Developing Nanobody Tools
Bekesi, A., Abdellaoui, S., Holroyd, N., Van Delm, W., Pardon, E., Pauwels, J., Gevaert, K., Steyaert, J., Derveaux, S., Borysik, A. & Tompa, P., 2018, In: Methods in Enzymology. 611, p. 607-675 69 p.

Protein binding domains stabilizing functional conformational states of GPCRS and uses thereof
Steyaert, J., Pardon, E., Rasmussen, S. G. F., Fung, J. J., Kobilka, B. K. & Laeremans, T., 2018, Patent No. US9863959

Protein binding domains stabilizing functional conformational states of GPCRs and uses thereof
Steyaert, J., Pardon, E., Rasmussen, S. G. F., Fung, J. J., Kobilka, B. K. & Laeremans, T., 2018, Patent No. US10078088

Protein binding domains stabilizing functional conformational states of GPCRs and uses thereof
Steyaert, J., Pardon, E., Rasmussen, S. G. F., Fung, J. J., Kobilka, B. K. & Laeremans, T., 2018, Patent No. US10054598

Tools and methods for expression of membrane proteins
Steyaert, J., Callewaert, N., Laeremans, T., Pardon, E., Vandewalle, K. & Claes, K., 2018, Patent No. US9890217

Binding domains directed against gpcr: g protein complexes and uses derived thereof
Steyaert, J., Pardon, E., Laeremans, T., Kobilka, B. K., Rasmussen, S. G. F., Granier, S. & Sunahara, R. K., 27 Dec 2017 , Patent No. EP2723764B, 21 Jun 2012, Priority date 21 Jun 2011, Priority No. US61/571159

Structure of PINK1 in complex with its substrate ubiquitin
Schubert, A. F., Gladkova, C., Pardon, E., Wagstaff, J. L., Freund, S. M. V., Steyaert, J., Maslen, S. L. & Komander, D., 7 Dec 2017, In: Nature. 552, 7683, p. 51-56 6 p.

Structural basis for GABAA receptor potentiation by neurosteroids
Miller, P. S., Scott, S., Masiulis, S., De Colibus, L., Pardon, E., Steyaert, J. & Aricescu, A. R., Nov 2017, In: Nature Structural and Molecular Biology. 24, 11, p. 986-992 7 p.

Novel chimeric polypeptides for screening and drug discovery purposes
Steyaert, J., Laeremans, T. & Pardon, E., 18 Oct 2017, IPC No. C07K14/705, C12N15/62, G01N33/566, Patent No. EP2951201B, 30 Jan 2014, Priority date 30 Jan 2013, Priority No. US 61/758518

Soluble polymorphic bank vole prion proteins induced by co-expression of quiescin sulfhydryl oxidase in E. coli and their aggregation behaviors
Abskharon, R., Dang, J., Elfarash, A., Wang, Z., Shen, P., Zou, L. S., Hassan, S., Wang, F., Fujioka, H., Steyaert, J., Mulaj, M., Surewicz, W. K., Castilla, J., Wohlkonig, A. & Zou, W-Q., 4 Oct 2017, In: Microbial Cell Factories. 16, 1, 11 p., 170.

Crystallographic and biochemical characterization of the dimeric architecture of site-2 protease
Schacherl, M., Gompert, M., Pardon, E., Lamkemeyer, T., Steyaert, J. & Baumann, U., Oct 2017, In: Biochimica et Biophysica Acta. 1859, 10, p. 1859-1871 13 p.

Discovery, Structure-Activity Relationship, and Binding Mode of an Imidazo[1,2-a]pyridine Series of Autotaxin Inhibitors
Joncour, A., Desroy, N., Housseman, C., Bock, X., Bienvenu, N., Cherel, L., Labeguere, V., Peixoto, C., Annoot, D., Lepissier, L., Heiermann, J., Hengeveld, W. J., Pilzak, G., Monjardet, A., Wakselman, E., Roncoroni, V., Le Tallec, S., Gallen, R., David, C., Vandervoort, N. & 14 others, Christophe, T., Conrath, K., Jans, M., Wohlkonig, A., Soror, S., Steyaert, J., Touitou, R., Fleury, D., Vercheval, L., Mollat, P., Triballeau, N., van der Aar, E., Brys, R. & Heckmann, B., 14 Sep 2017, In: Journal of Medicinal Chemistry. 60, 17, p. 7371-7392 22 p.

Crystal structure of the pentameric ligand-gated ion channel ELIC in complex with a nanobody active as an allosteric modulator
Brams, M., Spurny, R., Price, K., Pardon, E., Bertrand, D., Lummis, S., Steyaert, J., Govaerts, C. & Ulens, C., Sep 2017, In: The FEBS Journal. 284, p. 23-23

Generation and Characterization of Anti-VGLUT Nanobodies Acting as Inhibitors of Transport
Schenck, S., Kunz, L., Sahlender, D., Pardon, E., Geertsma, E. R., Savtchouk, I., Suzuki, T., Neldner, Y., Štefanić, S., Steyaert, J., Volterra, A. & Dutzler, R., 1 Aug 2017, In: Biochemistry. 56, 30, p. 3962-3971 10 p.

Leishmania donovani tyrosyl-tRNA synthetase structure in complex with a tyrosyl adenylate analog and comparisons with human and protozoan counterparts
Barros-Álvarez, X., Kerchner, K. M., Koh, C. Y., Turley, S., Pardon, E., Steyaert, J., Ranade, R. M., Gillespie, J. R., Zhang, Z., Verlinde, C. L. M. J., Fan, E., Buckner, F. S. & Hol, W. G. J., 31 Jul 2017, In: Biochimie. 138, p. 124-136 13 p.

Rational Design of Nanobody80 Loop Peptidomimetics: Towards Biased β_2 Adrenergic Receptor Ligands
Martin, C., Moors, S. L. C., Danielsen, M., Betti, C., Fabris, C., Pedersen, D. S., Pardon, E., Peyressatre, M., Feher, K., Martins, J. C., Mathiesen, J. M., Morris, M. C., Devoogdt, N., Caveliers, V., De Proft, F., Steyaert, J. & Ballet, S., 18 Jul 2017, In: Chemistry - a European Journal. 23, 40, p. 9632-9640 9 p.

Antibodies targeting G protein-coupled receptors: Recent advances and therapeutic challenges
Ayoub, M. A., Crépieux, P., Koglin, M., Parmentier, M., Pin, J-P., Poupon, A., Reiter, E., Smit, M., Steyaert, J., Watier, H. & Wilkinson, T., Jul 2017, In: mAbs. 9, 5, p. 735-741 7 p.

Structural analysis of the interaction between spiroisoxazoline SMARt-420 and the Mycobacterium tuberculosis repressor EthR2
Wohlkönig, A., Remaut, H., Moune, M., Tanina, A., Meyer, F., Desroses, M., Steyaert, J., Willand, N., Baulard, A. R. & Wintjens, R., 27 May 2017, In: Biochemical and Biophysical Research Communications. 487, 2, p. 403-408 6 p.

A specific nanobody prevents amyloidogenesis of D76N β2-microglobulin in vitro and modifies its tissue distribution in vivo
Raimondi, S., Porcari, R., Mangione, P. P., Verona, G., Marcoux, J., Giorgetti, S., Taylor, G. W., Ellmerich, S., Ballico, M., Zanini, S., Pardon, E., Al-Shawi, R., Simons, J. P., Corazza, A., Fogolari, F., Leri, M., Stefani, M., Bucciantini, M., Gillmore, J. D., Hawkins, P. N. & 6 others, Valli, M., Stoppini, M., Robinson, C. V., Steyaert, J., Esposito, G. & Bellotti, V., 21 Apr 2017, In: Scientific Reports - Nature. 7, p. 46711 46711.

Structural basis of inhibition of lipid-linked oligosaccharide flippase PglK by a conformational nanobody
Perez, C., Köhler, M., Janser, D., Pardon, E., Steyaert, J., Zenobi, R. & Locher, K. P., 19 Apr 2017, In: Scientific Reports - Nature. 7, p. 46641 46641.

Tools and methods for expression of membrane proteins
Steyaert, J., Callewaert, N., Laeremans, T., Pardon, E., Vandewalle, K. & Claes, K., 19 Apr 2017, EPO, Patent No. EP2804875B, 21 Jan 2013, Priority date 19 Jan 2012, Priority No. EP12151814.6

Distinct conformations of GPCR-β-arrestin complexes mediate desensitization, signaling, and endocytosis
Cahill, T. J., Thomsen, A. R. B., Tarrasch, J. T., Plouffe, B., Nguyen, A. H., Yang, F., Huang, L-Y., Kahsai, A. W., Bassoni, D. L., Gavino, B. J., Lamerdin, J. E., Triest, S., Shukla, A. K., Berger, B., Little, J., Antar, A., Blanc, A., Qu, C-X., Chen, X., Kawakami, K. & 7 others, Inoue, A., Aoki, J., Steyaert, J., Sun, J-P., Bouvier, M., Skiniotis, G. & Lefkowitz, R. J., 7 Mar 2017, In: Proceedings of the National Academy of Sciences of the United States of America. 114, 10, p. 2562-2567 6 p.

Structural and biochemical characterization of the nucleoside hydrolase from C. elegans reveals the role of two active site cysteine residues in catalysis
Singh, R. K., Steyaert, J. & Versées, W., 6 Mar 2017, In: Protein Science. 26, 5, p. 985-996 12 p.

Nanobodies to Study G Protein-Coupled Receptor Structure and Function
Manglik, A., Kobilka, B. K. & Steyaert, J., 5 Jan 2017, In: Annual Review of Pharmacology and Toxicology. 57, p. 19-37 19 p.

Binding domains directed against GPCR:G protein complexes and uses derived thereof
Steyaert, J., Pardon, E., Laeremans, T., Kobilka, B. K., Rasmussen, S. G. F., Granier, S. & Sunahara, R. K., 2017, Patent No. US9695227

Chimeric polypeptides comprising G protein-coupled receptors and VHH antibodies
Steyaert, J., Laeremans, T. & Pardon, E., 2017, Patent No. US9593157

Protein binding domains stabilizing functional conformational states of GPCRs and uses thereof
Steyaert, J., Fung, J. J., Kobilka, B. K., Laeremans, T., Pardon, E. & Rasmussen, S. G. F., 2017, Patent No. US9689872

Quiescin-sulfhydryl oxidase inhibits prion formation in vitro
Zhan, Y-A., Abskharon, R., Li, Y., Yuan, J., Zeng, L., Dang, J., Martinez, M. C., Wang, Z., Mikol, J., Lehmann, S., Bu, S., Steyaert, J., Cui, L., Petersen, R. B., Kong, Q., Wang, G-X., Wohlkonig, A. & Zou, W-Q., 11 Dec 2016, In: Aging (Albany NY). 8, 12, p. 3419-3429 10 p.

Protein binding domains stabilizing functional conformational states of gpcrs and uses thereof
Steyaert, J., Pardon, E., Laeremans, T., Kobilka, B. K., Fung, J. J. & Rasmussen, S. G. F., 23 Nov 2016, IPC No. C07K14/705, C07K14/72, C07K16/28, G01N33/543, G01N33/566, G01N33/68, EPO, Patent No. EP2593791B, 18 Jul 2011, Priority date 16 Jul 2010, Priority No. US61399781

Internalized Receptor for Glucose-dependent Insulinotropic Peptide stimulates adenylyl cyclase on early endosomes
Ismail, S., Gherardi, M-J., Froese, A., Zanoun, M., Gigoux, V., Clerc, P., Gaits-Iacovoni, F., Steyaert, J., Nikolaev, V. O. & Fourmy, D., 15 Nov 2016, In: Biochemical Pharmacology. 120, p. 33-45 12 p.

Crystal structure of a LacY-nanobody complex in a periplasmic-open conformation
Jiang, X., Smirnova, I., Kasho, V., Wu, J., Hirata, K., Ke, M., Pardon, E., Steyaert, J., Yan, N. & Kaback, H. R., 1 Nov 2016 , In: Proceedings of the National Academy of Sciences of the United States of America. 113, 44, p. 12420-12425 6 p.

Thermodynamics of Nanobody Binding to Lactose Permease
Hariharan, P., Andersson, M., Jiang, X., Pardon, E., Steyaert, J., Kaback, H. R. & Guan, L., 26 Oct 2016, In: Biochemistry. 55, 42, p. 5917-5926 9 p.

ASSESSMENT OF CFTR THERMAL STABILITY BEFORE AND AFTER PURIFICATION
He, L., Aleksandrov, L., Jensen, T., Sigoillot, M., Kousouros, J., Cui, L., Overtus, M., Grodecka, M., Laeremans, T., Pardon, E., Steyaert, J., Govaerts, C. & Riordan, J. R., Oct 2016, In: Pediatric Pulmonology. 51, p. 197-197

Sortase A-mediated site-specific labeling of camelid single-domain antibody-fragments: a versatile strategy for multiple molecular imaging modalities. IF 3.307
Massa, S., Vikani, N., Betti, C., Ballet, S., Vanderhaegen, S., Steyaert, J., Descamps, B., Vanhove, C., Bunschoten, A., van Leeuwen, F. W. B., Hernot, S., Caveliers, V., Lahoutte, T., Muyldermans, S., Xavier, C. & Devoogdt, N., Sep 2016, In: Contrast Media & Molecular Imaging. 11, 5, p. 328-339

TOWARDS B-ARRESTIN BIASED B2AR LIGANDS: RATIONAL DESIGN OF NANOBODY LOOP MIMETICS
Martin, C., Betti, C., Fabris, C., Mathiesen, J. M., Pardon, E., Peyressatre, M., Moors, S., De Proft, F., Feher, K., Martins, J., Morris, M. C., Devoogdt, N., Caveliers, V., Steyaert, J. & Ballet, S., Sep 2016, In: Journal of Peptide Science. 22, p. S134-S134

DNA immunization combined with scFv phage display identifies antagonistic GCGR specific antibodies and reveals new epitopes on the small extracellular loops
van der Woning, B., De Boeck, G., Blanchetot, C., Bobkov, V., Klarenbeek, A., Saunders, M., Waelbroeck, M., Laeremans, T., Steyaert, J., Hultberg, A. & De Haard, H., 17 Aug 2016, In: mAbs. 8, 6, p. 1126-1135 9 p.

Crystal Structures of the Human Doublecortin C- and N-terminal Domains in Complex with Specific Antibodies
Burger, D., Stihle, M., Sharma, A., Di Lello, P., Benz, J., D'Arcy, B., Debulpaep, M., Fry, D., Huber, W., Kremer, T., Laeremans, T., Matile, H., Ross, A., Rufer, A. C., Schoch, G., Steinmetz, M. O., Steyaert, J., Rudolph, M. G., Thoma, R. & Ruf, A., 29 Jul 2016, In: Journal of Biological Chemistry. 291, 31, p. 16292-16306 14 p., M116.726547.

Allosteric nanobodies reveal the dynamic range and diverse mechanisms of G-protein-coupled receptor activation
Staus, D. P., Strachan, R. T., Manglik, A., Pani, B., Kahsai, A. W., Kim, T. H., Wingler, L. M., Ahn, S., Chatterjee, A., Masoudi, A., Kruse, A. C., Pardon, E., Steyaert, J., Weis, W. I., Prosser, R. S., Kobilka, B. K., Costa, T. & Lefkowitz, R. J., 21 Jul 2016, In: Nature. 535, 7612, p. 448-452 5 p.

Conformational specific nanobodies for Chlorobium tepidum Roco protein.
Leemans, M., Deyaert, E., Pardon, E., Steyaert, J., Kortholt, A. & Versees, W., 18 Jul 2016.

Conformational specific nanobodies for Chlorobium tepidum Roco protein.
Deyaert, E., Leemans, M., Pardon, E., Steyaert, J., Kortholt, A. & Versees, W., 11 Jul 2016.

Allosteric coupling from G protein to the agonist-binding pocket in GPCRs
DeVree, B. T., Mahoney, J. P., Vélez-Ruiz, G. A., Rasmussen, S. G. F., Kuszak, A. J., Edwald, E., Fung, J-J., Manglik, A., Masureel, M., Du, Y., Matt, R. A., Pardon, E., Steyaert, J., Kobilka, B. K. & Sunahara, R. K., 7 Jul 2016, In: Nature. 535, 7610, p. 182-186 5 p.

The unexpected structure of the designed protein Octarellin V.1 forms a challenge for protein structure prediction tools
Figueroa, M., Sleutel, M., Vandevenne, M., Parvizi, G., Attout, S., Jacquin, O., Vandenameele, J., Fischer, A. W., Damblon, C., Goormaghtigh, E., Valerio-Lepiniec, M., Urvoas, A., Durand, D., Pardon, E., Steyaert, J., Minard, P., Maes, D., Meiler, J., Matagne, A., Martial, J. A. & 1 others, Van de Weerdt, C., Jul 2016, In: Journal of Structural Biology. 195, 1, p. 19-30

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, B. & Sunahara, R., Apr 2016, *Faseb Journal.* Vol. 30.

Functional and Biochemical Characterization of Alvinella pompejana Cys-Loop Receptor Homologues
Wijckmans, E., Nys, M., Debaveye, S., Brams, M., Pardon, E., Willegems, K., Bertrand, D., Steyaert, J., Efremov, R. & Ulens, C., 21 Mar 2016, In: PLoS ONE. 11, 3, 23 p., e0151183.

Development by Genetic Immunization of Monovalent Antibodies (Nanobodies) Behaving as Antagonists of the Human ChemR23 Receptor
Peyrassol, X., Laeremans, T., Gouwy, M., Lahura, V., Debulpaep, M., Van Damme, J., Steyaert, J., Parmentier, M. & Langer, I., 15 Mar 2016, In: Journal of Immunology. 196, 6, p. 2893-2901 9 p.

Thermodynamic Insights into Conformational Dynamics of Sugar Transporters
Parameswaran, H., Jiang, X., Pardon, E., Steyaert, J., Kaback, H. R. & Guan, L., 16 Feb 2016, In: Biophysical Journal. 110, 3, p. 137A-137A 1 p.

Epitope tag for affinity-based applications
Steyaert, J., Pardon, E. & Wyns, L., 2016, Patent No. US9518084

Modular integrated secretory system engineering in Pichia pastoris to enhance G-protein coupled receptor expression
Claes, K., Vandewalle, K., Laukens, B., Laeremans, T., Vosters, O., Langer, I., Parmentier, M., Steyaert, J. & Callewaert, N., 2016, In: ACS Synthetic Biology. 5, 10, p. 1070-1075 5 p.

Protein binding domains stabilizing functional conformational states of GPCRs and uses thereof
Steyaert, J., Pardon, E., Rasmussen, S. G. F., Fung, J. J., Kobilka, B. K. & Laeremans, T., 2016, Patent No. US9453065

Towards β-Arrestin biased β2AR ligands: Rational design of Nanobody loop mimetics
Martin, C., Betti, C., Fabris, C., Danielsen, M., Mosolff Mathiesen, J., Pardon, E., Peyressatre, M., Moors, S., De Proft, F., Morris, M. C., Devoogdt, N., Caveliers, V., Steyaert, J. & Ballet, S., 2016, In: Journal of Peptide Science.

Novel Chimeric Polypeptides For Screening and Drug Discovery Puroposes
Steyaert, J., Laeremans, T. & Pardon, E., 31 Dec 2015, IPC No. C07K14/72; C07K16/28; G01N33/566, Patent No. 20150376261, Priority date 30 Jan 2014

Transient conformers of LacY are trapped by nanobodies
Smirnova, I., Kasho, V., Jiang, X., Pardon, E., Steyaert, J. & Kaback, H. R., 10 Nov 2015, In: Proceedings of the National Academy of Sciences of the United States of America. 112, 45, p. 13839-13844 5 p.

Structure and flexibility of the endosomal Vps34 complex reveals the basis of its function on membranes
Rostislavleva, K., Soler, N., Ohashi, Y., Zhang, L., Pardon, E., Burke, J. E., Masson, G. R., Johnson, C., Steyaert, J., Ktistakis, N. T. & Williams, R. L., 9 Oct 2015, In: Science. 350, 6257, 11 p., aac7365.

Structure of a prokaryotic fumarate transporter reveals the architecture of the SLC26 family
Geertsma, E. R., Chang, Y-N., Shaik, F. R., Neldner, Y., Pardon, E., Steyaert, J. & Dutzler, R., 6 Oct 2015, In: Nature Structural and Molecular Biology. 22, 10, p. 803-808 8 p.

DEVELOPMENT OF NANOBODIES AGAINST CFTR
Sigoillot, M., Grodecka, M., Franois, D., Overtus, M., He, L., Laeremans, T., Steyaert, J., Riordan, J. & Govaerts, C., Oct 2015, In: Pediatric Pulmonology. 50, p. 218-218

Sortase-mediated site-specific labeling of nanobodies: A generic method for multiple imaging modalities
Massa, S. M., Vikani, N. A., Gorsen, S., Vanderhaegen, S., Steyaert, J., Bartz, C., Betti, C., Ballet, S., Bunschoten, A., Van Leeuwen, F., Descamps, B., Vanhove, C., Caveliers, V., Lahoutte, T., Hernot, S., Muyldermans, S., Xavier, C. & Devoogdt, N., 2 Sep 2015.

Propagation of conformational changes during μ-opioid receptor activation
Sounier, R., Mas, C., Steyaert, J., Laeremans, T., Manglik, A., Huang, W., Kobilka, B. K., Déméné, H. & Granier, S., 5 Aug 2015, In: Nature. 524, 7565, p. 375–378 4 p., 14680.

Structural insights into μ-opioid receptor activation
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, S. M., Traynor, J. R., Weis, W. I., Steyaert, J., Dror, R. O. & Kobilka, B. K., 5 Aug 2015, In: Nature. 524, 7565, p. 315–321 7 p., 14886.

Characterization of two homologous 2 '-O-methyltransferases showing different specificities for their tRNA substrates.
Somme, J., Van Laer, B., Roovers, M., Steyaert, J., Versees, W. & Droogmans, L., 17 Jul 2015.

Structure/function of two homologous tRNA methyltransferases with different substrate specificity
Somme, J., van Laer, B., Roovers, M., Steyaert, J., Versees, W. & Droogmans, L., Jul 2015, In: European Biophysics Journal. 44, S1, p. S142-S142 1 p.

Crystal structure of the Bloom's syndrome helicase indicates a role for the HRDC domain in conformational changes
Newman, J. A., Savitsky, P., Allerston, C. K., Bizard, A. H., Özer, Ö., Sarlós, K., Liu, Y., Pardon, E., Steyaert, J., Hickson, I. D. & Gileadi, O., 26 May 2015, In: Nucleic Acids Res. 43, p. 5221-5235 15 p.

Structural Basis for Allosteric Enhancement of Agonist Affinity by G Proteins
Mahoney, J., DeVree, B., Velez-Ruiz, G., Rasmussen, S., Kuszak, A., Pardon, E., Steyaert, J., Kobilka, B. & Sunahara, R., 1 Apr 2015, In: The FASEB Journal. 29, 1 Supplement

BRET evidence that β2 adrenergic receptors do not oligomerize in cells
Lan, T-H., Liu, Q., Li, C., Wu, G., Steyaert, J. & Lambert, N. A., 2015, In: Scientific Reports - Nature. 5, 12 p., 10166.

Outward-facing conformers of LacY stabilized by nanobodies
Smirnova, I., Kasho, V., Jiang, X., Pardon, E., Steyaert, J. & Kaback, R., 30 Dec 2014, In: Proc Natl Acad Sci USA. 111, p. 18548-18553 6 p.

Llama immunization with full-length VAR2CSA generates cross-reactive and inhibitory single-domain antibodies against the DBL1X domain
Nunes-Silva, S., Gangnard, S., Vidal, M., Vuchelen, A., Dechavanne, S., Chan, S., Pardon, E., Steyaert, J., Ramboarina, S., Chene, A. & Gamain, B., 9 Dec 2014, In: Scientific Reports - Nature. 4, 9 p., 7373.

Production, crystallization and preliminary X-ray diffraction of the Gαs α-helical domain in complex with a nanobody
Triest, S., Wohlkönig, A., Pardon, E. & Steyaert, J., 1 Nov 2014, In: Acta Crystallographica Section F - Structural Biology Communications. 70, 11, p. 1504-1507 4 p.

Crystal structure of a SLC11 (NRAMP) transporter reveals the basis for transition-metal ion transport
Ehrnstorfer, I. A., Geerstma, E., Pardon, E., Steyaert, J. & Dutzler, R., 19 Oct 2014, In: Nature Structural and Molecular Biology. 21, 11, p. 990-996 7 p.

Characterization of two homologous 2 '-O-methyltransferases showing different specificities for their tRNA substrates.
Somme, J., Van Laer, B., Roovers, M., Steyaert, J., Versees, W. & Droogmans, L., 21 Sep 2014.

Characterization of two homologous 2 '-O-methyltransferases showing different specificities for their tRNA substrates
Somme, J., Van Laer, B., Roovers, M., Steyaert, J., Versees, W. & Droogmans, L., 1 Aug 2014, In: RNA. 20, p. 1257-1271 15 p.

Poster: Supertertiary structures of two partially disordered transcriptional co-activators, CBP and p300.
BEKESI, A., Abdellaoui, S., PANCSA, R., VÁRADI, M., Guha Roy, M., Sallam, M., Kosol, S., Contreras Martos, S., Chaves, R., EFREMOV, R., Pardon, E., Steyaert, J., Ando, T. & Kodera, N., 6 Jul 2014, *Gordon Research Conference.*

Characterization of two homologous 2 '-O-methyltransferases showing different specificities for their tRNA substrates.
Somme, J., Van Laer, B., Roovers, M., Steyaert, J., Versees, W. & Droogmans, L., 19 May 2014.

SAXS analysis of the tRNA-modifying enzyme complex MnmE/MnmG reveals a novel interaction mode and GTP-induced oligomerization
Fislage, M., Brosens, E., Deyaert, E., Spilotros, A., Pardon, E., Loris, R., Steyaert, J., Garcia Pino, A. & Versees, W., 14 May 2014, In: Nucleic Acids Res. 42, p. 5978-5992 15 p.

Inhibition of ligand exchange kinetics via active-site trapping with an antibody fragment
Oyen, D., Steyaert, J. & BARLOW, J., 1 Apr 2014, In: Biochemistry. 53, 12, p. 1879-1881 3 p.

Regulation of beta2-Adrenergic Receptor Function by Conformationally Selective Single-Domain Intrabodies
Staus, D. P., Wingler, L. M., Strachan, R. T., Rasmussen, S. G. F., Pardon, E., Ahn, S., Steyaert, J., Kobilka, B. K. & Lefkowitz, R. J., 1 Mar 2014, In: Molecular Pharmacology. 85, p. 472-481 10 p.

A general protocol for the generation of Nanobodies for structural Biology
Pardon, E., Laeremans, T., Triest, S., Rasmussen, S. G. F., Ruf, A., Muyldermans, S., Hol, W. G. J., Kobilka, B. K. & Steyaert, J., 27 Feb 2014, In: Nature Protocols. 9, p. 674-693 20 p.

Crystal structure of the proteasomal deubiquitylation module Rpn8-Rpn11
Pathare, G., Nagy, I., Sledz, P., Anderson, D., Zhou, H-J., Pardon, E., Steyaert, J., Forster, F., Bracher, A. & Baumeister, W., 25 Feb 2014, In: Proc Natl Acad Sci USA. 111, 8, p. 2984-2989 6 p.

Probing the N-terminal β-sheet conversion in the crystal structure of the human prion protein bound to a nanobody.
Abskharon, RN., Giachin, G., Wohlkonig, A., Soror, SH., Pardon, E., Legname, G. & Steyaert, J., Jan 2014, In: J. Am. Chem. Soc.. 136, 136, p. 937-944 8 p., 3.

Activation and allosteric modulation of a muscarinic acetylcholine receptor
Kruse, A., Ring, A., Manglik, A., Pardon, E., Steyaert, J., Wess, J. & Kobilka, B. K., 5 Dec 2013, In: Nature. 504, 7478, p. 101-106 6 p.

Nanobody Mediated Crystallization of an Archeal Mechanosensitive Channel
Low, C., Yau, Y. H., Pardon, E., Jegerschold, C., Steyaert, J. & Nordlund, P., 21 Oct 2013, In: PLoS ONE. 8, 10, 14 p., e77984.

Recombinant Human Prion Protein Inhibits Prion Propagation in vitro
Yuan, J., Abskharon, R., Steyaert, J. & Zou, W., 9 Oct 2013, In: Scientific Reports - Nature. 3, 8 p., 2911.

Mechanistic analysis of allosteric and non-allosteric effects arising from nanobody binding to two epitopes of the dihydrofolate reductase of Escherichia coli
Oyen, D., Wechselberger, R., SRINIVASAN, V., Steyaert, J. & BARLOW, J., 1 Oct 2013, In: Biochim Biophys Acta. 1834, 10, p. 2147-2157 11 p.

Structure of an early native-like intermediate of beta2-microglobulin amyloidogenesis
Vanderhaegen, S., Fislage, M., Domanska, K., Versees, W., Pardon, E., Bellotti, V. & Steyaert, J., 1 Oct 2013, In: Protein Science. 22, 10, p. 1349-1357 9 p.

The structure of the D3 domain of Plasmodium falciparum myosin tail interacting protein MTIP in complex with a nanobody
Khamrui, S., Turley, S., Pardon, E., Steyaert, J., Fan, E., Verlinde, C. & Hol, W. G. J., 31 Aug 2013, In: Mol Biochem Parasitol. 190, 2, p. 87-91 5 p.

Structures of P-glycoprotein reveal its conformational flexibility and an epitope on the nucleotide-binding domain
Ward, A. B., Szewczyk, P., Grimard, V., Lee, C-W., Martinez, L., Doshi, R., Caya, A., Villaluz, M., Pardon, E., Cregger, C., Swartz, D. J., Falson, P. G., Urbatsch, I. L., Govaerts, C., Steyaert, J. & Chang, G., 13 Aug 2013, In: Proceedings of the

National Academy of Sciences of the United States of America. 110, 33, p. 13386-13391 6 p.

Nanobodies Raised against Monomeric alpha-Synuclein Distinguish between Fibrils at Different Maturation Stages
Guilliams, T., El-Turk, F., Buell, A. K., O'Day, E. M., Aprile, F. A., Esbjoerner, E. K., Vendruscolo, M., Cremades, N., Pardon, E., Wyns, L., Welland, M. E., Steyaert, J., Christodoulou, J., Dobson, C. M. & De Genst, E., 24 Jul 2013, In: Journal of Molecular Biology. 425, 14, p. 2397-2411 15 p.

Mapping the conformational space accessible to BACE2 using surface mutants and cocrystals with Fab fragments, Fynomers and Xaperones
Banner, D., Gsell, B., Debulpaep, M., Laeremans, T., Steyaert, J. & Ruf, A., 1 Jun 2013, In: Acta Cryst D. 69, p. 1124-1137 14 p.

Role of quiescin-sulfhydryl oxidase in prion formation
Zhan, Y-A., Abskharon, R., Steyaert, J. & Zou, W., 1 May 2013, In: Prion. 7, S, p. 93-93 1 p.

Unglycosylated recombinant prion protein inhibits homologous prion propagation in vitro: A glycoform barrier?
Yuan, J., Abskharon, R., Steyaert, J. & Zou, W., 1 May 2013, In: Prion. 7, S, p. 93-93 1 p.

Mapping the Binding Interface between an HIV-1 Inhibiting Intrabody and the Viral Protein Rev
Vercruysse, T., Boons, E., Venken, T., Vanstreels, E., Steyaert, J. & Daelemans, D., 2 Apr 2013, In: PLoS ONE. 8, 4, p. 60259 1 p.

Conformational biosensors reveal GPCR signalling from endosomes
Irannejad, R., Tomshine, J. C., Tomshine, J. R., Chevalier, M., Mahoney, J. P., Steyaert, J., Rasmussen, S. G. F., Sunahara, R. K., El-Samad, H., Huang, B. & Von Zastrow, M., 28 Mar 2013, In: Nature. 495, 7442, p. 534-538 5 p.

Structure of a bacterial type IV secretion core complex at subnanometre resolution
Rivera-Calzada, A., Fronzes, R., Savva, C. G., Chandran, V., Lian, P. W., Laeremans, T., Pardon, E., Steyaert, J., Remaut, H. K., Waksman, G. & Orlova, E. V., 19 Mar 2013, In: EMBO Journal. 32, p. 1195–1204 10 p.

Allosteric inhibition of VIM metallo-β-lactamases by a camelid nanobody
Sohier, J. S., Laurent, C., Chevigné, A., Pardon, E., Srinivasan, V., Wernery, U., Lassaux, P., Steyaert, J. & Galleni, M., 2013, In: Biochemical Journal. 450, 3, p. 477-486 10 p.

Production, crystallisation and X-ray diffraction analysis of two nanobodies against the Duffy Binding like domain DBL6e-FCR3 of the Plasmodium falciparum VAR2CSA protein
Vuchelen, A., Pardon, E., Steyaert, J., Gamain, B., Loris, R., Van Nuland, N. & Ramboarina, S., 2013, In: Acta Crystallogr F Struct Biol Commun. 69, p. 270-274 5 p.

Crystal structure of a heterodimer of editosome interaction proteins in complex with two copies of a cross-reacting nanobody
Park, Y-J., Pardon, E., Wu, M., Steyaert, J. & Hol, W. G. J., 27 Oct 2012, In: Nucleic Acids Research. 40, p. 1828-1840 13 p.

Evaluation of protein binders as crystallization facilitators
Thoma, R., Steyaert, J., Laeremans, T. & Weber, M., 5 Aug 2012, In: Protein Science. 21, SI, p. 216-217 2 p.

Investigation of the aggregation mechanism of polyQ proteins using chimeras of BlaP
Pain, C., Willibal, K., Steyaert, J., Pardon, E. & Dumoulin, M., 1 Aug 2012, In: Protein Science. 21, SI, p. 107-108 2 p.

SbsB structure and lattice reconstruction unveil Ca2+ triggered S-layer assembly
BARANOVA, E., Fronzes, R., Garcia Pino, A., Van Gerven, N., Papapostolou, D., Péhau-Arnaudet, G., Pardon, E., Steyaert, J., Howorka, S. & Remaut, H. K., 10 Jun 2012, In: Nature. 487, p. 119-122 4 p.

Nanobody-stabilize the crystal structure of full-length human PrP
Abskharon, R., Soror, S., Giachin, G., Pardon, E., El Hassan, H., Legname, G. & Steyaert, J., 1 Apr 2012, In: Prion. 6, S, p. 115-115 1 p.

A novel expression system for production of soluble prion proteins in E.coli
Abskharon, R. N. N., Ramboarina, S., El Hassan, H., Mohamed Gad, W., Apostol, M. I., Giachin, G., Legname, G., Steyaert, J., Messens, J., Soror, S. H. & Wohlkonig, A., 10 Jan 2012, In: Microb Cell Fact. 11, 6, p. 6 11 p.

The structure of the C-terminal domain of the largest editosome interaction protein and its role in promoting RNA binding by RNA editing ligase L2
Park, Y-J., Budiarto, T., Wu, M., Pardon, E., Steyaert, J. & Hol, W. G. J., 2012, In: Nucleic Acids Research. 40, p. 6966-6977 12 p.

Crystal structure of the β2 adrenergic receptor–Gs protein complex
Rasmussen, S. G. F., Devree, B. T., Zou, Y., Kruse, A., Chung, K. Y., Kobilka, T. S., Thian, F. S., Chae, P. S., Pardon, E., Calinski, D., Mathiesen, J. M., Shah, S. T. A., Lyons, J. A., Martin, C., Steyaert, J., Skiniotis, G., Weis, W. I., Sunahara, R. K. & Kobilka, B. K., 29 Sep 2011, In: Nature. 477, p. 549-555 6 p.

Structural flexibility of the Gαs α-helical domain in the β2-adrenoceptor Gs complex
Westfield, G. H., Rasmussen, S. G. F., Min, S., Somnath, D., Devree, B. T., Chung, K. Y., Calinski, D., Gisselle, V-R., Oleskie, A. N., Pardon, E., Chae, P. S., Liu, T., Li, S., Woods, V. L., Steyaert, J., Kobilka, B. K., Sunahara, R. K. & Skiniotis, G., 13 Sep 2011, In: Proceedings of the National Academy of Sciences of the United States of America. 108, p. 16086-16091 6 p.

Structural and Functional Studies on the Interaction of GspC and GspD in the Type II Secretion System
Korotkov, K. V., Johnson, T. L., Jobling, M. G., Pruneda, J., Pardon, E., Heroux, A., Turley, S., Steyaert, J., Holmes, R. K., Sandkvist, M. & Hol, W. G. J., 8 Sep 2011, In: PLoS Pathogens. 7, 9, 14 p., e1002228.

Combining in-situ proteolysis and microseed matrix screening to promote crystallization of PrPc-nanobody complexes
Abskharon, R. N. N., Soror, S. H., Pardon, E., El Hassan, H., Legname, G., Steyaert, J. & Wohlkonig, A., Sep 2011, In: Protein Engineering, Design and Selection. 24, 9, p. 737-741 5 p.

Nanobody stabilization of G protein-coupled receptor conformational states
Steyaert, J. & Kobilka, B. K., 31 Aug 2011, In: Current Opinion in Structural Biology. 21, 4, p. 567-572 5 p.

Structural investigation of GPCR transmembrane signaling by use of nanobodies
Steyaert, J., Aug 2011, In: European Biophysics Journal. 40, s1, p. 223-223 1 p.

Structures of a key interaction protein from the Trypanosoma brucei editosome in complex with single domain antibodies
Wu, M., Park, Y-J., Pardon, E., Turley, S., Hayhurst, A., Deng, J., Steyaert, J. & Hol, W. G. J., 30 Apr 2011, In: Journal of Structural Biology. 174, p. 124-136 13 p.

Structure of a nanobody-stabilized active state of the b2 adrenoceptor
Rasmussen, S. G. F., Choi, H-J., 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, R. K., Gellman, S. H., Pautsch, A., Steyaert, J., Weis, W. I. & Kobilka, B. K., 13 Apr 2011, In: Nature. 469, 7329, p. 175-180 5 p.

Constraining Enzyme Conformational Change by an Antibody Leads to Hyperbolic Inhibition
Oyen, D., SRINIVASAN, VASUNDARA., Steyaert, J. & BARLOW, J., 18 Mar 2011, In: Journal of Molecular Biology. 407, p. 138-148 11 p.

Measuring cooperative Rev protein-protein interactions on Rev responsive RNA by fluorescence resonance energy transfer
Vercruysse, T., Pawar, S., De Borggraeve, W. M., Pardon, E., Pavlakis, G. N., Pannecouque, C., Steyaert, J., Balzarini, J. & Daelemans, D., 1 Mar 2011, In: RNA Biology. 8, p. 316-324 9 p.

Atomic structure of a nanobody-trapped domain-swapped dimer of an amyloidogenic beta 2-microglobulin variant
Domanska, K., Vanderhaegen, S., SRINIVASAN, VASUNDARA., Pardon, E., Dupeux, F., Marquez, J. A., Giorgetti, S., Stoppini, M., Wyns, L., Bellotti, V. & Steyaert, J., 25 Jan 2011, In: Proceedings of the National Academy of Sciences of the United States of America. 108, p. 1314-1319 6 p.

Crystallization and preliminary X-ray diffraction analysis of a specific VHH domain against mouse prion protein
Abskharon, R., Soror, S., Pardon, E., El Hassan, H. & Steyaert, J., 1 Dec 2010, In: Acta Crystallographica Section F: Structural Biology and Crystallization Communications. 66, p. 1644-1646 3 p.

Polymeric nanoreactors for enzyme replacement therapy by MNGIE
De Vocht, C., Ranquin, A., Van Ginderachter, J., Vanhaecke, T., Rogiers, V., Van Gelder, P., Versees, W. & Steyaert, J., 20 Nov 2010, In: Journal of Controlled Release. 148, 1, p. E19-E20 2 p.

Polymeric nanoreactors for enzyme replacement therapy of MNGIE
De Vocht, C., Ranquin, A., Van Ginderachter, J., Vanhaecke, T., Rogiers, V., Van Gelder, P., Versées, W. & Steyaert, J., 20 Nov 2010, In: Journal of Controlled Release. 148, 1, p. e19-20 2 p.

Structure and mechanism of the 6-oxopurine nucleosidase from Trypanosoma brucei brucei.
Vandemeulebroucke, A., Minici, C., Bruno, I., Muzzolini, L., Tornaghi, P., Parkin, D., Versees, W., Steyaert, J. & Degano, M., 19 Oct 2010, In: Biochemistry. 49, p. 8999-9010 12 p.

Structure and Properties of a Complex of alpha-Synuclein and a Single-Domain Camelid Antibody
De Genst, E., Guilliams, T., Wellens, J., O'day, E. M., Waudby, C. A., Meehan, S., Dumoulin, M., Hsu, S-T. D., Cremades, N., Verschueren, K., Pardon, E., Wyns, L., Steyaert, J., Christodoulou, J. & Dobson, C. M., 17 Sep 2010, In: Journal of Molecular Biology. 402, p. 326-343 18 p.

An Intrabody Based on a Llama Single-domain Antibody Targeting the N-terminal alpha-Helical Multimerization Domain of HIV-1 Rev Prevents Viral Production
Vercruysse, T., Pardon, E., Vanstreels, E., Steyaert, J. & Daelemans, D., 9 Jul 2010, In: Journal of Biological Chemistry. 285, p. 21768-21780 13 p.

cAbVIM4, a nanobody inhibiting the metallo-beta lactamase VIM-4
Sohier, J. -S., Pardon, E., Laurent, C., Lassaux, P., Buys, N., Willibal, K., Wyns, L., Steyaert, J. & Galleni, M., Jun 2010, In: The FEBS Journal. 277, p. 241-241

Influence of Nanobodies on the aggregation properties of Alpha-synuclein
Guilliams, T., De Genst, E., Pardon, E., Cremades, N., Steyaert, J., Wyns, L. & Dobson, C., Jun 2010, In: The FEBS Journal. 277, p. 84-84

A llama-derived gelsolin single-domain antibody blocks gelsolin-G-actin interaction
Van Den Abbeele, A., De Clercq, S., De Ganck, A., De Corte, V., Van Loo, B., Soror, S., SRINIVASAN, VASUNDARA., Steyaert, J., Vandekerckhove, J. & Gettemans, J., 1 May 2010, In: Cellular and Molecular Life Sciences. 67, 9, p. 1519-1535 17 p.

Evaluation of nucleoside hydrolase inhibitors for the treatment of African trypanosomiasis.
Berg, M., Kohl, L., Van Der Veken, P., Joossens, J., Al-Salabi, M., Castagna, V. C., Giannese, F., Cos, P., Versees, W., Steyaert, J., Grellier, P., Haemers, A., Degano, M., Maes, L., Harry, D. K. & Augustyns, K., 1 May 2010, In: Antimicrob Agents Chemother. 54, p. 1900-1908 9 p.

An Intrabody based on a Llama Single-domain Antibody Targeting the N-terminal alpha-Helical Multimerization Domain of HIV-1 Rev Inhibits Viral Replication
Daelemans, D., Vercruysse, T., Pardon, E., Vanstreels, E. & Steyaert, J., Apr 2010, In: Antiviral Research. 86, 1, p. A22-A22

Small molecules and macromolecules for the inhibition of beta 2 microglobulin fibrillogenesis
Giorgetti, S., Porcari, R., Raimondi, S., Steyaert, J., Domanska, K., Vanderhaegen, S., Relini, A., Parrini, C., Gliozzi, S., Salmona, M., Bucciantini, M., Stefani, M., Gallanti, A., Zorzoli, I., Esposito, G., Stoppini, M. & Bellotti, V., Apr 2010, In: Amyloid. The Journal of Protein Folding Disorders. 17, p. 50-50

Isolation of antigen-binding camelid heavy chain antibody fragments (nanobodies) from an immune library displayed on the surface of Pichia pastoris
Ryckaert, S., Pardon, E., Steyaert, J. & Callewaert, N., 15 Jan 2010, In: Journal of Biotechnology. 145, p. 93-98 6 p.

Hiv-rev-multimerization inhibiting nanobodies
Steyaert, J., Pardon, E., Daelemans, D. & Vercruysse, T., 10 Dec 2009

Substrate-dependent modulation of enzyme activity by allosteric effector antibodies
Barlow, J. N., Conrath, K. & Steyaert, J., Aug 2009, In: Biochimica et Biophysica Acta. 1794, 8, p. 1259-1268 10 p.

Crystal structures of T.vivax nucleoside hydrolase in complex with new potent and specific inhibitors
Versees, W., Goeminne, A., Berg, M., Vandemeulebroucke, A., Haemers, A., Augustyns, K. & Steyaert, J., Jun 2009, In: Biochimica et Biophysica Acta - Proteins and Proteomics. 1794, p. 953-960 8 p.

A Small Llama Antibody Fragment Efficiently Inhibits the HIV Rev Multimerization In Vitro
Vercruysse, T., Pardon, E., Steyaert, J. & Daelemans, D., May 2009, In: Antiviral Research. 82, 2, p. A27-A27

Nanobody-aided structure determination of the EpsI:EpsJ pseudopilin heterodimer from Vibrio vulnificus
Lam, A. Y., Pardon, E., Korotkov, K. V., Hol, W. G. J. & Steyaert, J., 1 Apr 2009, In: Journal of Structural Biology. 166, p. 8-15 8 p.

Assessment of stability, toxicity and immunogenicity of new polymeric nanoreactors for use in enzyme replacement therapy of MNGIE
De Vocht, C., Ranquin, A., Willaert, R., Van Ginderachter, J., Vanhaecke, T., Rogiers, V., Versees, W., Van Gelder, P. & Steyaert, J., 30 Mar 2009, In: Journal of Controlled Release. 137, p. 246-254 9 p.

Crystal Structure of the N-Terminal Domain of the Secretin GspD from ETEC Determined with the Assistance of a Nanobody
Korotkov, K. V., Pardon, E., Steyaert, J. & Hol, W. G. J., 13 Feb 2009, In: Structure. 17, 2, p. 255-265 11 p.

Synthesis of bicyclic N-arylmethyl substituted iminoribitol derivatives as selective nucleoside hydrolase inhibitors.
Berg, M., Bal, G., Goeminne, A., Van Der Veken, P., Versees, W., Steyaert, J., Haemers, A. & Augustyns, K., Feb 2009, In: ChemMedChem. 4, p. 249-260 12 p.

A flexible loop as a functional element in the catalytic mechanism of nucleoside hydrolase from Trypanosoma vivax
Vandemeulebroucke, A., De Vos, S., Van Holsbeke, E., Steyaert, J. & Versees, W., 8 Aug 2008, In: Journal of Biological Chemistry. 283, p. 22272-22282 11 p.

N-Arylmethyl Substituted Iminoribitol Derivatives as Inhibitors of a Purine Specific Nucleoside Hydrolase.
Goeminne, A., Berg, M., Mcnaughton, M., Bal, G., Surpateanu, G., Van Der Veken, P., De Prol, S., Versees, W., Steyaert, J., Haemers, A. & Augustyns, K., 15 Jul 2008, In: Bioorganic & Medicinal Chemistry. 16, p. 6752-6763 12 p.

Synthesis and biochemical evaluation of guanidino-alkyl-ribitol derivatives as nucleoside hydrolase inhibitors
Goeminne, A., Mcnaughton, M., Bal, G., Surpateanu, G., Van Der Veken, P., De Prol, S., Versees, W., Steyaert, J., Haemers, A. & Augustyns, K., Feb 2008, In: European Journal of Medicinal Chemistry. 43, p. 315-326 12 p.

Waarom Mieke Van Hecke de VUB niet mag uitsluiten
Danckaert, J., Gutwirth, S., Van Bendegem, J., Christiaens, J., Corijn, E. & Steyaert, J., 6 Dec 2007, De Morgen, 6 december 2007, p. 14 1 p.

Molecular mechanism of allosteric substrate activation in a thiamine diphosphate-dependent decarboxylase.
Versees, W., Spaepen, E., Wood, D., Leeper, J., Vanderleyden, J. & Steyaert, J., 30 Nov 2007, In: J. Biol. Chem.. 282, p. 35269-35278 10 p.

Characterization of phenylpyruvate decarboxylase, involved in auxin production of Azospirillum brasilense.
Spaepen, E., Versees, W., Gocke, D., Pohl, M., Steyaert, J. & Vanderleyden, J., Nov 2007, In: Journal of Bacteriology. 189, p. 7626-7633 8 p.

Examination of the mechanism and energetic contribution of leaving group activation in the purine-specific nucleoside hydrolase from Trypanosoma vivax
Barlow, J. N. & Steyaert, J., Nov 2007, In: Biochimica et Biophysica Acta. 1774, 11, p. 1451-1461 11 p.

The crystal structure of phenylpyruvate decarboxylase from Azospirillum brasilense at 1.5 Å resolution. Implications for its catalytic and regulatory mechanism.
Versees, W., Spaepen, S., Vanderleyden, J. & Steyaert, J., 1 May 2007, In: The FEBS Journal. 274, p. 2363-2375 13 p.

1,2,3-Triazolylalkylribitol derivatives as nucleoside hydrolase inhibitors.
Goeminne, A., Mcnaughton, M., Bal, G., Surpateanu, G., Van Der Veken, P., De Prol, S., Versees, W., Steyaert, J., Apers, S., Haemers, A. & Augustyns, K., 1 May 2007, In: Bioorganic & Medicinal Chemistry Letters. 17, p. 2523-2526 4 p.

Multiple Transients in the Pre-Steady State of Nucleoside Hydrolase Reveal Complex Substrate Binding, Product Base Release and Two Apparent Rates of Chemistry.
Vandemeulebroucke, A., Versees, W., Steyaert, J. & BARLOW, J., 1 Aug 2006, In: Biochemistry. 45, p. 9307-9318 12 p.

New insights into the mechanism of nucleoside hydrolases from the crystal structure of the Escherichia Coli YbeK protein bound to the reastion product.
Muzzolini, L., Versees, W., Tornaghi, P., Van Holsbeke, E., Steyaert, J. & Degano, M., 24 Jan 2006, In: Biochemistry. 45, p. 773-782 10 p.

New Catalytic Strategies for Leaving Group Activation in Nucleosidehydrolases
Versees, W., Loverix, S., Vandemeulebroucke, A., BARLOW, J., Geerlings, P. & Steyaert, J., 2006, In: Acta crystallographica. Section A, Foundations of crystallography. 62, p. 156 1 p.

Quantum Chemical Study of Leaving Group Activation in T-vivax Nucleoside Hydrolase
Loverix, S., Versees, W., Steyaert, J. & Geerlings, P., 2006, In: International Journal of Quantum Chemistry. 106, p. 565-570 6 p.

Transition-state Complex of the Purine-specific Nucleoside Hydrolase of T. vivax: Enzyme Conformational Changes and Implications for Catalysis.
Versees, W., BARLOW, J. & Steyaert, J., 2006, In: J Mol Biol. 359, 2, p. 331-346 16 p.

Education Assessment - Master in Biomolecular Sciences
Steyaert, J., Van Driessche, E. & Beeckmans, S., Dec 2005, Education assessment Master in biomolecular sciences (with anne ed. Unknown.

Therapeutic nanoreactors: combining chemistry and biology in a novel triblock copolymer drug delivery system
Ranquin, A., Versees, W., Meier, W., Steyaert, J. & Van Gelder, P., Nov 2005, In: Nano Letters. 5, p. 2220-2224 5 p.

Substrate-assisted Leaving Group Activation in Enzyme Catalyzed N-glycosidic Bond Cleavage
Loverix, S., Geerlings, P., Mcnaughton, M., Augustyns, K., Vandemeulebroucke, A., Steyaert, J. & Versees, W., 15 Apr 2005, In: Journal of Biological Chemistry. 280, p. 14799-14802 4 p.

Encapsulation of therapeutic nucleoside hydrolase in functionalised nanocapsules.
Huysmans, G., Ranquin, A., Wyns, L., Steyaert, J. & Van Gelder, P., 2005, In: J Control Release. 102, p. 171-179 9 p.

Influence of the p-p Interactions on the Hydrogen Bonding Capacity of Stacked DNA/RNA Bases
Mignon, P., Loverix, S., Steyaert, J. & Geerlings, P., 2005, In: Nucleic Acids Research. 33, 6, p. 1779-1789 11 p.

Pre-steady state analysis of the nucleoside hydrolase of Trypanosoma vivax. Evidence for rate-limiting product release.
Vandemeulebroucke, A., Versees, W. & Steyaert, J., 2005, *FEBS Journal.* S1 ed. Vol. 272. p. 101-101 1 p.

Functional Assessment of 'In Vivo' and 'In Silico' Mutations in the Guanine Binding Site of RNAse T1 : a DFT Study
Mignon, P., Loverix, S., Steyaert, J. & Geerlings, P., 15 Jul 2004, In: International Journal of Quantum Chemistry. 99, p. 53-58 6 p.

Leaving Group Activation by Aromatic Stacking : an Alternative to General Acid Catalysis
Versees, W., Loverix, S., Vandemeulebroucke, A., Geerlings, P. & Steyaert, J., 2004, In: J Mol Biol. 338, 1, p. 1-6 6 p.

Catalysis by nucleoside hydrolases
Versees, W. & Steyaert, J., 2003, In: Current Opinion in Structural Biology. 13, 6, p. 731-738 8 p.

Cloning, preliminary characterization, and crystallization of nucleoside hydrolases from Caenorhabditis elegans and Campylobacter jejuni
Versees, W., Van Holsbeke, E., De Vos, S., Decanniere, K., Zegers, I. & Steyaert, J., 2003, In: Acta Cryst D. 59, p. 1087-1089 3 p.

Pre-Steady State Analysis of the Nucleoside Hydrolase of Trypanosoma vivax. Evidence for half-of- the-sites reactivity and rate limiting product release
Vandemeulebroucke, A., Versees, W., De Vos, S., Van Holsbeke, E. & Steyaert, J., 2003, In: Biochemistry. 42, 44, p. 12902-12908 7 p.

Ribonucleases: from prototypes to therapeutic targets ?
Loverix, S. & Steyaert, J., 2003, In: Current Medicinal Chemistry. 10, 8, p. 779-785 7 p.

A nucleophile Activation Diad in Ribonucleases : a Combined X-Ray Crystallographic and Ab Initio Quantum Chemical Approach
Mignon, P., Steyaert, J., Loris, R., Geerlings, P. & Loverix, S., 2002, In: J. Biol. Chem.. 277, 39, p. 36770-36774 5 p.

De Vakgroep Toegepaste Biologische Wetenschappen
De Vuyst, L., Van Driessche, E. & Steyaert, J., 2002, Unknown Journal.

Enzyme-Substrate Interactions in the Purine-Specific Nucleoside Hydrolase from Trypanosoma vivax
Versees, W., Decanniere, K., Van Holsbeke, E., Devroede, N. & Steyaert, J., 2002, In: J. Biol. Chem.. 277, 18, p. 15938-15946 9 p.

Structure and function of a novel purine specific nucleoside hydrolase from Trypanosoma vivax
Versées, W., Decanniere, K., Pellé, R., Depoorter, J., Brosens, E., Parkin, D. W. & Steyaert, J., 13 Apr 2001, In: Journal of Molecular Biology. 307, 5, p. 1363-1379 17 p.

Deciphering the mechanism of RNase T1
Loverix, S. & Steyaert, J., 2001, In: Methods in Enzymology. 341, p. 305-323 19 p.

Hydrophobic core manipulations in RNase T1
De Vos, S., Backmann, J., Steyaert, J. & Loris, R., 2001, In: Biochemistry. 40, 34, p. 10140-10149 9 p.

The contribution of metal ions to the conformational stability of RNase T1: crystal vs. solution
Deswarte, J., De Vos, S., Langhorst, U., Steyaert, J. & Loris, R., 2001, In: European Journal of Biochemistry. 268, 14, p. 3993-4000 8 p.

Analysis of a water mediated protein-protein interactions within RNase T1.
Langhorst, U., Backmann, J., Loris, R. & Steyaert, J., 2000, In: Biochemistry. 39, p. 6586-6593 8 p.

Mechanism of RNase T1: concerted triester-like phosphoryl transfer via a catalytic three-centered hydrogen bond.
Loverix, S., Winquist, A., Stormberg, R. & Steyaert, J., 2000, In: Chem. Biol.. 7, 8

Conserved water molecules in a large family of microbial ribonucleases.
Loris, R., Langhorst, U., De Vos, S., Decanniere, K., Bouckaert, J., Maes, D., Transue, T. & Steyaert, J., 1 Jul 1999, In: Proteins. 36, 1, p. 117-134 18 p.

Dissection of the structural and functional role of a conserved hydration site in RNase T1
Langhorst, U., Loris, R., Denisov, V., Doumen, J., Roose, P., Maes, D., Halle, B. & Steyaert, J., 1999, In: Protein Sci. 8, 4, p. 722–730 9 p.

Hydrogen-exchange stabilities of RNase T1 and variants with buried and solvent-exposed Ala Gly mutations in the helix.
Huyghes-Despointes, B. M. P., Langhorst, U., Steyaert, J., Pace, N. C. & Scholz, J. M., 1999, In: Biochemistry. 38, 50, p. 16481-16490 9 p.

Reconsidering the Energetics of Ribonuclease Catalysed RNA hydrolysis
Loverix, S., Laus, G., Martins, J., Wyns, L. & Steyaert, J., 1 Oct 1998, In: European Journal of Biochemistry. 257, 1, p. 286-290 5 p.

An engineered Ribonuclease specific for thiophosphate RNA.
Loverix, S., Winquist, A., Steyaert, J. & Strömberg, R., May 1998, In: Nature Structural and Molecular Biology. 5, 5, p. 365-368 4 p.

Dissecting Histidine Interactions of Ribonuclease T1 with Asparagine and Glutamine Replacements:Analysis of Double Mutant Cycles at one Position
De Vos, S., Doumen, J., Langhorst, U. & Steyaert, J., 1998, In: Journal of Molecular Biology. 275, p. 651-661 11 p.

Expression, Purification, Crystalization and preliminary X-ray analysis of cyclophyn of the bovine parasite Trypanosoma bucei brucei.
Dao-Thi Minh, H., Transue, T. R., Pelle, R., Murphy, N., Poortmans, F. & Steyaert, J., 1998, In: Acta Cryst D. 54, 5, p. 1946-1948 3 p.

The hydrolysis of a slow cyclic thiophosphate substrate of RNase T1 analysed by time-resolved crystallography
Zegers, I., Loris, R., Dehollander, G., Haikal, A., Poortmans, F., Steyaert, J. & Wyns, L., 1998, In: Nature Structural and Molecular Biology. 5, 3, p. 280-283 4 p.

A decade of protein engineering on ribonuclease T-1 - Atomic dissection of the enzyme-substrate interactions
Steyaert, J., 1 Jul 1997, In: European Journal of Biochemistry. 247, 1, p. 1-11 11 p.

Additivity of protein-guanine interactions in ribonuclease T1
Loverix, S., Doumen, J. & Steyaert, J., 11 Apr 1997, In: Journal of Biological Chemistry. 272, 15, p. 9635-9639 5 p.

The contribution of a structurally conserved water molecule to the conformational stability of RNAse T1
Langhorst, U. & Steyaert, J., 1997, In: Protein Engineering. 10, p. 29-29 1 p.

A catalytic function of the structurally conserved Phe100 in ribonuclease T1
Doumen, J., Gonciarz, M., Zegers, I., Loris, R., Wyns, L. & Steyaert, J., 1996, In: Protein Science. 5, p. 1523-1530 8 p.

A 2-BINDING-SITE KINETIC-MODEL FOR THE RIBONUCLEASE-T-1-CATALYZED TRANSESTERIFICATION OF DINUCLEOSIDE PHOSPHATE SUBSTRATES
STEYAERT, J. & ENGELBORGHS, Y., 1 Oct 1995, In: European Journal of Biochemistry. 233, 1, p. 140-144 5 p.

PRIMARY STRUCTURE AND PARTIAL CHARACTERIZATION OF A LIFE-CYCLE-REGULATED CYSTEINE PROTEASE FROM TRYPANOSOMA (NANNOMONAS) CONGOLENSE
FISH, WR., NKHUNGULU, ZM., MURIUKI, CW., NDEGWA, DM., LONSDALEECCLES, JD. & STEYAERT, J., 8 Aug 1995 , In: Gene. 161, 1, p. 125-128 3 p.

INVESTIGATION OF THE FUNCTIONAL INTERPLAY BETWEEN THE PRIMARY SITE AND THE SUBSITE OF RNASE-T(1) - KINETIC-ANALYSIS OF SINGLE AND MULTIPLE MUTANTS FOR MODIFIED SUBSTRATES
STEYAERT, J., HAIKAL, AF. & WYNS, L., Apr 1994, In: Proteins. 18, 4, p. 318-323 6 p.

CRYSTALLOGRAPHIC STUDY OF GLU58ALA RNASE T1-CENTER-DOT-2'-GUANOSINE MONOPHOSPHATE AT 1.9-ANGSTROM RESOLUTION
PLETINCKX, J., STEYAERT, J., ZEGERS, I., CHOE, HW., HEINEMANN, U. & WYNS, L., 22 Feb 1994, In: Biochemistry. 33, 7, p. 1654-1662 9 p.

THE F-PLASMID CCDB PROTEIN INDUCES EFFICIENT ATP-DEPENDENT DNA CLEAVAGE BY GYRASE
BERNARD, P., KEZDY, KE., VANMELDEREN, L., STEYAERT, J., WYNS, L., PATO, ML., HIGGINS, PN. & COUTURIER, M., 5 Dec 1993, In: Journal of Molecular Biology. 234, 3, p. 534-541 8 p.

PURIFICATION, CIRCULAR-DICHROISM ANALYSIS, CRYSTALLIZATION AND PRELIMINARY-X-RAY DIFFRACTION ANALYSIS OF THE F-PLASMID CCDB KILLER PROTEIN
STEYAERT, J., VANMELDEREN, L., BERNARD, P., THI, MHD., LORIS, R., WYNS, L. & COUTURIER, M., 20 May 1993 , In: Journal of Molecular Biology. 231, 2, p. 513-515 3 p.

FUNCTIONAL INTERACTIONS AMONG THE HIS40, GLU58 AND HIS92 CATALYSTS OF RIBONUCLEASE-T(1) AS STUDIED BY DOUBLE AND TRIPLE MUTANTS
STEYAERT, J. & WYNS, L., 5 Feb 1993, In: Journal of Molecular Biology. 229, 3, p. 770-781 12 p.

THE METAL AND SACCHARIDE BINDING-SITES OF THE LENTIL LECTIN - AN X-RAY STUDY
LORIS, R., STEYAERT, J. & WYNS, L., 9 Jan 1993, In: Journal of Cellular Biochemistry. p. 368-368 1 p.

Crystal Structure determination and refinement at 2.3-Å resolution of the lentil lectin.
Loris, R., Steyaert, J., Maes, D., Lisgarten, J., Pickersgill, R. & Wyns, L., 1993, In: Biochemistry. 32, p. 8772-8781 10 p.

Role of histidine-40 in ribonuclease T1 catalysis: three-dimensionalstructures of the partially active His40Lys mutant
Zegers, I., Verhelst, P., Choe, H. W., Steyaert, J., Heinemann, U., Saenger, W. & Wyns, L., 24 Nov 1992, In: Biochemistry. 31, 46, p. 11317-11325 9 p.

Dissection of the ribonuclease T1 subsite. The transesterification kinetics of Asn36Ala and Asn98Ala ribonuclease T1 for minimal dinucleoside phosphates
Steyaert, J., Haikal, A. F., Stanssens, P. & Wyns, L., 1 Feb 1992, In: European Journal of Biochemistry. 203, 3, p. 551-555 5 p.

Subsite interactions of ribonuclease T1: viscosity effects indicate that the rate-limiting step of GpN transesterification depends on the nature of N
Steyaert, J., Wyns, L. & Stanssens, P., 3 Sep 1991, In: Biochemistry. 30, 35, p. 8661-8865 5 p.

Quantitative analysis of the contribution of Glu46 and Asn98 to the guanosine specificity of ribonuclease T1
Steyaert, J., Opsomer, C., Wyns, L. & Stanssens, P., 15 Jan 1991, In: Biochemistry. 30, 2, p. 494-499 6 p.

Histidine-40 of ribonuclease T1 acts as base catalyst when the true catalytic base, glutamic acid-58, is replaced by alanine
Steyaert, J., Hallenga, K., Wyns, L. & Stanssens, P., 25 Sep 1990, In: Biochemistry. 29, 38, p. 9064-9072 9 p.

Conformational stability and activity of ribonuclease T1 and mutants. Gln25----Lys, Glu58----Ala, and the double mutant
Shirley, B. A., Stanssens, P., Steyaert, J. & Pace, C. N., 15 Jul 1989, In: Journal of Biological Chemistry. 264, 20, p. 11621-11625 5 p.

Ablynx
Steyaert, J., 1970