

Publications Margot Beukers

Project management

- 1) Beukers MW. Project management of life-sciences research projects: project characteristics, challenges and training needs. Drug Disc Today 2011 16: 93-98. [Link to Article](#)
- 2) Press releases: best practices and tips
Qilan Lee, Margot Beukers
2013
Available from <http://www.sbsupport.nl/publications>

Drug discovery

- 3) Bottlenecks identification in Drug Discovery ... And solutions please!
Beukers MW
http://www.tipharma.com/fileadmin/user_upload/Documenten/PDF/Workshops/Bottlenecks/Reportof_the_workshop.pdf

PKPD modeling

- 4) Predicting Drug Concentration-Time Profiles in Multiple CNS Compartments Using a Comprehensive Physiologically-Based Pharmacokinetic Model.
Yamamoto Y, Välitälo PA, Huntjens DR, Proost JH, Vermeulen A, Krauwinkel W, Beukers MW, van den Berg DJ, Hartman R, Wong YC, Danhof M, van Hasselt JGC, de Lange ECM.
CPT Pharmacometrics Syst Pharmacol. 2017 Sep 11. doi: 10.1002/psp4.12250. [Link to Article](#)
- 5) Prediction of human CNS pharmacokinetics using a physiologically-based pharmacokinetic modeling approach.
Yamamoto Y, Välitälo PA, Wong YC, Huntjens DR, Proost JH, Vermeulen A, Krauwinkel W, Beukers MW, Kokki H, Kokki M, Danhof M, van Hasselt JGC, de Lange ECM.
Eur J Pharm Sci. 2017 Nov 10. pii: S0928-0987(17)30629-2. [Link to Article](#)

GPCRs

- 6) Sanders MP, Roumen L, van der Horst E, Lane JR, Vischer HF, van Offenbeek J, de Vries H, Verhoeven S, Chow KY, Verkaar F, Beukers MW, McGuire R, Leurs R, IJzerman AP, de Vlieg J, de Esch IJ, Zaman GJ, Klomp JP, Bender A, de Graaf C. A Prospective Cross-Screening Study on G-Protein-Coupled Receptors: Lessons Learned in Virtual Compound Library Design. J Med Chem. 2012 55: 5311-5325. [Link to Article](#)

List of publications: Margot Beukers

- 7) Peeters MC, van Westen GJ, Guo D, Wisse LE, Müller CE, Beukers MW, IJzerman AP. GPCR structure and activation: an essential role for the first extracellular loop in activating the adenosine A_{2B} receptor. *Faseb J* 2011 25: 632-643. [Link to Article](#)
- 8) Lane JR, Klaasse E, Lin J, van Bruchem J, Beukers MW, IJzerman AP. Characterization of [³H]LUF5834: a novel non-ribose high-affinity agonist radioligand for the adenosine A₁ receptor. *Biochem Pharmacol* 2010 80: 1180-1189. [Link to Article](#)
- 9) van der Horst E, Peironcely JE, IJzerman AP, Beukers MW, Lane JR, van Vlijmen HW, Emmerich MT, Okuno Y, Bender A. A novel chemogenomics analysis of G protein-coupled receptors (GPCRs) and their ligands: a potential strategy for receptor de-orphanization. *BMC Bioinformatics*. 2010 11:316. [Link to Article](#)
- 10) Lane JR, Beukers MW, Mulder-Krieger T, IJzerman AP. The endocannabinoid 2-arachidonylglycerol is a negative allosteric modulator of the human A₃ adenosine receptor. *Biochem Pharmacol*. 2010 79:48-56. [Link to Article](#)
- 11) Semrau S, Lommerse P, Beukers M, Schmidt T. Adenosine A₁ Receptor Signaling Unraveled By Particle Image Correlation Spectroscopy (PICS) *Biophysical Journal*, vol. 96, issue 3, pp. 368a-368a
- 12) Lane JR, Beukers MW, IJzerman AP. The endocannabinoids anandamide and 2-arachidonylglycerol are negative allosteric modulators of ligand binding at the human A₃ adenosine receptor. *Fundamental and Clinical Pharmacology* 2008 22: 28-28
- 13) Peeters MC, Beukers MW, IJzerman AP. The second extracellular loop plays an important role in GPCR activation. The adenosine A_{2B} receptor as a point in case. *Fundamental Clinical Pharmacology* 2008 22: 60-60
- 14) Mantri M, de Graaf O, van Veldhoven J, Göblyös A, von Frijtag Drabbe Künzel JK, Mulder-Krieger T, Link R, de Vries H, Beukers MW, Brussee J, IJzerman AP. 2-Amino-6-furan-2-yl-4-substituted nicotinonitriles as A_{2A} adenosine receptor antagonists. *J Med Chem*. 2008 51: 4449-4455. [Link to Article](#)
- 15) Klaasse EC, IJzerman AP, de Grip WJ, Beukers MW. Internalization and desensitization of adenosine receptors. *Purinergic Signal*. 2008 4:21-37. [Link to Article](#)
- 16) van Veldhoven JP, Chang LC, von Frijtag Drabbe Künzel JK, Mulder-Krieger T, Struensee-Link R, Beukers MW, Brussee J, IJzerman AP. A new generation of adenosine receptor antagonists: from di- to trisubstituted aminopyrimidines. *Bioorg Med Chem*. 2008 16: 2741-2752. [Link to Article](#)
- 17) Li Q, Ye K, Blad CC, den Dulk H, Brouwer J, IJzerman AP, Beukers MW. ZM241385, DPCPX, MRS1706 are inverse agonists with different relative intrinsic efficacies on constitutively active mutants of the human adenosine A_{2B} receptor. *J Pharmacol Exp Ther*. 2007 320: 637-645. [Link to Article](#)
- 18) Beukers MW, Meurs I, IJzerman AP. Structure-affinity relationships of adenosine A_{2B} receptor ligands. *Med Res Rev*. 2006 26: 667-698. [Link to Article](#)
- 19) Ye K, Lameijer EW, Beukers MW, IJzerman AP. A two-entropies analysis to identify functional positions in the transmembrane region of class A G protein-coupled receptors. *Proteins*. 2006 63: 1018-1030. [Link to Article](#)
- 20) Klaasse EC, van den Hout G, Roerink SF, de Grip WJ, IJzerman AP, Beukers MW. Allosteric modulators affect the internalization of human adenosine A₁ receptors. *Eur J Pharmacol*. 2005 522(1-8). [Link to Article](#)

List of publications: Margot Beukers

- 21) Beukers MW, IJzerman AP. Techniques: how to boost GPCR mutagenesis studies using yeast. *Trends Pharmacol Sci.* 2005 26: 533-539. [Link to Article](#)
- 22) Chang LC, von Frijtag Drabbe Künzel JK, Mulder-Krieger T, Spanjersberg RF, Roerink SF, van den Hout G, Beukers MW, Brussee J, IJzerman AP. A series of ligands displaying a remarkable agonistic-antagonistic profile at the adenosine A₁ receptor. *J Med Chem* 2005 48: 2045-2053. [Link to Article](#)
- 23) Chang LC, Spanjersberg RF, von Frijtag Drabbe Künzel JK, Mulder-Krieger T, van den Hout G, Beukers MW, Brussee J, IJzerman AP. 2,4,6-trisubstituted pyrimidines as a new class of selective adenosine A₁ receptor antagonists. *J Med Chem* 2004 47: 6529-6540. [Link to Article](#)
- 24) Beukers MW, van Oppenraaij J, van der Hoorn PP, Blad CC, den Dulk H, Brouwer J, IJzerman AP. Random mutagenesis of the human adenosine A_{2B} receptor followed by growth selection in yeast. Identification of constitutively active and gain of function mutations. *Mol Pharmacol* 2004 65: 702-710. [Link to Article](#)
- 25) Beukers MW, Chang LC, von Frijtag Drabbe Künzel JK, Mulder-Krieger T, Spanjersberg RF, Brussee J, IJzerman AP. New, non-adenosine, high-potency agonists for the human adenosine A_{2B} receptor with an improved selectivity profile compared to the reference agonist N-ethylcarboxamidoadenosine. *J Med Chem* 2004 47: 3707-3709. [Link to Article](#)
- 26) Samsonova EV, Back T, Beukers MW, IJzerman AP, Kok JN. Combining and comparing cluster methods in a receptor database. in: *Advances in Intelligent Data Analysis V*, LNCS 2003 2810: 341-351 Springer-Verlag. [Link to Article](#)
- 27) Beukers MW, Wanner MJ, Von Frijtag Drabbe Künzel JK, Klaasse EC, IJzerman AP, Koomen GJ. N⁶-Cyclopentyl-2-(3-phenylaminocarbonyltriazene-1-yl)adenosine (TCPA), a very selective agonist with high affinity for the human adenosine A₁ receptor. *J Med Chem* 2003 46: 1492-1503. [Link to Article](#)
- 28) Lorenzen A, Beukers MW, van der Graaf PH, Lang H, van Muijlwijk-Koezen J, de Groote M, Menge W, Schwabe U, IJzerman AP. Modulation of agonist responses at the A₁ adenosine receptor by an irreversible antagonist, receptor-G protein uncoupling and by the G protein activation state. *Biochem Pharmacol.* 2002 64: 1251-1265. [Link to Article](#)
- 29) Edvardsen Ø, Reiersen A-L, Beukers MW, Kristiansen K. tGRAP, the G-protein coupled receptors mutant database. *Nucleic Acids Research* 2002 30: 361-363. [Link to Article](#)
- 30) van Tilburg EW, van der Klein PAM, de Groote M, Beukers MW, IJzerman AP. Substituted 4-phenyl-2-(phenylcarboxamido)-1,3-thiazole derivatives as antagonists for the adenosine A₁ receptor. *Bioorg Med Chem Lett* 2001 11: 2017-2019. [Link to Article](#)
- 31) van Muijlwijk-Koezen JE, Timmerman H, van der Sluis RP, van de Stolpe AC, Menge WM, Beukers MW, van der Graaf PH, de Groote M, IJzerman AP. Synthesis and use of FSCPX, an irreversible adenosine A₁ antagonist, as a 'receptor knock-down' tool. *Bioorg Med Chem Lett* 2001 11: 815-818. [Link to Article](#)
- 32) Beukers MW, van der Klein PAM, IJzerman AP. Nieuwe zoekstrategieën. In: *Volksgezondheid Toekomst Verkenning 2002, Achtergrond studie. Geneesmiddelen nu en in de toekomst* (Timmerman H en van den Berg Jeths A, eds) Bohn, Stafleu, Van Loghum (Houten) 2001, pp. 439 - 454. [Link to Article](#)
- 33) Beukers MW, Den Dulk H, Van Tilburg EW, Brouwer J, IJzerman AP. Why are A_{2B} receptors low affinity adenosine receptors? Mutation of Asn273 to Tyr increases affinity of

List of publications: Margot Beukers

- human A_{2B} receptor for 2-(1-hexynyl)adenosine. *Mol Pharmacol* 2000 58: 1349-1356. [Link to Article](#)
- 34) De Zwart M, Vollinga RC, Beukers MW, Slegers DF, JKVD, De Groote M, IJzerman AP. Potent antagonists for the human adenosine A_{2B} receptor. Derivatives of the triazolotriazine adenosine receptor antagonist ZM241385 with high affinity. *Drug Development Research* 1999 48: 95-103. [Link to Article](#)
- 35) Beukers MW, Kristiansen, K, IJzerman, AP, Edvardsen, Ø. TinyGRAP database: a bioinformatics tool to mine receptor mutant data. *Trends in Pharmacol Sci* 1999 20: 475-477. [Link to Article](#)
- 36) Dalpiaz A, Townsend-Nicholson A, Beukers MW, Schofield PR, IJzerman AP. Thermodynamics of full agonist, partial agonist and antagonist binding to wild-type and mutant adenosine A₁ receptors. *Biochem Pharmacol* 1998 56: 1437-1445. [Link to Article](#)
- 37) Horn F, Weare J, Beukers MW, Hörsch S, Bairoch A, Chen W, Edvardsen Ø, Campagne F, Vriend G. GPCRDB: an information system for G protein-coupled receptors. *Nucleic Acids Research* 1998 26: 275-279. [Link to Article](#)
- 38) Beukers MW, Klaassen CHW, De Grip WJ, Verzijl D, Timmerman H, Leurs R. Heterologous expression of epitope-tagged rat histamine H₂ receptors in insect Sf9 cells. *British Journal of Pharmacology* 1997 122: 867-874. [Link to Article](#)
- 39) Smit MJ, Timmerman H, Blauw J, Beukers MW, Roovers E, Jacobs EH, Hoffmann M, Leurs R. The C terminal tail of the histamine H₂ receptor contains positive and negative signals important for signal transduction and receptor down-regulation. *J Neurochem*. 1996 67(5): 1791-1800. [Link to Article](#)
- 40) Van Rhee MA, Van der Heijden MPA, Beukers MW, IJzerman AP, Soudijn W, Nickel P. Novel competitive antagonists for P2 purinoceptors. *Eur J Pharmacol Mol Pharmacol sect* 1994 268: 1-7. [Link to Article](#)
- 41) Garritsen A, Beukers MW, IJzerman AP, Cragoe Jr EJ, Soudijn W. The mode of interaction of amiloride and some of its analogues with the adenosine A₁ receptor. *Neurochem Int* 1992 20: 207-213. [Link to Article](#)
- 42) Garritsen A, Beukers MW, IJzerman AP, Soudijn W. Recognition of adenosine receptors by amiloride and its analogs. *Nucleosides & Nucleotides* 1991 10(5): 1107-1111. [Link to Article](#)
- 43) Garritsen A, IJzerman AP, Beukers MW, Cragoe EJ Jr, Soudijn W. Interaction of amiloride and its analogues with adenosine A₁ receptors in calf brain. *Biochem Pharmacol* 1990 40: 827-834. [Link to Article](#)
- 44) Garritsen A, IJzerman AP, Beukers MW, Soudijn W. Chemical modification of adenosine A₁ receptors. Implication for the interaction with R-PIA, DPCPX and amiloride. *Biochem Pharmacol* 1990 40: 835-842. [Link to Article](#)

Ecto-ATPase

- 45) Beukers MW, Kerkhof CJM, Van Rhee MA, Ardanuy U, Gurgel C, Widjaja H, Nickel P, IJzerman AP, Soudijn W. Suramin analogs, divalent cations and ATPγS as inhibitors of

List of publications: Margot Beukers

- ecto-ATPase. Naunyn-Schmiedeberg's Archiv Pharmacol 1995 351: 523-528. [Link to Article](#)
- 46) Crack BE, Pollard CE, Beukers MW, Roberts SM, Hunt F, Ingall AH, McKechnie KCW, IJzerman AP, Leff P. Pharmacological and biochemical analysis of FPL67156, a novel, selective inhibitor of ecto-ATPase. Br J Pharmacol 1995 114: 475-481. [Link to Article](#)
- 47) Crack BE, Beukers MW, McKechnie KCW, IJzerman AP, Leff P. Pharmacological analysis of ecto-ATPase inhibition: evidence for combined enzyme inhibition and receptor antagonism in P2X-purinoceptor ligands. Br J Pharmacol 1994 113: 1432-1438. [Link to Article](#)
- 48) Beukers MW, Kerkhof CJM, IJzerman AP, Soudijn W. Nucleoside transport inhibition and platelet aggregation in human blood: R75231 and its enantiomers, draflazine and R88016. Eur J Pharmacol Molec Pharmacol Sect 1994 266: 57-62. [Link to Article](#)
- 49) Beukers MW, Pirovano IM, Van Weert A, Kerkhof CJM, IJzerman AP, Soudijn W. Characterization of ecto-ATPase on human blood cells. A physiological role in platelet aggregation? Biochem Pharmacol 1993 46: 1959-1966. [Link to Article](#)

Insulin-like growth factor receptors

- 50) Oh Y, Beukers MW, Pham HM, Smanik PA, Smith MC, Rosenfeld RG. Altered affinity of insulin-like growth factor II (IGF-II) for receptors and IGF binding proteins, resulting from limited modifications of the IGF-II molecule. Biochemical J 1991 278: 249-254. [Link to Article](#)
- 51) Neely EK, Beukers MW, Oh Y, Cohen P, Rosenfeld RG. Insulin-like growth factor receptors. Acta Paediatrica Scandinavia 1991 S372: 116-123. [Link to Article](#)
- 52) Beukers MW, Oh Y, Zhang H, Ling N, Rosenfeld RG. [Leu27] Insulin-like growth factor II is highly selective for the type-II IGF receptor in binding, cross-linking and thymidine incorporation experiments. Endocrinology 1991 128(2): 1201-1203. [Link to Article](#)

Long-term potentiation

- 53) Beukers MW, Boddeke HWGM. Pharmacology of long-term potentiation. A model for learning reviewed. Pharmaceutisch Weekblad Scientific Edition 1991 13: 7-13. [Link to Article](#)