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Drug-target residence time : a case for the adenosine A1 and A2A receptors

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Curriculum Vitae

Dong Guo was born on May 8th, 1984 in Xuzhou, China. In 2003, he started his university education at the Western China School of Pharmacy, Sichuan University (China), majoring in biopharmaceutical science. After obtaining his Bachelor degree in 2007, Dong joined a cooperation project between Sichuan University and Leiden University (Netherlands), which allowed him to study Biopharmaceutical Sciences at the then Leiden/Amsterdam Center for Drug Research (Now Leiden Academic Centre for Drug Research, LACDR). During this stage he performed two master projects in Prof. Ad IJzerman's group at the Division of Medicinal Chemistry. Later in his master study (2008), Dong did a third internship at the University of Copenhagen (Denmark) under the guidance of Prof. Mette Rosenkilde and Prof. Thue Schwartz.

After obtaining his master in Biopharmaceutical Sciences in 2009, Dong moved back to Leiden and started his doctorate project on “Drug-target residence time—a case for the adenosine A_1 and A_{2A} receptors” under the supervision of Prof. Ad IJzerman and Dr. Laura Heitman at the Division of Medicinal Chemistry (Jan, 2010 – Jan, 2014). His areas of interest included the set-up of kinetic assays and investigation of ligand-receptor binding kinetics at the adenosine A_1 and A_{2A} receptors. During this stage, Dong presented his research at several (inter)national symposia and congresses. In 2012 he received the first prize at the LACDR Spring Symposium for his oral communication entitled: “Attrition? Residence time! An overlooked parameter in drug design and discovery”. Accordingly, he was elected as the representative of Leiden University for the national PhD competition held during the FIGON Dutch Medicines Days. Later that year, Dong was elected as ‘the most promising young professional’ from the CALN (Chinese Association of Life-Science in the Netherlands) at the CALN pharmaceutical science seminar 2012. Additionally, Dong was awarded three best poster prizes for his posters “Affinity? Residence time! The relationship between residence time and functional efficacy of adenosine A_{2A} receptor agonists” and one best poster prize for his poster “Drug-target residence time-A case

for the adenosine A_{2A} receptor” at several (inter)national conferences from 2010 to 2014.

Following this doctorate study, Dong joined the K4DD consortium, which is financially supported by Europe’s Innovative Medicines Initiative (IMI) program and major Pharma companies, as a postdoctoral scientist at the same division (Jan, 2014). His current research area involves the application of mathematical modeling for molecular understanding of ligand-receptor binding kinetics.

list of publications

Guo D, Mocking T, Dror R, Pan A, Shaw DE, Heitman LH, IJzerman AP. Molecular basis of ligand dissociation from the adenosine A_{2A} receptor. In preparation.

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Louvel J, **Guo D**, Agliardi M, Mocking T, Kars R, Pham TP, Xia L, De Vries H, Brussee J, Heitman LH; IJzerman AP. Agonists for the Adenosine A₁ Receptor with tunable residence time. A case for non-ribose 4-amino-6-aryl-5-cyano-2-thiopyrimidines. *J Med Chem*. 2014; 57(8): 3213-3222.

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Steen A, Sparre-Ulrich AH, Thiele S, **Guo D**, Frimurer TM, Rosenkilde MM. Gating Function of Isoleucine-116 in TM3 (position III:16/3.40) for the activity state of the CC-chemokine receptor 5 (CCR5), *Br J Pharmacol*. 2014; 171(6): 1566-1579.

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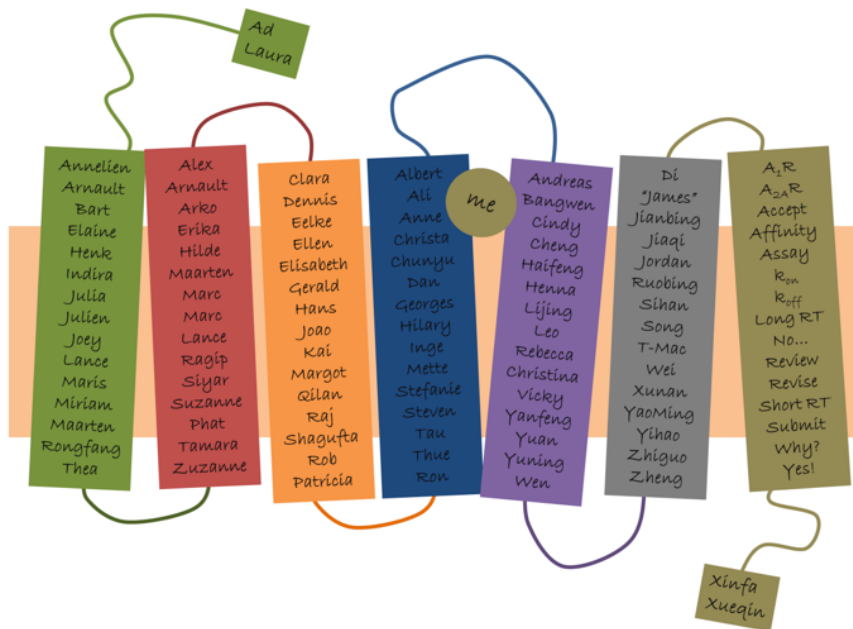


Figure 1. | Dong's GPCR world: those I owe sincere gratitude and indebtedness to during my four-year "residence time" in Leiden. N terminal: Supervisors, Ad and Laura, who have guided me on the track towards a proper scientist; TM 1: Colleagues, who have kept inspiring me during group meetings and journal clubs; TM 2: Former students, together with whom I have gained knowledge in every project; TM 3: Former colleagues, who gave me tips and advice in the early years of my doctorate study; TM 4: Collaborators, who have broadened my vision and greatly facilitated my research projects; TM 5: Friends, who have accompanied me during seasonal changes in Leiden; TM 6: Basketball superstars, who have kept refilling my energy and motivation every week. TM 7: Keywords from my doctorate project, which made the past four years joyful, colorful and beautiful. C terminal: Parents, who have always been there for me, and whom I should definitely spend more time with.

