



Universiteit  
Leiden  
The Netherlands

## **Targeting the adenosinergic system: Ligand binding kinetics and label-free assays for the study of SLC29A1 transporter and A2B adenosine receptor**

Vlachodimou A.

### **Citation**

*Targeting the adenosinergic system: Ligand binding kinetics and label-free assays for the study of SLC29A1 transporter and A2B adenosine receptor.* (2020, November 4). *Targeting the adenosinergic system: Ligand binding kinetics and label-free assays for the study of SLC29A1 transporter and A2B adenosine receptor.* Retrieved from <https://hdl.handle.net/1887/138132>

Version: Publisher's Version

License: [Licence agreement concerning inclusion of doctoral thesis in the Institutional Repository of the University of Leiden](#)

Downloaded from: <https://hdl.handle.net/1887/138132>

**Note:** To cite this publication please use the final published version (if applicable).

Cover Page



Universiteit Leiden



The handle <http://hdl.handle.net/1887/138132> holds various files of this Leiden University dissertation.

**Author:** Vlachodimou, A.

**Title:** Targeting the adenosinergic system: Ligand binding kinetics and label-free assays for the study of SLC29A1 transporter and A2B adenosine receptor

**Issue Date:** 2020-11-04



This research described in this thesis was performed at the division of Drug Discovery and Safety of the Leiden Academic Centre for Drug Research (LACDR), Leiden University, The Netherlands

Cover design and thesis Layout: Anna Vlachodimou

Printed by Ipskamp Printing

© Anna Vlachodimou, 2020

All rights reserved. No part of this book may be reproduced in any form or by any means without permission of the author.

# Targeting the adenosinergic system.

Ligand binding kinetics and label-free assays for the study of SLC29A1 transporter and A<sub>2B</sub> adenosine receptor.

## **PROEFSCHRIFT**

ter verkrijging van

de graad van Doctor aan de Universiteit Leiden,

op gezag van Rector Magnificus prof. mr. C.J.J.M. Stolker,

volgen besluit van het College voor Promoties

te verdedigen op woensdag 4 november 2020

klokke 10.00 uur

door

**Anna Vlachodimou**

geboren te Thessaloniki, Griekenland

in 1990

Promotor: Prof. dr. A.P. IJzerman

Co-Promotor: Dr. L.H. Heitman

Promotiecommissie: Prof. dr. Hubertus Irth (Chair, Leiden University)  
Prof. dr. Joke Bouwstra (Secretary, Leiden University)  
Prof. dr. Christa Müller (University of Bonn)  
Prof. dr. Reinoud Gosens (University of Groningen)  
Prof. dr. Elizabeth C.M. de Lange (University of Leiden)





## TABLE OF CONTENTS

<b>Chapter 1</b>	General Introduction	9
<b>Chapter 2</b>	Equilibrative Nucleoside Transporter 1 and Adenosine Receptors: Partners in treatment	25
<b>Chapter 3</b>	Kinetic profiling and functional characterization of 8-phenylxanthine derivatives as A <sub>2B</sub> adenosine receptor antagonists	65
<b>Chapter 4</b>	Label-free detection of transporter activity via GPCR signalling in living cells: A case for SLC29A1, the equilibrative nucleoside transporter 1	99
<b>Chapter 5</b>	Affinity, binding kinetics and functional characterization of drafazine analogues for human Equilibrative Nucleoside Transporter 1 (SLC29A1)	123
<b>Chapter 6</b>	Kinetic profiling of novel spirobenzo-oxazinepiperidinone derivatives as Equilibrative Nucleoside Transporter 1 inhibitors	151
<b>Chapter 7</b>	Conclusions and Future Perspectives	177
	Summary	195
	Nederlandse samenvatting	199
	Acknowledgements	203
	List of publications	207
	About the author	209

