

Brain Transporters: From Genes and Genetic Disorders to Function and Drug Discovery

Hotel Grand Chancellor, Palm Cove, Queensland, Australia

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September 14th, 2015

Report to ISN for support of the 2015 ISN Brain Transporters Satellite Conference

Co-Chairs:

Robert Vandenberg, PhD robert.vandenberg@sydney.edu.au

Renae Ryan, PhD renae.ryan@sydney.edu.au

Stefan Broer, PhD stefan.broer@anu.edu.au

General Summary:

ISN provided critical financial support for junior and senior investigators to attend, network and present their research at the 2015 ISN Brain Transporters Meeting. The organizers submitted 5 applications for funding to: ISN, the Australian Academy of Sciences, Lundbeck, Neurochemistry International and Prexa. Three were granted, contributing \$35,000. The University of Sydney also provided support through printing of programs and registration name tags. The organizers are happy to communicate that after paying all bills, the meeting account remained with a positive balance.

1. Place, Date of the Satellite Meeting:

August 20th-23rd, 2015

Hotel Grand Chancellor, Palm Cove

Queensland, Australia

2. Meeting Registration and Final Program

47 Delegates attended the meeting with 10 additional guests.

Final attendance at the 2015 ISN Brain Transporters Meeting:

This consisted of:

18 invited speakers

12 senior researchers

11 students

6 Postdocs
10 additional guests

Final program - Attached

3. Speakers

There was a very international feel to the conference with speakers coming from Australia, Austria, China, Denmark, Germany, Mexico, Norway and USA. All invited speakers gave 30 minute presentations. A Young Investigator session was held, in which 6 speakers were selected from submitted abstracts. All sessions were very well attended and lively discussions were held after each presentation and during morning, lunch and afternoon breaks. The poster sessions provided excellent opportunities for students and post docs to show the group their work and to stimulate animated discussions.

4. ISN Supported Categories:

Registration Fees - The standard registration fee was \$250, whilst Student, Postdoctoral Fellows and Guests received discounted registration fees of \$225, \$175 and \$125 respectively.

Guest Speaker Travel Expenses – ISN’s generous support helped off-set the travel expenses of 10 of the 18 invited speakers and assured the quality of presentations at the meeting. 2 of the invited speakers were from NIH who paid their own expenses. Funding was allocated on the basis of the distance travelled by invited speakers, with Australian speakers not receiving any support for travel.

16 of the invited speaker's accommodation expenses were covered by the funding obtained through additional fundraising.

5. ISN Support

ISN’s generous and critical support of the 2015 Brain Transporters Meeting was announced in the program, in posted signs, on repeating slide presentations and public announcements each day of the meeting.

A summary of the ISN amount applied to each category is presented below:

Student and Postdoc Registration Fee Subsidies	\$850
Invited Speaker Expenses (Registration and Accommodation)	\$12,600
Travel Expenses for 10 Speakers from US, Europe and China	\$6550

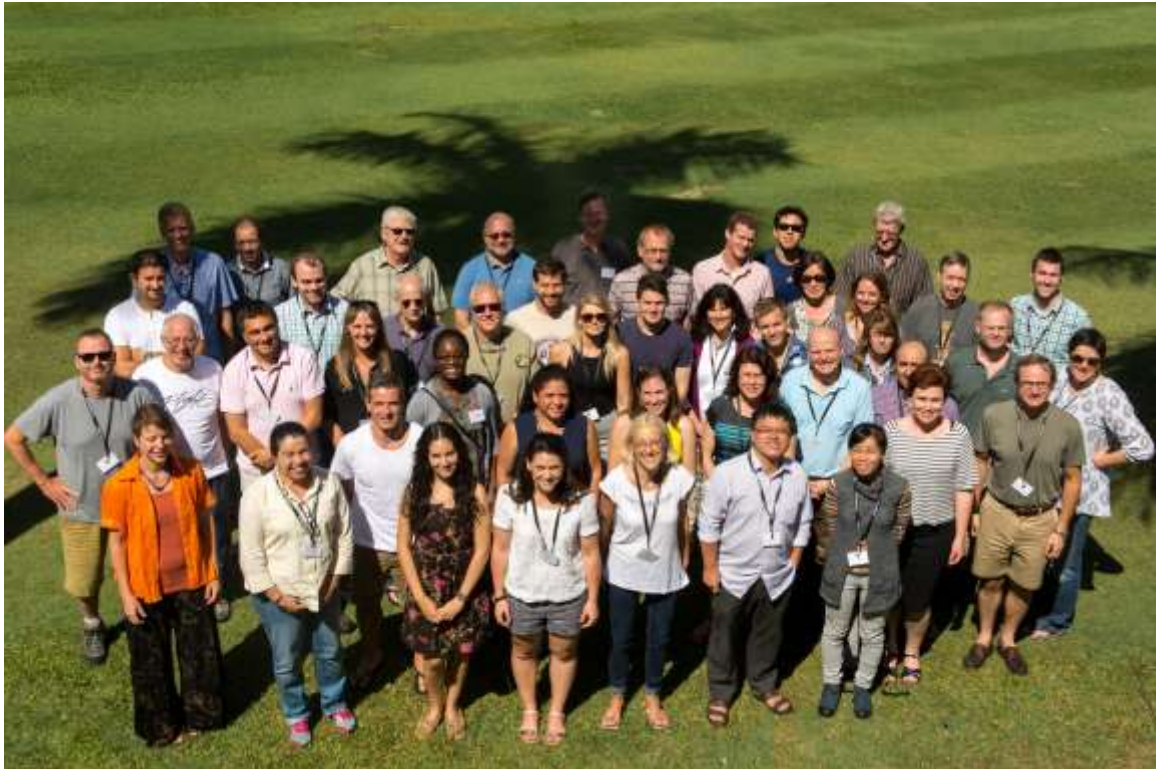
On behalf of the Chairs and Organizing Committee of the 2015 ISN Brain Transporters Satellite, we thank the ISN Officers for their generous support.

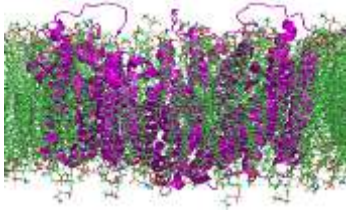
6. Social Events

A conference BBQ dinner was held on the last night of the conference at the Hotel Grand Chancellor on the Fig Tree Deck followed by drinks and an impromptu star-gazing session on the nearby golf course.

Friday afternoon was kept free for delegates to socialize or network. Some delegates used the time to visit Green and Fitzroy Islands, whilst others played golf or relaxed at the beach.

On both a social and scientific level the conference was an outstanding success





Brain Transporters

From Genes and Genetic Disorders to Function and Drug Discovery

Hotel Grand Chancellor
Palm Cove, QLD
Thursday 20th – Sunday 23rd
August, 2015



General information

All scientific sessions will be held in the Arlington Room in the Palm Cove Conference Centre (Map ref 5). Morning and afternoon tea will be served on the Arlington Room Terrace.

Breakfast will be served in the Triton Restaurant and is included in your room fee.

Lunch will be served in the Triton Restaurant (Map ref R).

Conference Dinner

The conference dinner will be an outdoor BBQ buffet on Figtree Deck (Map ref 3).

Guest Registration

Guest registration includes lunch Thurs/Fri/Sat (served in Triton restaurant) and the Conference Dinner on Saturday night.



Schedule for 2015 Brain in Flux Meeting

Wednesday 19th August

Arrival and check-in at Hotel Chancellor, Palm Cove

Optional welcome dinner at a Palm Cove Restaurant, details will be provided.

Thursday 20th August

Time	Session	Arlington Room – Conference Centre (Map ref 5)
8.00 – 8.30	Registration	Arlington Room
8.30 – 10.30	S1: Glutamate Transporters -1 Chair: Rob Vandenberg	Olga Boudker (25 + 5 mins) Glutamate transporters: structural plasticity underlying function Mike Kavanaugh (25 + 5 mins) Modulation of NMDAR ligands L-glutamate and D-serine by SLC1 transporters Joe Mindell (25 + 5 mins) Life's Ups and Downs: the Transport Mechanism of the Succinate Transporter, VcINDY Thomas Stockner (25 + 5 mins) Investigating the mechanism of substrate translocation by Glt_{ph} from the outward- to the inward-facing state
10.30 – 11.00	Morning Tea	Arlington Room Terrace
11.00 – 12.30	S2: Biogenic Amine Transporters -1 Chair: Phil Beart	Randy Blakely (25 + 5 mins) DAT's Only the Beginning : A Forward Genetic Effort in C. elegans to Identify Novel Regulators of Dopamine Signaling Richard Lewis (25 + 5 mins) Binding mode of an allosteric peptide inhibitor of hNET Ji Sze (25 + 5 mins) Serotonin transporter (SERT) expressed in glutamatergic neurons defines cortical map architecture
12.30 – 13.30	Lunch	Triton Restaurant (Map ref R)
13.30 – 15.30	S3: Young Investigators Session Chair: Joe Mindell	Jane Carland (15 +5 mins) Molecular Basis for Substrate and Inhibitor Interactions with the Glycine Transporter, GlyT2 Rheaclare Fraser-Spears (15 +5 mins) Analysis of decynium-22 analogs as novel inhibitors of low-affinity/high-capacity biogenic amine transporters Jennie Garcia-Olivares (15 +5 mins) Conformational changes induced by a direct interaction with Gβγ subunits regulate dopamine transporter function Jan-Philipp Machtens (15 +5 mins)

		<p>Anion permeation through excitatory amino acid transporters Yun Zhou (15 +5 mins) The betaine-GABA transporter (BGT1; slc6a12) is not involved in the inactivation of transmitter GABA, but plays a role in preserving the choline levels in the liver Delany Torres-Salazar (15 +5 mins) Structural crosstalk between anion permeation and substrate transport: a step forward in understanding the dual functions of EAATs</p>
15.30 – 16.00	Afternoon Tea	Arlington Room Terrace
16.00 – 18.00	Session 4	Poster session (all posters)
	Dinner	Own arrangements

Friday 21st August

Time	Session	Arlington Room – Conference Centre
8.30 – 10.00	S5: Amino Acid Transporters Chair: Arturo Ortega	<p>Stefan Broer (25 + 5 mins) Reduced intestinal amino acid absorption increases levels of FGF21 and GLP-1 and improves glycaemic control Renae Ryan (25 + 5 mins) Molecular determinants for neutral and acidic amino acid transport by members of the SLC1A family Gonzalo Torres (25 + 5 mins) A Novel Role for G protein $\beta\gamma$ subunits in Dopamine Transporter-Mediated Dopamine Efflux</p>
10.00 – 10.30	Morning Tea	Morning Tea - Arlington Room Terrace
10.30 – 11.30	S6: Glutamate Transporters -2 Chair: Mike Robinson	<p>Arturo Ortega (25 + 5 mins) Signalling through GLAST: Translational control of gene expression Paul Rosenberg (25 + 5 mins) Conditional knockout reveals cell-type specific functions of GLT-1</p>
11.30	Lunch	Boxed lunch will be available for delegates attending a half day tour. If you are staying at the hotel, you can pre-order your lunch from Triton Bar.
11.30 – 19.00	Free Time	Half day activities
	Dinner	Own arrangements

19.00 – 21.00	S7: Glutamate Transporters -3 Chair: Renae Ryan	<p>Mike Robinson (25 + 5 mins) <i>Astroglial glutamate transport: at the intersection of excitatory signaling and brain energetics</i></p> <p>Ying Shen (25 + 5 mins) <i>PICKing on glutamate transporter and oxidative stress</i></p> <p>Phil Beart (25 + 5 mins) <i>Insights into tissue and cell specific expression of SLC1A2 (EAAT2) transcript variants in the CNS by use of publically available expression data</i></p> <p>Suzanne Underhill (25 + 5 mins) <i>Regulation of a Neuronal Glutamate Transporter by Methamphetamine</i></p>
21.00 – 22.00	Session 8	Wine and Cheese Poster/Networking Session - Arlington Room

Saturday 22nd August

Time	Session	Arlington Room – Conference Centre
9.00 – 10.30	S9: Glycine and GABA Transporters Chair: Susan Amara	Robert Vandenberg (25 + 5 mins) <i>Lipid modulation of glycine transporters</i> Baruch Kanner (25 + 5 mins) <i>The role of gating in the mechanism of GABA transport by GAT-1</i> Niels Danbolt (25 + 5 mins) <i>Generation and characterization of BAC transgenic GABA transporter 2 (GAT2; slc6a13) tdTomato reporter mice</i>
10.30 – 11.00	Morning Tea	Arlington Room Terrace
11.00 – 12.30	S10: Biogenic Amine Transporters -2 Chair: Randy Blakely	Susan Amara (25 + 5 mins) <i>Title TBA</i> Ulrik Gether (25 + 5 mins) <i>Cellular regulation of the dopamine transporter: new insights from use of fluorescent ligands and single molecule fluorescence microscopy</i> Lynette Daws (25 + 5 mins) <i>Organic cation transporters: Unsuspected players in the actions of psychoactive drugs</i>
12.30 – 13.30	Lunch	Triton Restaurant
13.30 – 15.30	S11: Vesicular and Drug Transporters Chair: Stefan Broer	Rebecca Seal (25 + 5 mins) <i>Dorsal horn pain circuits</i> Karin Aubrey (25 + 5 mins) <i>The relationship between membrane and vesicular transporters in determining the presynaptic inhibitory phenotype</i> Megan O'Mara (25 + 5 mins) <i>Characterising the substrate binding sites of the multidrug transporter P-glycoprotein using molecular dynamics simulations</i> Joseph Niccolazo (25 + 5 mins) <i>Lithium chloride enhances brain clearance of β-amyloid through modulation of blood-brain barrier transporter function</i>
15.30 – 16.00	Afternoon Tea	Arlington Room Terrace
16.00 – 19.00	Free Time	
19.00 –	Conference Dinner	BBQ buffet dinner - Fig Tree Deck (Map ref 3)

Sunday 23rd August – depart for Cairns. Coach to Cairns (for ISN meeting) and Cairns airport leaves at 9am.

Poster List

1. The Role of Two Proposed Loops of the Glutamate Transporter 1 (GLT1) in the transport mechanism
Walden Emil Bjørn-Yoshimoto
2. Glutamine Transport Mechanisms in Perisynaptic Astrocytes
Brian Billups
3. Molecular Basis for Substrate and Inhibitor Interactions with the Glycine Transporter, GlyT2
Jane Carland
4. Tuning anion and cation selectivity of uncouple conductances in the human glutamate transporter EAAT1
Rosemary Cater
5. Hypomorphic Variants of SLC7A3 in Males with Autism Spectrum Disorders
Ellen Closs
6. Different Location Same Story: Identification of a Common Binding Site for Membrane-anchored Ancillary Proteins in the SLC6 Family of Neural and Epithelial Transporters
Stephen Fairweather
7. Analysis of decynium-22 analogs as novel inhibitors of low-affinity/high-capacity biogenic amine transporters
Rheaclare Fraser-Spears
8. Conformational changes induced by a direct interaction with G β subunits regulate dopamine transporter function
Jennie Garcia-Olivares
9. Characterization of the Cystine-Glutamate Exchanger (System XCG-) in Bergmann glial cells
Martinez-Lozada Zila
10. Anion permeation through excitatory amino acid transporters
Jan-Philipp Machtens
11. Sided inhibition of the aspartate transporter, GltPh
Benjamin McIlwain
12. Mechanisms Contributing to Lack of Antidepressant Efficacy in Juveniles and Adolescents
Nathan Mitchell
13. Heads and Tails: Lipid Inhibitors of the Glycine Transporter, GlyT2
Shannon Mostyn
14. Structural crosstalk between anion permeation and substrate transport: a step forward in understanding the dual functions of EAATs

Delany Torres-Salazar

15. The betaine-GABA transporter (BGT1; slc6a12) is not involved in the inactivation of transmitter GABA, but plays a role in preserving the choline levels in the liver

Yun Zhou