Advocacy updates
Representatives of the Neuroacanthocytosis Advocacies

VPS13A mutations in VPS13A disease
Shigekazu Nagata, University of Osaka, Osaka, Japan

Roles of BLTP2, a VPS13 homolog, in cellular stress responses and lipid metabolism
Will Prinz, University of Texas Southwestern Medical Center, Dallas, TX, USA

24thVPS13 Forum January 2026

Thank you

To the organisers and hosts:

Professor Ruth Walker Dr.
Kevin Peikert
Professor Dr. Adrian Danek

To all the speakers!

To all attendees and everyone reading this report and helping to share the knowledge.

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INTRODUCTION

The Forum was moderated by Professor Ruth Walker, Department of Neurology, Mount Sinai School of Medicine, New York, USA.

The focus was on presenting the recent insights into VPS13 / BLTP (Bridge-like Lipid Transfer Proteins) structure and function.

The presentations were:

- **Advocacies updates**
  Joy Willard-Williford, NA Advocacy USA
- **VPS13A mutations in VPS13A disease**
  Shigekazu Nagata, University of Osaka, Osaka, Japan
- **Roles of BLTP2, a VPS13 homolog, in cellular stress responses and lipid metabolism**
  Will Prinz, University of Texas Southwestern Medical Center, Dallas, TX, USA

ADVOCACIES UPDATES

Joy Willard Willeford, President of NA Advocacy USA shared the remarkable response following the passing of her husband, Mark, who lived with XK disease. In lieu of flowers, Joy invited donations to support research and the community responded with extraordinary generosity. More than $72,000 was raised, including matched contributions, demonstrating the deep commitment of friends and supporters to advancing the understanding and the care for VPS13A and XK related conditions.

Joy also reminded the group of two important contributions patients can make:

- Brain donation, which provides invaluable tissue for research and helps accelerate scientific progress
- Blood donation for XK patients, whose rare blood type is used / needed for themselves, but it can also be useful in certain paediatric conditions. Mark was a regular donor, and his blood was preserved in a blood bank.

Joy also encouraged everyone to amplify awareness on Rare Disease Day (28 February) by sharing posts from the advocacy groups' social media channels. Every share helps broaden understanding and visibility for these ultra rare conditions.

SCIENTIFIC PRESENTATIONS

Shigekazu Nagata (University of Osaka, Japan)

Topic: VPS13A mutations in VPS13A disease

What was it about? Professor Nagata presented new, unpublished work exploring how different VPS13A mutations affect the protein's behaviour and how these changes may contribute to VPS13A disease.

Key points:

- **VPS13A and XK work together** at the cell membrane to help shuffle certain fats (phospholipids) between the inner and outer layers. This process is important for cell signalling and inflammation control.
- His team studied 10 different VPS13A missense mutations [missense mutation = a genetic error where a single DNA letter ("base") is swapped for another, causing the cell to add the wrong amino acid into a protein chain] to see how they affect the protein's stability, ability to form complexes, and function.
- The mutations fell into three broad categories:
    - Very low expression + no function
    - Normal expression but still no function
    - Normal expression + partial function.
- One mutation behaved in an unusual, dominant-like way in cells, causing enlarged, granular cells with abnormal internal structures. The mechanism is not yet understood.

Why it matters: These findings help explain why some patients have more severe symptoms than others and offer early clues about genotype-phenotype relationships, how specific mutations relate to clinical features. They also strengthen the idea that VPS13A and XK work as a pair, and that disruptions to this partnership may contribute to inflammation and neurodegeneration.

Will Prinz (University of Texas Southwestern Medical Center, USA)

Topic: Roles of BLTP2, a VPS13 homolog, in cellular stress responses and lipid metabolism

What was it about? Dr Prinz presented an engaging overview of his lab's work on BLTP2 (Bridge-like Lipid Transfer Protein), a protein structurally related to VPS13. Although not directly linked to VPS13A disease, BLTP2 helps illuminate how large lipid-transport proteins function more broadly.

Key points:

- BLTP2 is part of a family of proteins that form long tunnels allowing fats to move quickly between cell compartments.
- His team discovered that BLTP2 is especially important in breast cancer cells, where it helps them grow, raising interesting questions about how lipid transport supports cell survival under stress.
- Using yeast as a model, they found that BLTP2 helps cells maintain healthy membrane fluidity, especially in cold or stressful conditions.
- This seems to depend on the balance of two key fats: phosphatidylethanolamine (PE) and phosphatidylcholine (PC).
- When BLTP2 is missing, cells struggle to keep their membranes flexible, which affects growth and resilience.

Why it matters: Although BLTP2 is not VPS13A, studying it helps researchers understand the shared principles behind these large lipid-transport proteins. Insights into how they move fats, maintain membrane health, and respond to stress may ultimately inform therapeutic strategies for VPS13-related diseases.

NEXT VPS13 FORUMS

Dates for your diary:

- **27 April 2026**
- **27 July 2026**
- **26 October 2026.**

The exact times and topics will be announced nearer the time in the email invitation you will receive from Dr Kevin Peikert and also on all our social media channels.

Thank you!

ADVOCACY FOR NEUROACANTHOCYTOSIS PATIENTS

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