FKKT | UNIVERZA V LJUBLJANI
Fakulteta za kemijo in kemijsko tehnologijo

VABILO NA PREDAVANJE
V OKVIRU DOKTORSKEGA ŠTUDIJA
KEMIJSKE ZNANOSTI / INVITATION TO THE
LECTURE WITHIN DOCTORAL PROGRAMME IN
CHEMICAL SCIENCES

Prof. Ludo Van Den Bosch

Laboratory for Neurobiology
VIB-KU Leuven, Belgium

z naslovom / title:

Axonal Pathology in Amyotrophic Lateral Sclerosis

v sredo, 15. 4. 2026 ob 15. uri
v predavalnici 1 v 1. nadstropju Fakultete za kemijo in kemijsko tehnologijo, Večna pot 113 ***/***
on Wednesday, 15. 4. 2026 at 15.00
in lecture room 1, 1st floor at the Faculty of Chemistry and Chemical Technology, Večna pot 113

Vljudno vabljeni! / Kindly invited!

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Abstract:

Amyotrophic lateral sclerosis (ALS) is a severe neurodegenerative disorder characterized by the progressive degeneration of upper and lower motor neurons. As a result, patients gradually lose voluntary muscle control, affecting functions such as walking, speaking, swallowing, and breathing. ALS is typically fatal within 2 to 4 years after symptom onset. Increasing evidence indicates that axonal pathology is an early and prominent feature of the disease, supporting the view that ALS is a distal axonopathy rather than solely a disorder of the neuronal cell body. Multiple mechanisms have been implicated in axonal damage, including impaired microtubule-based transport, metabolic dysfunction, and loss of neuromuscular connectivity. These abnormalities compromise the axon's ability to transport cargo, maintain energy homeostasis, and preserve communication with muscle fibers, thereby contributing to early muscle weakness, denervation, and atrophy. This length-dependent vulnerability may explain why the longest axons are particularly susceptible in ALS. Using induced pluripotent stem cell-based models, we discovered that restoring microtubule-based axonal transport can reverse axonal transport defects. These findings may lead to new therapeutic strategies aimed at preventing denervation and slowing disease progression.