2025 Glial cell meeting, Abstract submission

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Title: Transcriptomic and functional genomic

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Abstract (250 words)

WNT3 showing a significantly higher expression in the right BA44 compared to the left. Functional studies and behavioral tests in mice demonstrated that Wnt3 overexpression in the left auditory cortex induced speech processing-like abnormalities, including altered ultrasonic vocalization and diminished social novelty, linked to impaired myelination and downregulation of Jun and Opalin. These findings establish Wnt3 as a critical regulator of neuronal processes underlying speech processing and hemispheric lateralization, offering novel insights into the molecular basis of language.

Keywords: human speech processing-related regions, transcriptomics, genome-wide genetic studies, WNT3, hemispheric lateralization, ultrasonic vocalization, myelination.