

Chris Wright, Ph.D.

Louise B. McGavock Chair, Professor of Cell and Developmental Biology

Director, Program in Developmental Biology

Leesa Sampson, Ph.D.

Associate Director, Vanderbilt Genome Editing Resource

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Meeting Details

Start Date / Time	September 22, 2021 at 9:00 AM
End Date / Time	September 22, 2021 at 10:00 AM
Duration	1 hour(s)
Location	Zoom
Presenter Name	Chris Wright, D.Phil. and Leesa Sampson, Ph.D.
Presentation Title	Co-operative Design with VGER – Real-Life Experience with Protein Tagging
Status	This meeting has already occurred


Meeting Agenda/Notes

New Technology and It's Use

Fusion proteins have wide utility ranging from live-cell or whole-animal imaging to protein purification and binding assays. Vanderbilt Genome Editing Resource has produced mouse lines that express a diversity of protein tags including fluorescent proteins and smaller epitope tags, such as the ALFA tag for nanobody-based applications. Fusion protein design can vary substantially according to the intended purpose, associated tools already available, tag placement within the protein, and the potential for interference with cellular localization or function. VGER helps in working through these considerations and choosing optimal guide RNAs, thus maximizing your chance of achieving your research needs.

VGER's flexibility is illustrated by the Wright Laboratory's work on Mnx1, an essential transcription factor in the pancreatic endocrine insulin-producing cells. Gene editing created a mouse line carrying an Mnx1 point mutation found in humans to be associated with permanent neonatal diabetes, and added traditional (3xFLAG) and novel (ALFA) epitope tags at the Mnx1 C-terminus. Careful consideration of various indels created during editing provide confidence that extending the C-terminus of Mnx1 does not debilitate function. The commercially available fluorescently labeled nanobodies against the ALFA epitope, plus other reagents, suggest broadly applicable utility of this relatively under-used tag in systematic functional analyses.

Attachment

 [SPRING_Meeting_09.22.2021.pdf](#) - Added on September 16, 2021 at 10:52 AM by Pam Uttz
