

# Arg Accelerates Proximity-Enabled Sufex Reaction Rate In Proteins

Tech ID: 34405 / UC Case 2023-105-0

## TECHNOLOGY DESCRIPTION

This innovative technology leverages a proximity-enabled sulfur fluoride exchange (SuFEx) reaction to rapidly and efficiently crosslink proteins, offering transformative potential for covalent protein drug development and protein detection. By introducing a strategically placed arginine (Arg) mutation near a genetically incorporated bioreactive unnatural amino acid (Uaa), such as FSY, the reaction rate and yield of protein crosslinking are significantly enhanced. This approach has been successfully demonstrated in nanobody and affibody systems, targeting key proteins like EGFR, HER2, and others, showcasing its broad applicability across different protein platforms.

What makes this technology unique is its ability to harness the precise orientation of Arg side chains to accelerate the SuFEx reaction, enabling faster protein crosslinking with unprecedented efficiency. This novel strategy reduces reaction time while increasing yield, offering a highly adaptable solution for next-generation protein therapeutics and diagnostics.

## STAGE OF DEVELOPMENT

The invention is currently at the proof-of-concept stage, with validation across multiple protein systems in pre-clinical studies.

## RELATED MATERIALS

- ▶ [Arginine Accelerates Sulfur Fluoride Exchange and Phosphorus Fluoride Exchange Reactions between Proteins](#) - 10/15/2024

## PATENT STATUS

Country	Type	Number	Dated	Case
European Patent Office	Published Application	WO2024/145687	07/04/2024	2023-105

Additional Patent Pending

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## OTHER INFORMATION

### CATEGORIZED AS

- ▶ **Biotechnology**
- ▶ Health
- ▶ **Medical**
- ▶ Therapeutics
- ▶ **Research Tools**
- ▶ Nucleic Acids/DNA/RNA
- ▶ Other

### RELATED CASES

2023-105-0

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