

# SOHM Inc. Releases White Paper on ABBIE, a Cas9-Guided Integrase Enabling Stable Gene Integration and Creation of SKOV3-GYS1 Cell Line for Drug Discovery.



**CHINO HILLS, CALIFORNIA / ACCESS Newswire / November 6, 2025 / SOHM, Inc.** (OTCID:SHMN), a pharmaceutical and biotechnology company specializing in generic drugs and gene-editing tools, a leader in Gene Editing and Cell Engineering, is pleased to announce the release of a technical white paper describing **ABBIE**, a **Cas9-guided integrase** platform that enables **donor-DNA integration without double-strand breaks or viral vectors**. Using ABBIE, the team established **SKOV3-GYS1**, an ovarian cancer cell line with stable overexpression of **glycogen synthase 1 (GYS1)** to support drug-discovery applications focused on glycogen metabolism.

## Highlights from the white paper

- **Non-viral, DSB-free integration:** ABBIE employs a dCas9–integrase fusion to guide targeted, donor-DNA integration while **avoiding double-strand breaks and viral delivery**.
- **Functional overexpression achieved:** In ABBIE-engineered cells, **GYS1 protein levels were ~3x** those of parental SKOV3 cells, and **GYS1 catalytic activity exceeded 5x** parental levels.
- **Genomic characterization:** Following selection, **bulk populations** exhibited **stable donor integration**. **Whole-genome sequencing of the highest-expressing clone** revealed a **single integration event at an intergenic locus**.
- **Targeting note & ongoing work:** While ABBIE is **guide-directed**, the **exact insertion coordinates can diverge from the canonical CRISPR–Cas9 target**. Ongoing studies are refining **target-selection rules** and **determinants of integration site choice** to further improve **precision and reproducibility**.

## Research and development significance

**GYS1** plays a central role in **glycogen metabolism** and has been implicated in tumor survival under stress conditions. The **SKOV3-GYS1** line offers a **robust in-vitro platform** for **mechanistic studies** and for **screening GYS1-targeting small molecules** and other metabolic modulators. More broadly, ABBIE's **non-viral, DSB-free** approach may help

expand **knock-in** strategies for **cell-engineering** and **model development**.

## Partnership opportunities

SOHM welcomes **strategic partnerships** to accelerate **assay development**, **screening campaigns**, and **platform optimization** using ABBIE-engineered models. Interested parties are invited to contact SOHM.

**White paper:** [Articles and Publications – SOHM Inc.](#)

[ABBIE and the Future of Cancer Research](#)

### About SOHM, Inc.:

SOHM is a biopharmaceutical company dedicated to developing and commercializing gene editing technologies for research, synthetic biology, and therapeutic applications. With a focus on precision medicine, SOHM aims to revolutionize the treatment of genetic diseases by providing safe, efficient, and targeted gene editing solutions. Through strategic collaborations and groundbreaking research, SOHM is at the forefront of advancing the field of gene therapy. SOHM strives to transform the landscape of genome editing and improve the quality of life through scientific discovery.

For further information regarding this announcement or to explore potential collaborations, please contact:

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