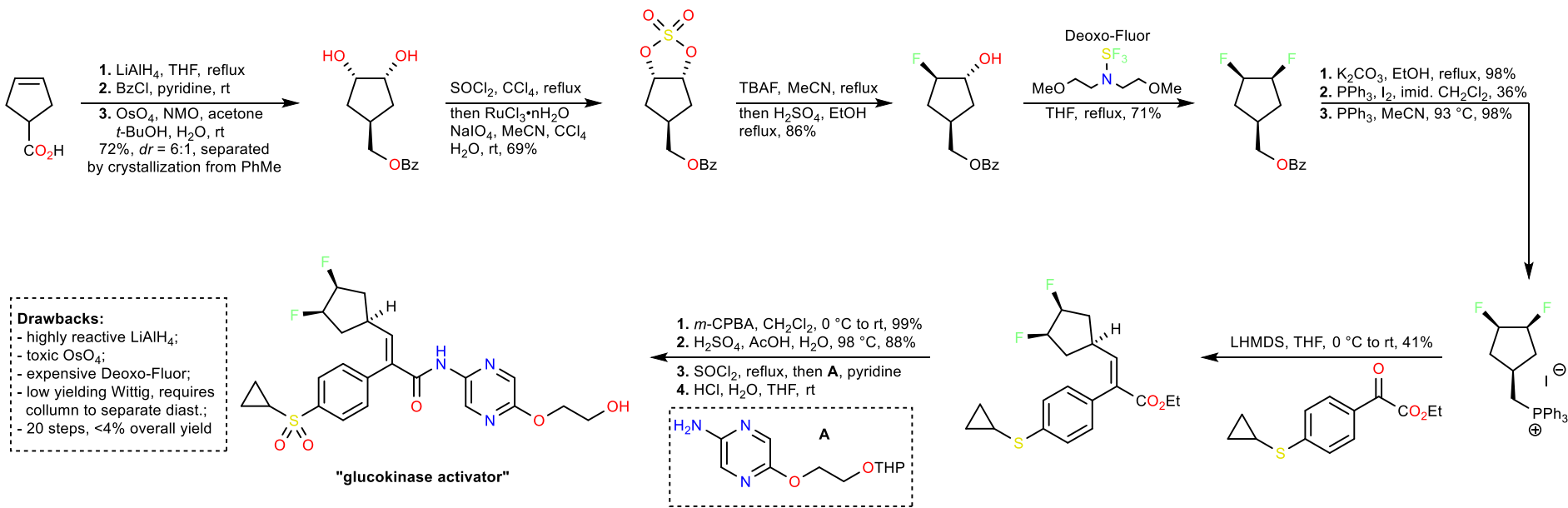


- Glucokinase (GK), also known as hexokinase type IV, plays a critical role in regulating glucose uptake in the liver and insulin secretion in the pancreas.
- Glucokinase activators (GKA) stimulate GK and thereby lower the glucose level in blood.
- Target compound was identified as a potent GKA for the treatment of type 2 diabetes mellitus.

**TEIJIN**

Tsuchiya, H. *Org. Process Res. Dev.* **2020**. <https://pubs.acs.org/doi/10.1021/acs.oprd.0c00180>  
Matschinsky, F. M. *Nature Reviews Drug Discovery*, **2009**, 8, 399 <https://doi.org/10.1038/nrd2850>

## Medicinal route:



**Drawbacks:**

- highly reactive  $\text{LiAlH}_4$ ;
- toxic  $\text{OsO}_4$ ;
- expensive Deoxo-Fluor;
- low yielding Wittig, requires column to separate diast.;
- 20 steps, <4% overall yield

**Process route:**

