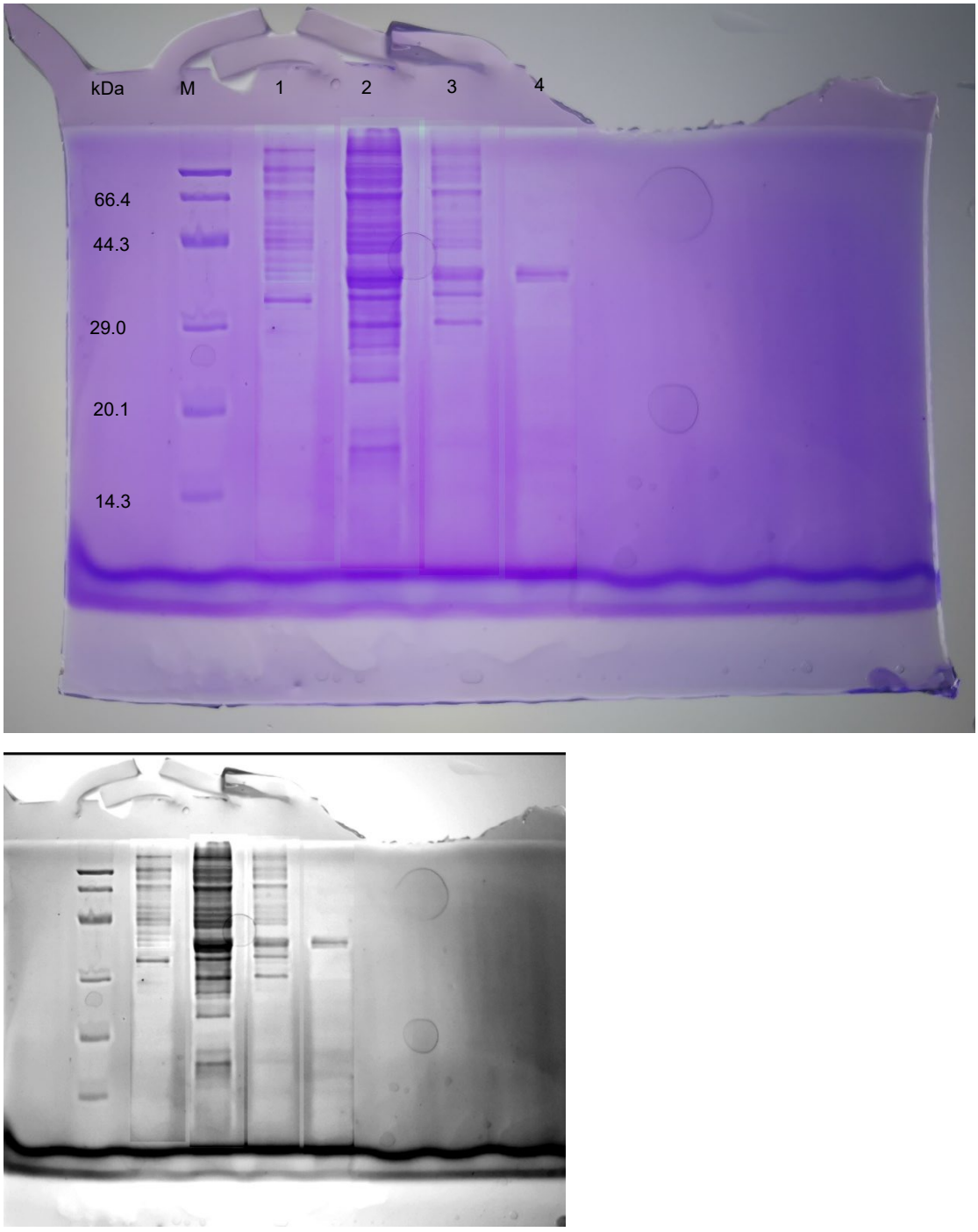

Figure S1. Original SDS-PAGE image of purified TcDAEase (corresponding to Figure 3 in main text). Lane M: protein marker; Lane 1: E. coli BL21 (empty pET22b vector); Lane 2: E. coli expressing TcDAEase; Lane 3: crude extract; Lane 4: purified TcDAEase.

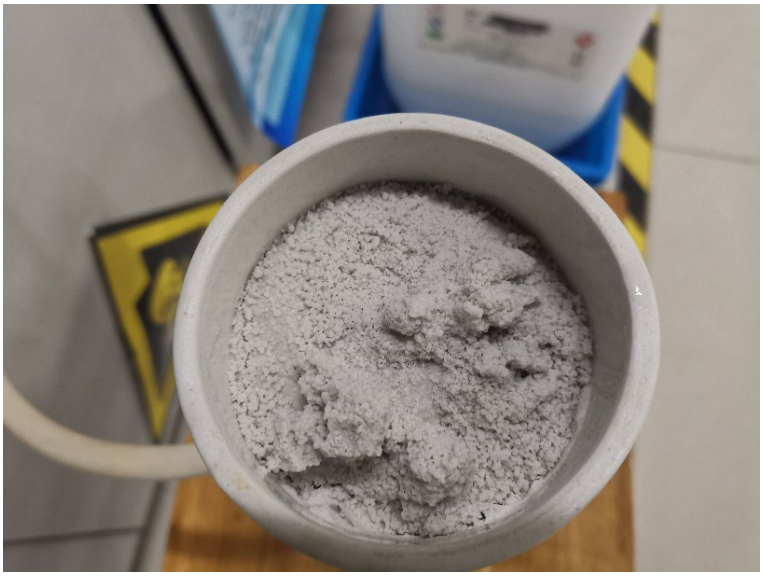

Figure S2. Appearance of the filtered immobilized TcDAEase particles.



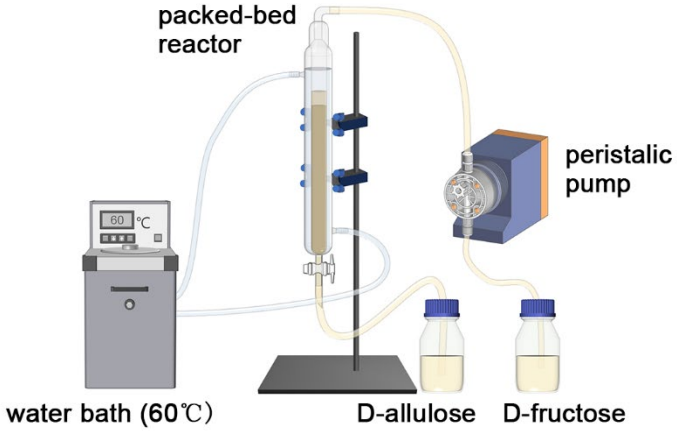

Figure S3. Photograph of the experimental setup for continuous D-allulose production using immobilized TcDAEase. The system comprises a packed-bed reactor, a peristaltic pump, temperature-controlled water bath, and substrate/product containers.