

DATE: Day 08 Month 05 Year 2026

SUMMARY of FY2025 RESEARCH RESULTS REPORT For International Collaborative Research with IPR, The University of Osaka

Research Title		Crystal structure determination enzymes for industrial, agricultural and medical applications	
Applicant	Name	Mohd Shukuri Mohamad Ali	
	Affiliation	Enzyme and Microbial Technology Research Center, Department of Biochemistry, Faculty of Biotechnology and Biomolecular Sciences, Universiti Putra Malaysia, 43400 Serdang, Selangor, Malaysia	
	Present Title	Professor	
Research Collaborator (Host PI)		Prof. Atsushi Nakagawa	
Summary Diffraction analysis demonstrated excellent crystallization quality and structural resolution for the investigated enzymes across different crystallization strategies. Native crystals of EstD9 obtained via sitting-drop vapor diffusion produced high-resolution datasets ranging from 1.69–1.30 Å, suitable for detailed structural interpretation. Enzyme–substrate complex crystals of EstD9 also showed successful co-crystallization with the highest at 1.69 Å, enabling comprehensive visualization of substrate-binding interactions and catalytic architecture. In parallel, native crystals prepared using the counter-diffusion capillary method yielded diffraction resolutions between 1.39-1.90 Å, confirming the effectiveness of this approach for generating highly diffracting crystals.			
Session	Enzyme	Crystallization method	Maximum resolution
2025A	EstD9 – Native	Sitting drop	1.60 Å
	EstD9 – Native		1.30 Å
	EstD9 – Native		1.69 Å
	EstD9 – Native		1.59 Å
	EstD9 – Enzyme-substrate complex		3.30 Å
	EstD9 – Enzyme-substrate complex		2.30 Å
	EstD9 – Enzyme-substrate complex		2.30 Å
	EstD9 – Enzyme-substrate complex		2.10 Å
	EstD9 – Enzyme-substrate complex		1.932 Å
	EstD9 – Enzyme-substrate complex		1.70 Å
	EstD9 – Enzyme-substrate complex		1.69 Å
	CD – Native		Counter diffusion (capillary)
	CD – Native	1.39 Å	
	CD – Native	1.45 Å	

***Deadline: May 11, 2026**

***Please submit it to E-mail: tanpakuken-kyoten@office.osaka-u.ac.jp.**

***Please describe this summary within 1 sheet. Please DON'T add some sheets.**

***This summary will be published on the web.**