LIFE SCIENCE

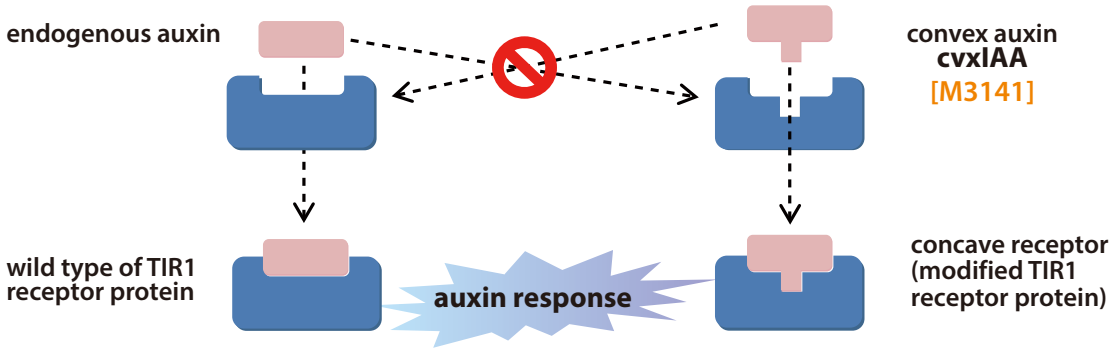
Synthetic Auxin and Selective Binding to Modified Receptor

cvxIAA
10mg / 50mg
[M3141]

Synthetic auxin cvxIAA selectively binds to the modified auxin receptor, allowing for targeted binding at selected tissues and organs expressing the modified receptor.

Due to its multiple physiological functions, it has been a challenge to analyze several physiological phenomena stemming from auxin signaling at specific tissues and organs. Recently, Torii *et al.* at the Institute of Transformative Bio-Molecules (ITbM), at Nagoya University developed cvxIAA [M3141], a synthetic auxin using a molecular design technology known as the bump-and-hole strategy*. cvxIAA specifically binds to modified TIR1 receptor proteins (concave receptor, ccvTIR1). cvxIAA scarcely binds to wild type of TIR1 receptor protein and endogenous auxin scarcely binds to concave receptor. This cross-over independence and selective binding observed with Auxin-TIR1 versus cvxIAA-TIR1(modified) can allow for transformative research into otherwise ddifficult to study organ and tissue systems.

[Pairing of convex IAA (cvxIAA) and concave TIR1 (ccvTIR1) engineered using bump-and-hole strategy]



*The bump-and-hole strategy is a method used to engineer an orthogonal pair of receptor proteins and ligands by producing a small hole at a binding site in a receptor through mutation then subsequently introducing modified potential ligands to the binding site of the receptor. For the cvxIAA-ccvTIR1 system, modified TIR1 receptor proteins (concave TIR1, ccvTIR1) feature an amino acid substitution in the binding site with that lacks aromaticity. Alternatively, cvxIAA is designed to bind specifically to the modified TIR1 receptor protein by introducing an aromatic ring to structure of IAA.

This product was commercialized on the basis of the research results of ITbM, Nagoya University.

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Application

The comparison of auxin (1-NAA) and convex IAA (cvxIAA) responses in seedlings of *Arabidopsis thaliana* wild type and transformants expressing concave receptors.

Chemical hijacking of auxin signaling with an engineered auxin-TIR1 pair
N. Uchida, K. Takahashi, R. Iwasaki, R. Yamada, M. Yoshimura, T. A. Endo, S. Kimura, H. Zhang, M. Nomoto, Y. Tada, T. Kinoshita, K. Itami, S. Hagihara, K. U. Torii, *Nat. Chem. Biol.* **2018**, *14*, 299.

These information have been provided by Prof. Keiko Torii at Institute of TransformativeBio-Molecules (ITbM), Nagoya University.

Other auxins

IAA	5g / 25g [I0022]	**4-BPA**	5g / 25g [B2746]
K-IAA	1g / 25g [I0023]	**MCPA**	25g / 500g [C0206]
IAA Methyl Ester	5g / 25g [M2605]	**4-CPA**	25g / 500g [C0250]
IAA Ethyl Ester	5g / 25g [E0878]	**PCIB**	25g [C0940]
IPA	5g / 25g [I0032]	**Dichlorprop**	25g [D1942]
IBA	5g / 25g [I0026]	**Dicamba**	200mg [D4800]
IAN	1g / 25g [I0024]	**MCPB Ethyl Ester**	100mg / 1g [E1149]
NAA	25g / 500g [N0005]	**2,4-D**	25g / 500g [D0396]
K-NAA	25g [N0006]	**Na-2,4-D Monohydrate**	25g / 500g [D1319]
Na-NAA	25g / 500g [N0007]	**2,4,5-T Potassium Salt**	25g / 500g [T1509]
NOA	25g / 500g [N0045]		
1-Naphthaleneacetamide	25g / 500g [N0624]		

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