



Madeinplant

2026



Who we are

Madeinplant is a plant biotechnology company, specialized in reprogramming plants to improve their agronomic traits or turn them into valuable biofactories

Molecular farming (CDMO)

We manufacture biomolecules, active ingredients, and high-value products eliminating the need for animal resources and reducing environmental impact.

New Genomic Techniques (NGTs)

We develop and apply precision biotechnological tools to generate plant varieties that address tomorrow's challenges today.



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We are founded by genomics and biotechnology experts from the CSIC (Spanish National Research Council)



Antonio Granell
Molecular breeding,
omics



Diego Orzáez
Genetic engineering,
synthetic biology



Jose Antonio Darós
Plant virus
biotechnology



Asun Fernández
Molecular
agriculture



Marta Vázquez
Genetic
engineering



Federico Grau
Agronomic engineer,
plant biotechnology



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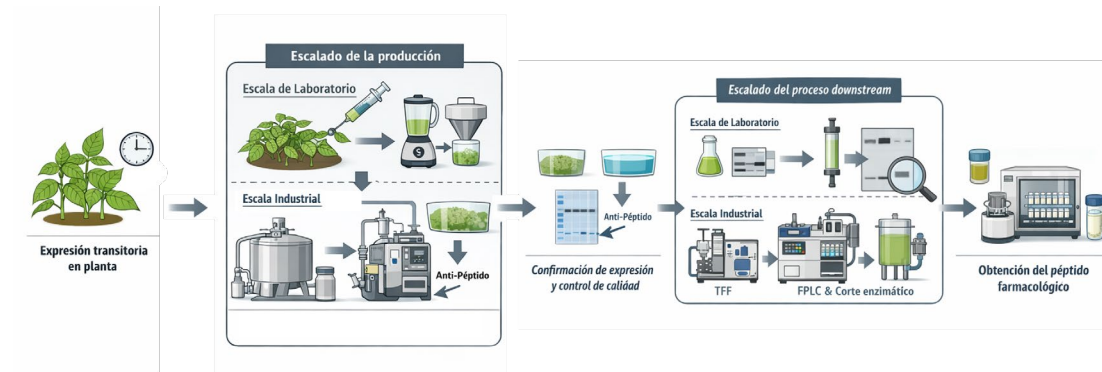


Molecular farming

CDMO services in plant biofactories

Tailored services for each development stage

1. Genetic design and vector construction
2. Plant production at laboratory scale
3. Scale-up and pilot-scale production
4. Extraction, purification and characterization
5. Formulation, freeze-drying and preservation



Quality control

- Following GLP-aligned standards
- Production areas set up following GMP-aligned principles for segregation and material flow.
- Written SOPs in place to guide production operations.
- Multipurpose production lines with batch tracking following each product from seed to final purified aliquot.

A Plant Lot #	#	Seeding date	Transplant...	Growth space	Gro...	Plant species	A Light...	A Humidity...	A Temper...
LC5.2	21	17/9/2025	16/10/2025	Phytotron 2 PCUV	sparce	N. benthamiana	250 (16h light, 8h dark)	60-70	20-24,5
L71	36	2/9/2025	2/10/2025	GH Burjassot	sparce	N. benthamiana	250 (16h light, 8h dark)	60-70	20-24,5
LC4.2	16	2/9/2025	2/10/2025	Phytotron 2 PCUV	sparce	N. benthamiana	250 (16h light, 8h dark)	50	22-25
LC4.1	16	2/9/2025	2/10/2025	Phytotron 1 PCUV	sparce	N. benthamiana	250 (16h light, 8h dark)	45	19-24
L70	15	19/8/2025	17/9/2025	GH Burjassot	sparce	N. benthamiana	250 (16h light, 8h dark)	60-70	20-24,5

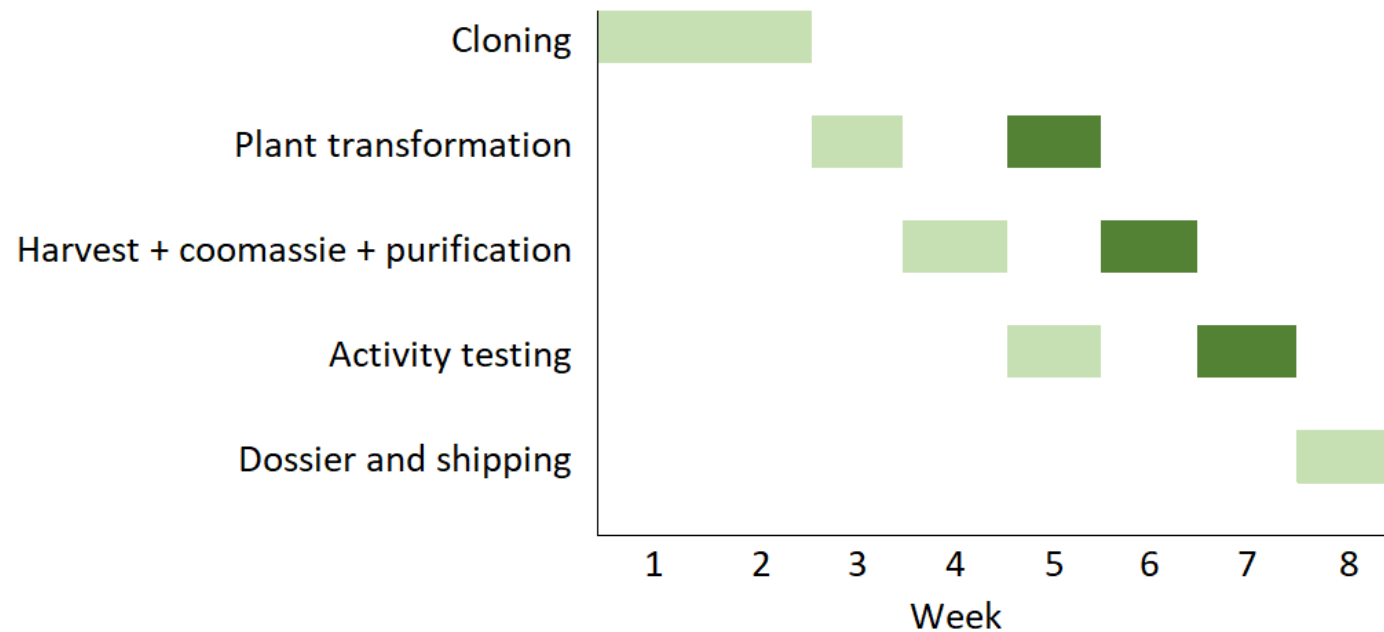
Agro...	Agroi...	Agro...	Agro OD	MIP Construct	Molecul...	N	Coll...	Mo...	D	P...	D.	S...
A0727	13/6/2025	C58	0.1000	pLX-B2_alpha2_TMV_prSP:LA	LAP:TGF:6xHis	1	18/6/2025	Syringe	30	L63.1	5	14/5/2...
A0728	13/6/2025	C58	0.1000	pLX-B2_alpha2_TMV_prSP:LA	LAP:TGF:6xHis	1	18/6/2025	Syringe	30	L63.1	5	14/5/2...
A0729	13/6/2025	C58	0.1000	pLX-B2_alpha2_TMV_prSP:LA	LAP:TGF:6xHis	1	18/6/2025	Syringe	30	L63.1	5	14/5/2...
A0730	13/6/2025	C58	0.1000	pLX-B2_alpha2_TMV_prSP:LA	LAP:TGF:6xHis	1	18/6/2025	Syringe	30	L63.1	5	14/5/2...
A0731	18/6/2025	EHA101	0.0600	pLX-B2_alpha1_TMV_SP:PST:	EGF	3	25/6/2025	Syringe	35	L63.1	7	14/5/2...
A0732	18/6/2025	EHA101	0.0600	pLX-B2_alpha1_TMV_SP:PST:	modEGF	4	25/6/2025	Syringe	35	L63.1	7	14/5/2...
A0733	26/6/2025	EHA101	0.0100	pLX-B2_alpha1_TMV_SP:PST:	EGF	11	3/7/2025	Syringe	30	L64	7	27/5/2...
A0734	26/6/2025	EHA101	0.0100	pLX-B2_alpha1_TMV_SP:PST:	modEGF	5	3/7/2025	Syringe	30	L64	7	27/5/2...
A0735	26/6/2025	EHA101	0.0600	pLX-B2_alpha2_TMV_SP:FSB:	FSB:6xH	7	3/7/2025	Syringe	30	L64	7	27/5/2...
A0736	26/6/2025	EHA101	0.1000	pLX-B2_alpha2_TMV_SP:FSB:	FSB:6xH	13	3/7/2025	Syringe	30	L64	7	27/5/2...

Purif. ID	MIP Construct	Purificat...	Resin	Agro ID	Sta...	# total ug...	# u...	Image
P0518	pLX-B2_alpha1_TMV_SP:PST:EGF	13/6/2025	Cytiva - Protein Select...	A0719	10.63	120,00	1	
P0519	pLX-B2_alpha1_TMV_SP:PST:EGF	30/6/2025	Cytiva - Protein Select...	A0731	24.90	360,00	2	
P0520	pLX-B2_alpha1_TMV_SP:PST:modEGF	25/6/2025	Cytiva - Protein Select...	A0732	17.90	90,00	1	
P0521	pLX-B2_alpha2_TMV_SP:FSB:6xHis	28/7/2025	Cytiva - HisTrap FF 5 ml	A0737	400.00	5.300,00	1	
P0522	pLX-B2_alpha2_TMV_EGF:6xHis	20/8/2025	Cytiva - HisTrap™ Fast ...	A0747	49.60	1.540,00	1	



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Protein manufacturing timeline

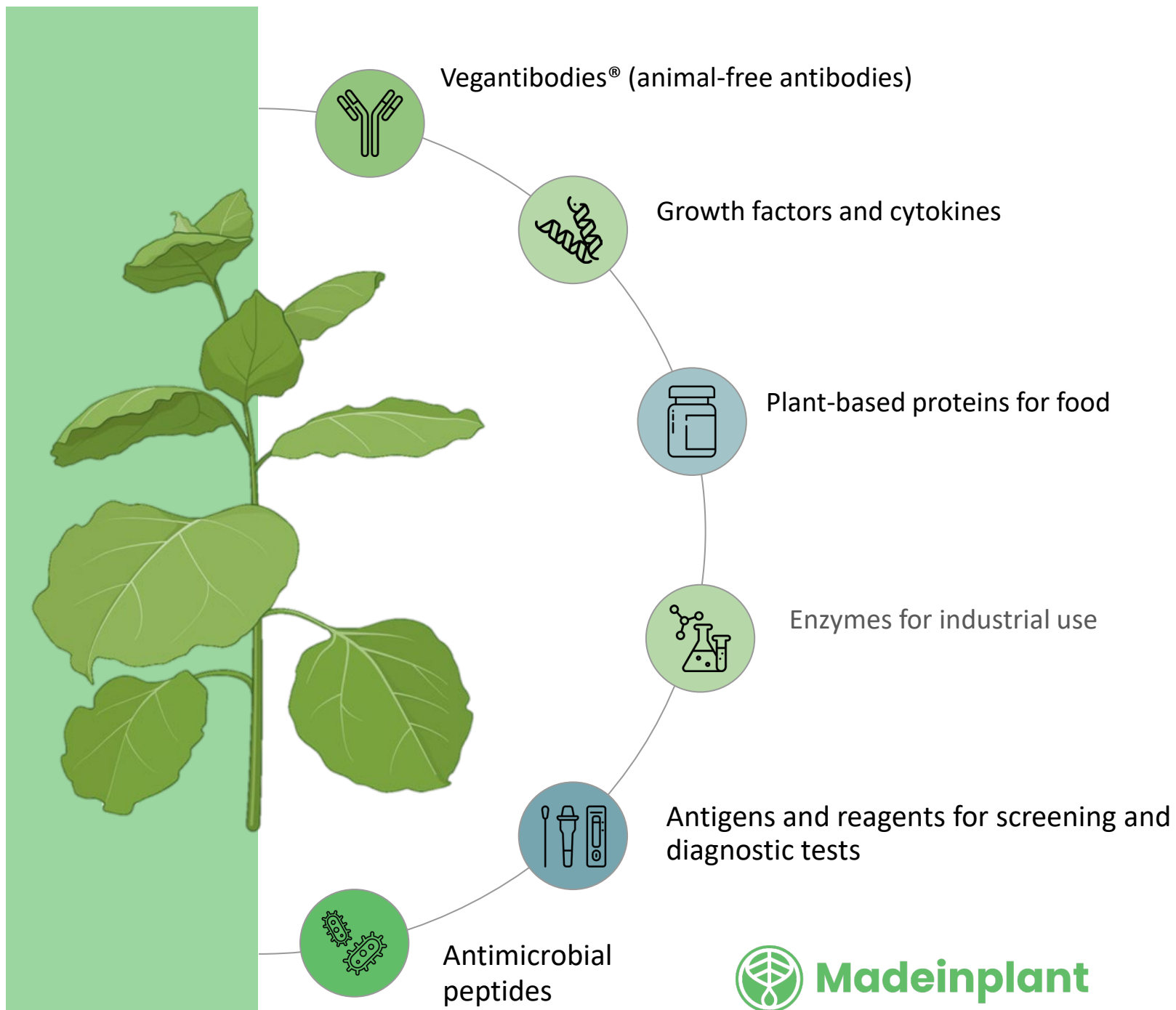


The proposed project timeline is an estimate and may be subject to changes depending on experimental outcomes, including the efficiency of cloning, expression, and purification steps



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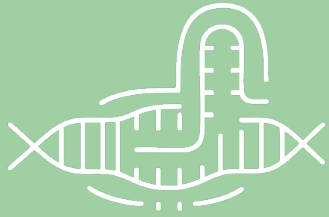
Product portfolio





Plant biotechnology tools

Madeinplant's technology



CRISPR-Cas
proteins



GoldenBraid
Pro



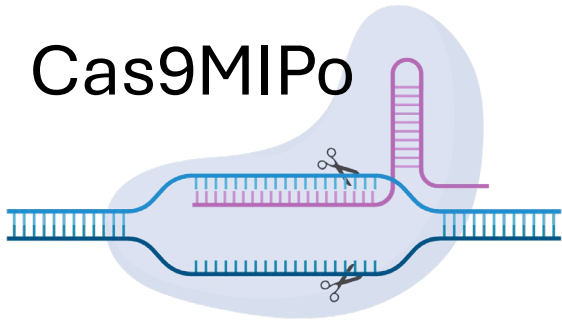
Mini-binary
vectors



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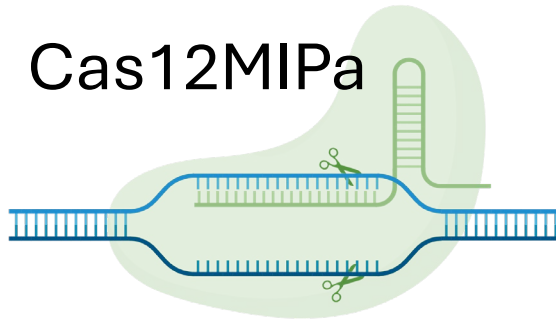
Alternative CRISPR/Cas proteins

Cas9MIPo



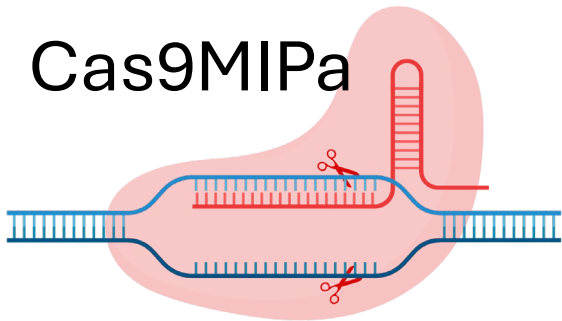
Origin: Deep sea exploration

Cas12MIPa

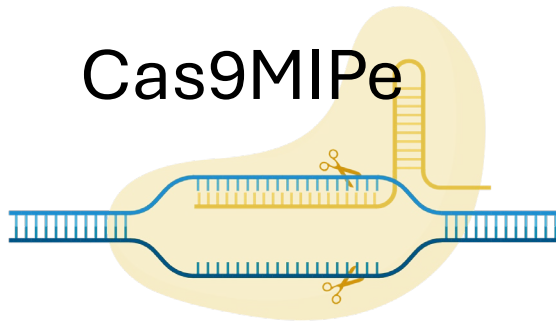


Origin: Mediterranean lagoon

Cas9MIPa



Cas9MIPe



Our CRISPR/Cas proteins have been isolated by fellow Spanish researchers in uncommon places, identifying low temperature proteins better suited for gene editing in plants

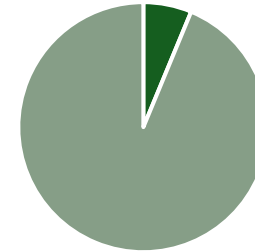
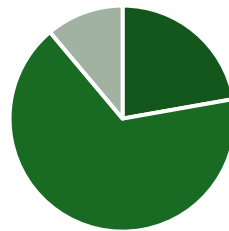
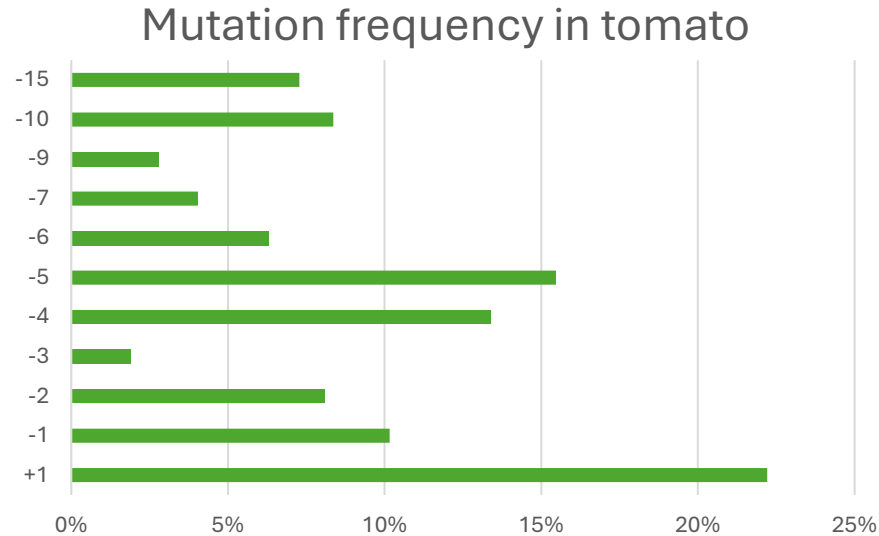
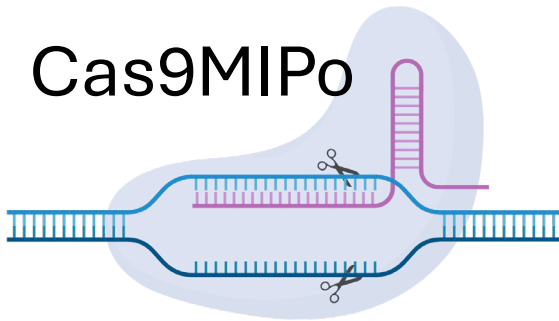
Exclusive license for plant use

Freedom to operate for variety commercialization



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Alternative CRISPR/Cas proteins

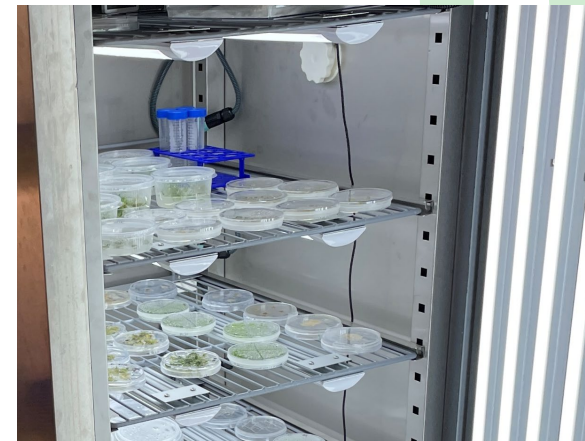


■ Monoallelic editing
■ Biallelic editing
■ Unknown

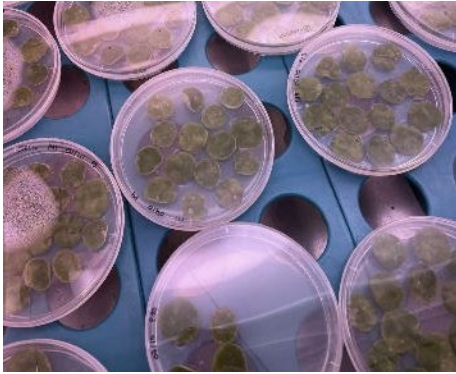
■ Transgenic & non-edited
■ Transgenic & edited

Editing traits and species

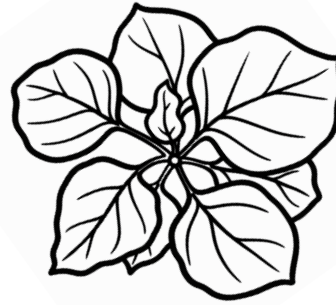
TRAIT	Species
Biofortification (↑ carotenoids, vitamin E, provitamin A)	Tomato
Disease tolerance	Tomato, rice
Color	Tomato
Yield	Rice
Root size	Rice
Seedless	Citrus



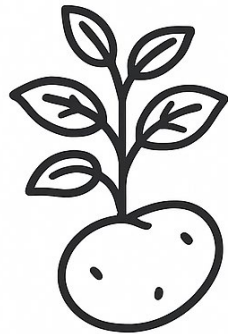
Expertise in transformation & regeneration



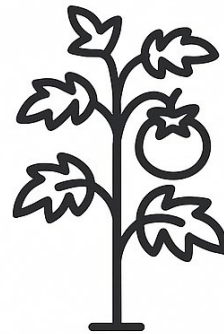
Tobacco



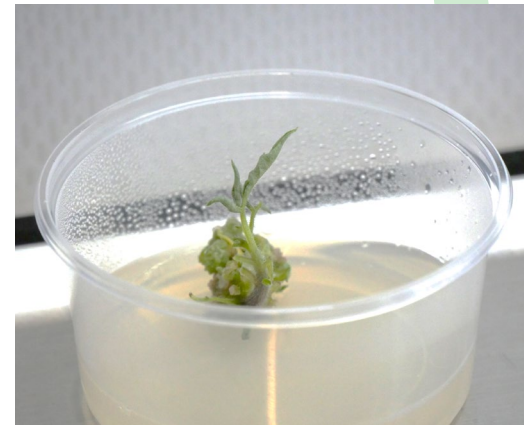
Benthamiana



Potato



Tomato



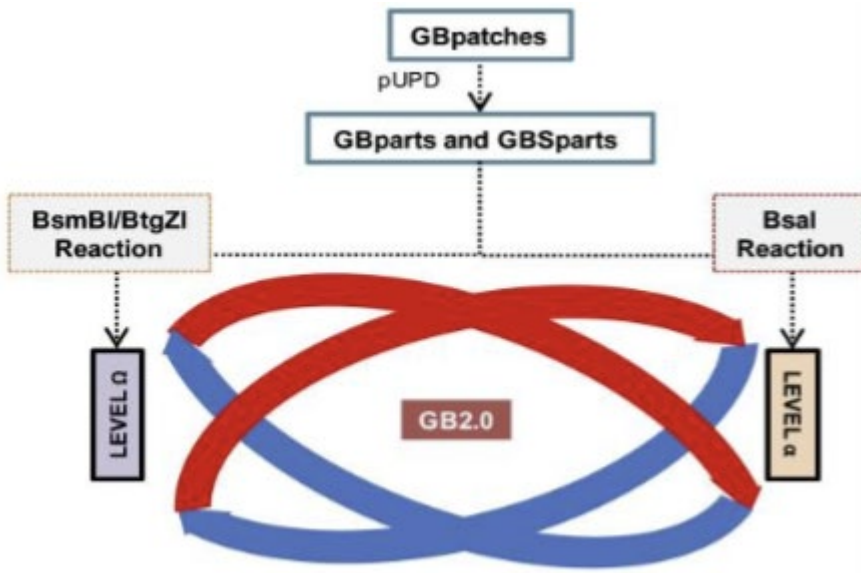
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GoldenBraid Pro

Modular cloning platform developed by the Plant Genomics and Biotechnology Lab of the IBMCP (CSIC)

Type IIS restriction enzyme system (e.g., BsaI, BsmBI), which cut outside their recognition sites, generating user-defined sticky ends. This allows efficient one-tube assembly using T4 ligase, with removal of restriction sites during assembly. The result: seamless or near-seamless constructs

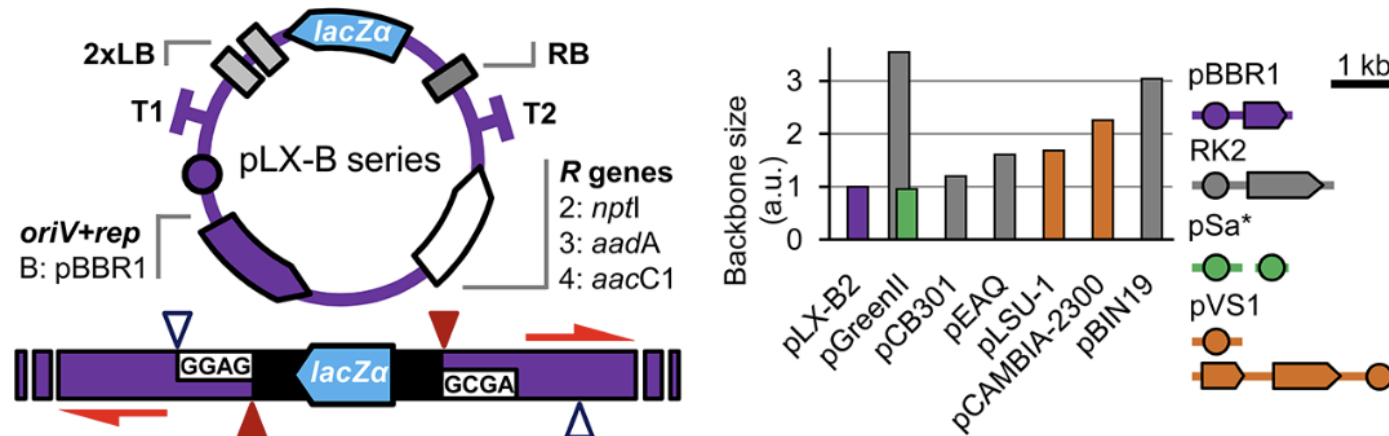
Its symmetrical double-loop (“braid”) design includes two sets of inverted restriction sites in all plasmids. This allows first-level expression plasmids to become input plasmids for second-level assemblies and viceversa, resulting in indefinite expansion of genetic modules via binary iterative assembly



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Mini binary vectors pLX

- Reduced size (~3 kb): facilitates cloning & allows for larger inserts
- Replication in *E. coli* and *Agrobacterium*



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At Madeinplant we provide expert guidance throughout the entire genome editing pipeline:

- Target identification
- Design of genetic constructs
- Implementation in crops
- Regulatory permit applications
- Field trial management
- Audit monitoring and compliance
- Variety registration and protection



A green biotech company manufacturing a green future



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UNIVERSITAT DE VALÈNCIA



UNIVERSITAT
DE VALÈNCIA

**Madeinplant**
Your partner in New Genomic Techniques



**Biofortification
of traditional
Muchamiel
tomato**

New colors.
New compounds.
New nutritional properties.



**Madeinplant**
Your partner in New Genomic Techniques

**Your varieties.
Our NGT expertise.**

Together, we breed what's next.

We support seed companies and plant breeders in developing better varieties using **New Genomic Techniques**.

BEYOND TECHNOLOGY

**REGULATORY
SUPPORT**

**GREENHOUSE &
FIELD VALIDATION**

**VARIETAL
REGISTRATION**

INDEPENDENT NGT TOOLBOX

**EXCLUSIVE AND
PROPRIETARY TOOLS**

**MULTIPLE EDITING
SYSTEMS**

**CROP-SPECIFIC
SOLUTIONS**

**NEW
EU NGT
REGULATION**
Full alignment with the new
EU regulatory framework



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