

COLLABORATING TO EMPOWER YIELD IMPROVEMENTS

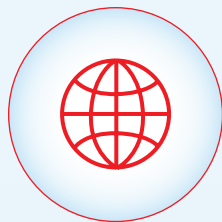
OPTIMIZING YOUR
GENOTYPING WORKFLOW



Sigma-Aldrich's chemistry expertise can help customers develop and optimize their entire genotyping workflow to reduce cost per data point while increasing throughput rates.

Our global distribution network provides regional availability, making us the perfect partner to ensure you receive consistent and reliable products.

A PARTNER YOU CAN TRUST



GLOBAL PARTNERSHIP



QUALITY



PRODUCTS



CAPABILITIES





Global Locations Enable a True Global Partnership

Global Presence

With 9,300 employees across 37 countries, Sigma-Aldrich has the personnel, infrastructure and facilities to meet your needs throughout the world.

Global Regulatory Knowledge

Working with a partner who understands your manufacturing and regulatory requirements is key to ensuring supply chain reliability.

Global Supply Chain

Sigma-Aldrich allows researchers to standardize reagents across multiple locations by using a single lot of material. We can utilize our global distribution capabilities and real-time inventory tracking to ensure reagents are available where and when you need them.

~40

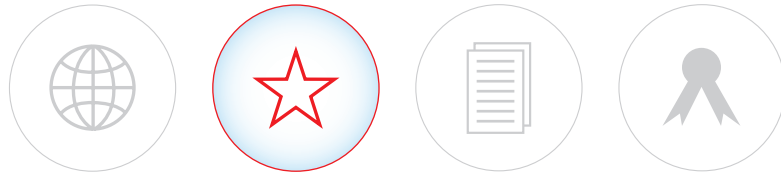
Manufacturing Sites Globally

75

Distinct Chemical & Biological Processes

>50,000

Recipes



A Leading Supplier Delivering Unrivaed Quality

Meet and Exceed Quality Expectations

Sigma-Aldrich achieves its quality goal by establishing and maintaining systems and processes at every level – global, regional and local. Each Sigma-Aldrich employee is committed to improving the customer experience by delivering world class products, technologies and services.

Quality Assurance (QA)

Quality assurance encompasses the compliance and certification standards that Sigma-Aldrich is required to put in place for adherence to customer and regulatory control requirements.

Quality Trends

Trends from customers and regulatory requirements continue to shape our approach, such as:

- More disciplined change management control
- Improved traceability through the supply base
- More requests for document and investigation support

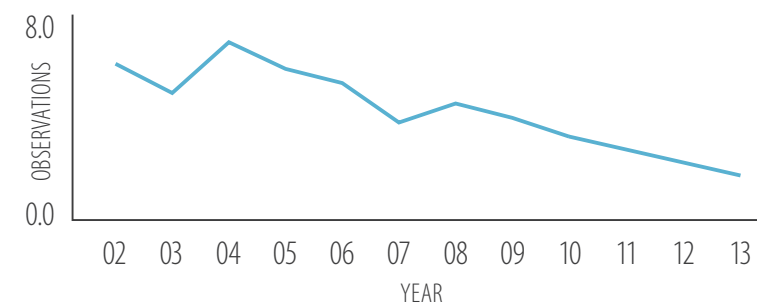
700
QA/QC Employees

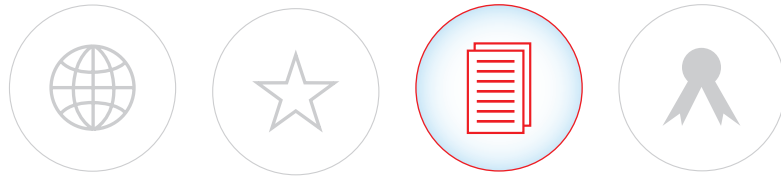
9
Unique Quality Certifications

44
QC Laboratories

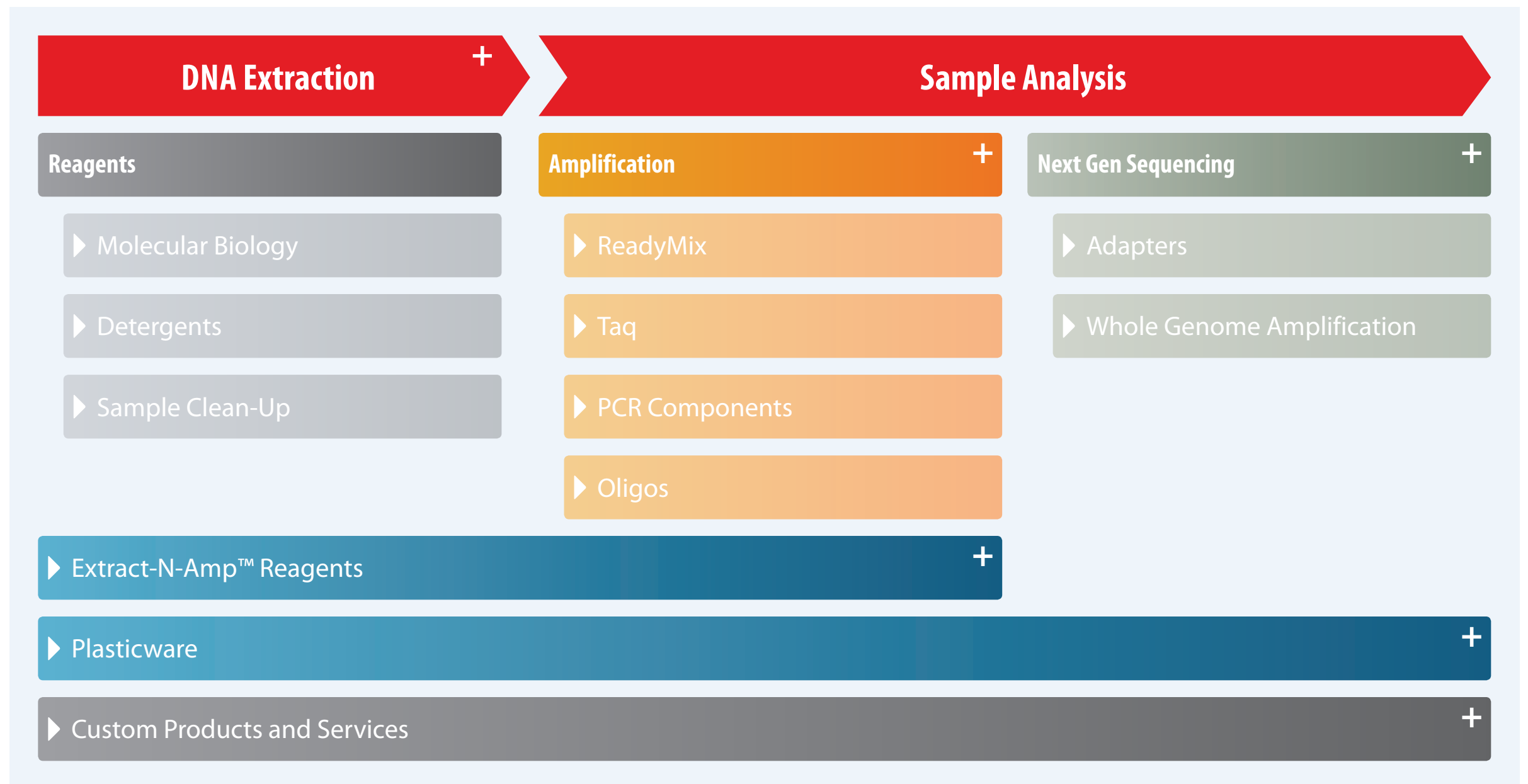
450
Audits /Yr

CUSTOMER OBSERVATIONS PER AUDIT





Products Across the Genotyping Workflow





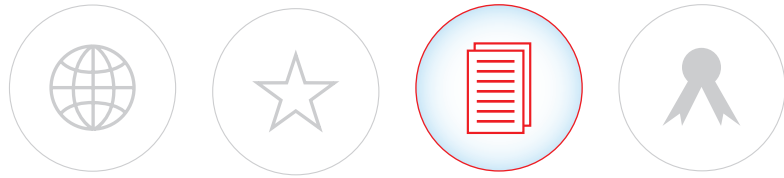
DNA Extraction Products

Sigma-Aldrich offers a range of comprehensive, off-the-shelf solutions to enable sample preparation. An optimized DNA extraction requires high purity reagents and chemicals for maximum performance.

Highlighted below are key products frequently used in the extraction of DNA from crop samples for genotyping. For a comprehensive list [click here](#).

Cat. No.	Product Name
72068	Sodium Hydroxide Solution
PVP40	Polyvinylpyrrolidone
P1190	Potassium Acetate
P5708	Potassium Acetate
S5150	Sodium Chloride Solution
T2944	Trizma® Hydrochloride Solution, pH 7.5
T3038	Trizma® Hydrochloride Solution, pH 8.0
71725	Sodium Dodecyl Sulfate, Sodium Salt
71736	Sodium Dodecyl Sulfate, 10% in H ₂ O

Cat. No.	Product Name
49767	Glycerol
G9277	Guanidine Thiocyanate
G2580	Sephadex® G-25
P2069	Phenol:Chloroform:Isoamyl Alcohol 25:24:1 (Saturated with 10 mM Tris, pH 8.0, 1 mM EDTA)
P3803	Phenol:Chloroform:Isoamyl Alcohol 25:24:1
C0549	Chloroform:Isoamyl Alcohol 24:1
E7023	Ethanol, 200 Proof

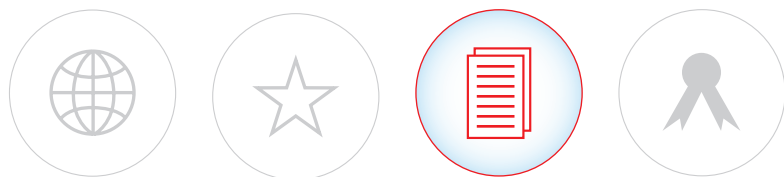


DNA Amplification Products

Developing the best germplasm into new hybrids is both the most practical and competitive process to identify desired traits and increase overall yield. The genetic mapping of quantitative traits has been critically important for yield increases in row crops and has progressed into fruit and vegetable breeding programs around the world.

Sigma-Aldrich's products for DNA amplification serve marker-assisted breeding efforts including SNP genotyping, marker detection, and allelic discrimination.



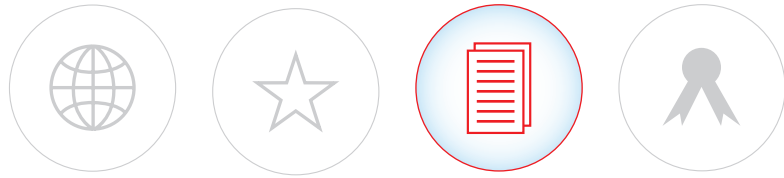


DNA Amplification Products

Cat. No.	Product Name
Master Mix	
P4600	ReadyMix™ Taq PCR Reaction Mix
R2523	REDTaq® ReadyMix™ PCR Reaction Mix
P2893	JumpStart™ Taq ReadyMix™
P0982	JumpStart™ REDTaq® ReadyMix™ Reaction Mix
P1107	JumpStart™ REDTaq® ReadyMix™ Reaction Mix , for High-throughput PCR
S4438	SYBR® Green JumpStart™ Taq ReadyMix™, with MgCl ₂
S5193	SYBR® Green JumpStart™ Taq ReadyMix™, without MgCl ₂
L6544	LuminoCt® SYBR® Green qPCR ReadyMix™
D7440	JumpStart™ Taq ReadyMix™ for Quantitative PCR
D6442	JumpStart™ Taq ReadyMix™ for High Throughput Quantitative PCR
L6669	LuminoCt® qPCR ReadyMix™

Cat. No.	Product Name
Taq Polymerase	
D1806	Taq DNA Polymerase from <i>Thermus aquaticus</i> , with MgCl ₂
D4545	Taq DNA Polymerase from <i>Thermus aquaticus</i> , without MgCl ₂
D4309	REDTaq® DNA Polymerase
D8312	REDTaq® Genomic DNA Polymerase, with MgCl ₂
D2812	REDTaq® Genomic DNA Polymerase, without MgCl ₂
D9307	JumpStart™ Taq DNA Polymerase, with MgCl ₂
D4184	JumpStart™ Taq DNA Polymerase, without MgCl ₂
D1313	JumpStart™ REDAccuTaq® LA DNA Polymerase
Supplemental Reagents	
P2317	10X PCR Buffer without MgCl ₂
P2192	10X PCR Buffer
M8787	Magnesium Chloride Solution
D7295	Deoxynucleotide Mix, 10 mM
B0300	Betaine Solution
D9170	Dimethyl Sulfoxide

[MORE PRODUCTS >](#)



Custom Nucleic Acid Synthesis

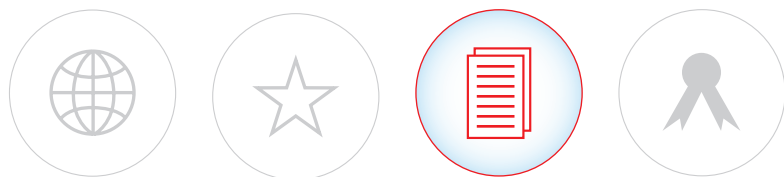
Design and synthesis of primers and probes for high-throughput genotyping applications.

Products include:

- DNA Oligos
- Oligos in Plates for High-Throughput Applications
- Modified Oligos
- NGS Adapters
- qPCR Probes
- Primer and qPCR Probe Design

With manufacturing sites in 10 countries – Australia, Canada, France, Germany, India, Israel, Japan, Singapore, UK, and USA – our global customers receive consistent high-quality products, no matter where their research happens.



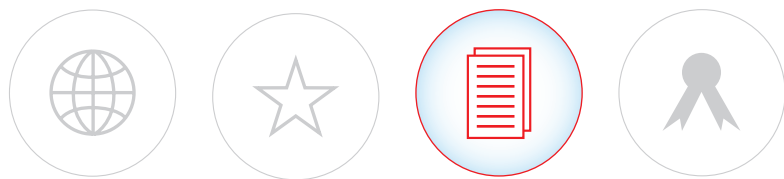


Extract-N-Amp™ Products

Sigma-Aldrich pioneered plant DNA extraction with our proprietary Extract-N-Amp products that provide an optimized extraction and amplification method to meet your needs. Extract-N-Amp PCR kits are an integrated extraction and amplification process for rapid plant and seed analysis that is amenable to high-throughput applications. For more information on our Extract-N-Amp products, [click here](#).

Cat. No.	Product Name
Extract-N-Amp	
XNAPR	REExtract-N-Amp™ Plant PCR Kit
XNAP2	Extract-N-Amp™ Plant PCR Kit
XNAS2	Extract-N-Amp™ Seed PCR Kit
E3004	Extract-N-Amp™ PCR ReadyMix™
R4775	REExtract-N-Amp™ PCR ReadyMix™
E0781	Extract-N-Amp™ PCR ReadyMix™ with qPCR Reference Dye



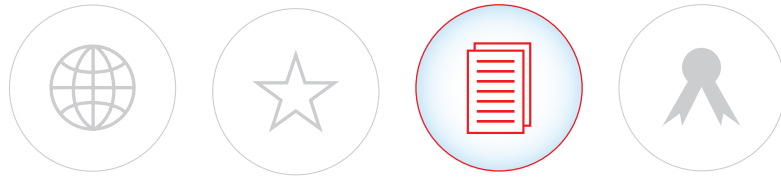


Plasticware Products

Sigma-Aldrich is committed to providing high-quality, reliable plasticware products to help you achieve your genotyping goals rapidly and reliably. With increasingly sensitive detection methods, researchers rely even more on ever higher quality from lab disposables. Highlighted below are some of our key plasticware products, to view our entire product offering [click here](#).

Cat. No.	Product Name
96 Well-Plates	
CLS6509	Corning® Thermowell PCR 96 well plates
CLS6551	Corning® Thermowell PCR 96 well plates
CLS6511	Corning® Thermowell PCR 96 well plates
CLS3752	Corning® Thermowell GOLD PCR 96 well plates
CLS3758	Corning® Thermowell GOLD PCR 96 well plates
CLS3754	Corning® Thermowell GOLD PCR 96 well plates
Z374903	PCR multiwell plates, 96 well plate for PCR
Z711055	Greiner 96 well plates
Z711063	Greiner 96 well plates

Cat. No.	Product Name
384 Well-Plates	
CLS3757	Corning® Thermowell GOLD PCR 384 well plates
CLS3756	Corning® Thermowell GOLD PCR 384 well plates
Z374911	PCR multiwell plates, 384 well PCR plate
1536 Well-Plates	
CLS3891BC	Corning® 1,536 well plate
CLS3731BD	Corning® 1,536 well plate
CLS3831BC	Corning® 1,536 well plate
Sealants	
CLS6570	Corning® microplate sealing tape
Z721549	AlumaSeal® 96 film
Z721530	AlumaSeal® II film
Z369675	ThermalSeal® films, classic



Library Preparation for Next Generation Sequencing

Custom primers and adapters for plant genotyping protocols

Next generation sequencing (NGS) platforms dramatically increase the rate of acquiring genomic and genotypic information, allowing for faster and more accurate breeding decisions. In order for these platforms to be a viable alternative to PCR-based genotyping, ideal operating cost-efficiency must be realized.

Adapters

Collaborative relationships between customers and our team of technical experts have allowed us to:

- Develop a manufacturing process to produce low cost adapters
- Provide any number of adapters and bar coded adapters in custom plate configurations
- Produce adapters suitable for any NGS platform

Whole Genome Amplification

SeqPlex Enhanced DNA Amplification Kit for whole genome amplification (WGA) is designed to facilitate NGS from extremely small quantities or highly fragmented DNA. This kit is an extension of the GenomePlex® WGA product line and has been developed to integrate into Illumina®, Ion Torrent™, and other NGS workflows.

To learn more, [click here](#)



Custom Products and Services

Inevitably, your projects will face challenges that are unique. You may need a new reagent formulation to improve the efficiency of a process, or the assurance of critical chemicals screened with additional QC specifications.



Click here to inquire about custom products and services, or request a workflow optimization consultation

Our support beyond catalog products will help ensure your success. Learn more about our custom solutions:

- Custom manufacturing of your formulations
- Customized product packaging
- Bulk supply capabilities
- Custom specifications
- Global distribution
- Order management of scheduled shipments
- Clearly defined confidentiality and service agreements
- Workflow optimization

For More Information:



Visit our Genotyping Web Page



Request a Consultation

sigma-aldrich.com/agriculture