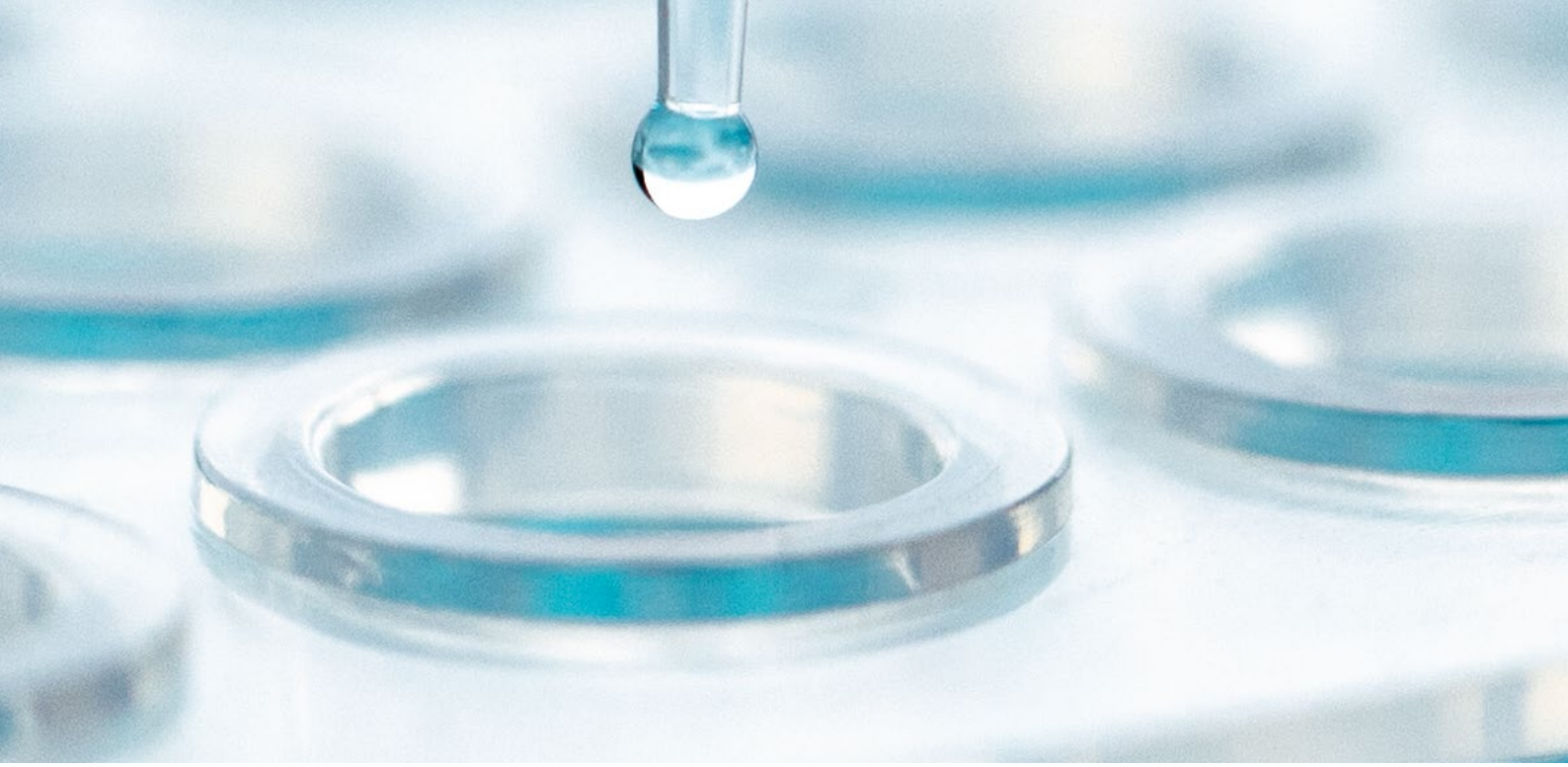

PCR & qPCR work areas

Алматы (7273)495-231
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
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Новосибирск (383)227-86-73
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Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
Пермь (342)205-81-47
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Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
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Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
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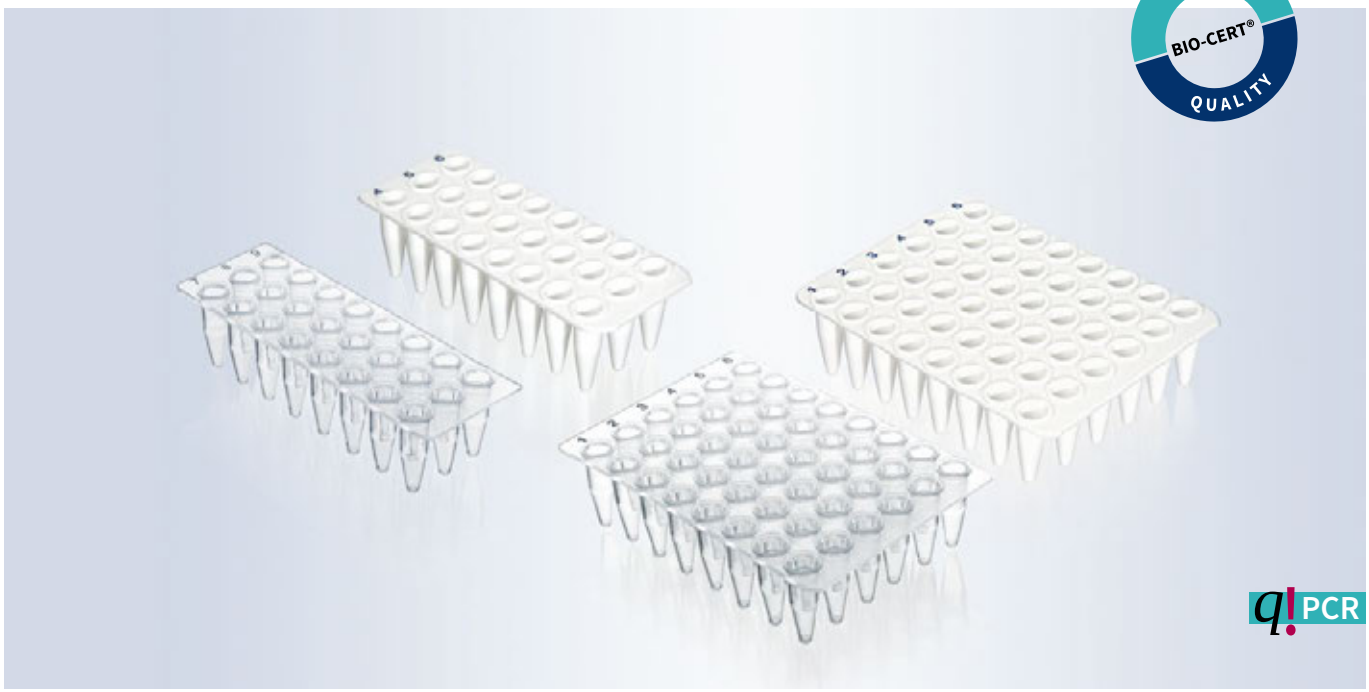
PCR plates for medium and high sample throughput

As new PCR methods become established all the time, the number of different tests completed is also growing. PCR is considered a standard process in many fields. In addition to processes with medium sample throughput, high throughput applications are becoming more and more common in order to save time and costs. Easy and secure handling is essential for managing growing sample quantities. Users are working to optimize processes and reduce the consumption of materials and reagents.

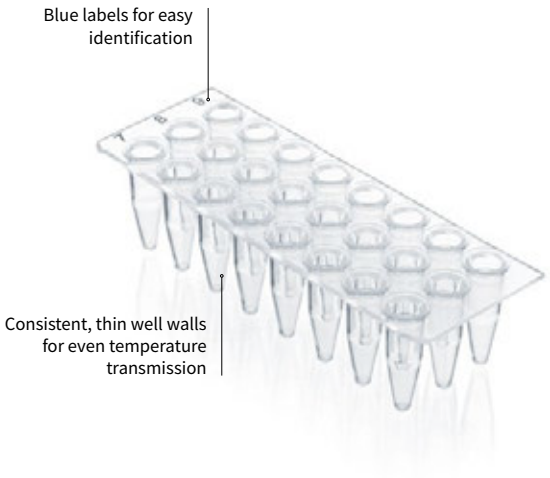
BRAND offers ideal consumable materials for high throughput analysis, thanks to its wide-ranging product portfolio of PCR plates. Extra thin walls, smooth surfaces to avoid sample loss due to interaction with the material, and different colors and shapes are ideal for use in a broad spectrum of applications and equipment. Their standardized ANSI/SLAS format allows them to be used in all commonly available cyclers.

24-well | 48-well PCR plates



- ✔ **Compact format fits all common thermal cyclers**
- ✔ **Raised well edges protect against cross-contamination**
- ✔ **Rapid heat transfer through thin vessel walls**

With 24- and 48-well PCR plates, you can handle medium sample volumes with ease. The compact format works with all common thermal cyclers and provides easy handling compared to strips or single tubes.
To avoid cross-contamination from well to well, the edges of the wells are slightly raised so that you always obtain reliable results. Thin vessel walls ensure rapid temperature transfer for short cycle times.
The cleanroom quality of PCR consumables from BRAND guarantees reliable results.



Applications

+ Tests using medium sample sizes
+ Testing different primer variants
+ Small sample throughput with a large number of repetitions

Features

+ Made of pure polypropylene
+ Extra-thin walls for fast temperature transmission
+ Tight sealing with cap strips and film strips
+ Compatible with all commonly available cyclers
+ For use with multichannel pipettes

User information

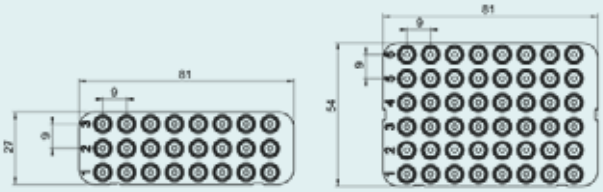
- The plates allow for work even with small sample throughput thanks to their compact design. This provides the perfect balance between efficiency and ease of handling.
- Unique alphanumeric codes prevent mix-ups.
- The plates can be sealed using cap strips or sealing film strips. Closing individual rows reduces the risk of mix-ups and contamination.
- To ensure an optimal plate format with a small number of samples, non-skirted PCR plates can be cut using regular scissors.

We advise against autoclaving PCR products. Autoclaving can be a source of contamination for disposable products.

Technical information & Ordering data

24-well and 48-well plates, non-skirted

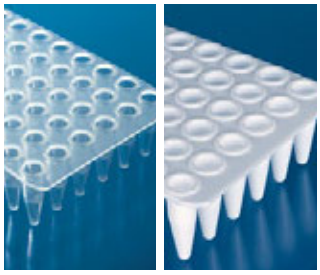
- Compact standard format fits all commonly used thermocyclers with a heated lid
- Free from DNA, RNAse, pyrogens and PCR inhibitors
- Easy to seal with 8-cap strips or sealing film strips



24-well, non-skirted, standard profile

Type	standard	standard
Well rim	not elevated	not elevated
Color	transparent	white
Volume [ml]	0.2	0.2
Pack of	40 pieces (5 plates per bag)	40 pieces (5 plates per bag)
Cat. No.	781411	781412

48-well, non-skirted, standard profile

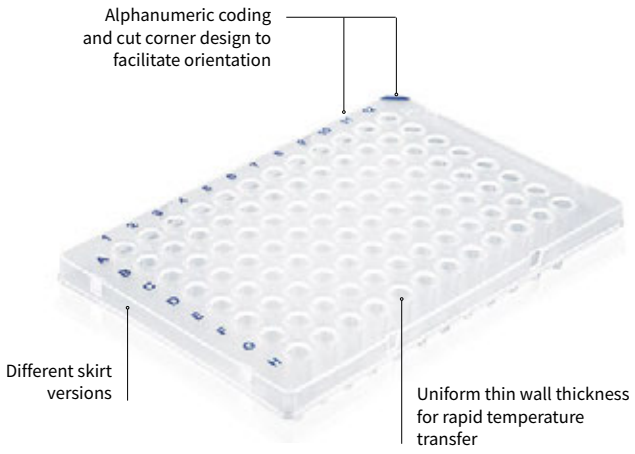


Type	standard	standard
Well rim	not elevated	not elevated
Color	transparent	white
Volume [ml]	0.2	0.2
Pack of	40 pieces (5 plates per bag)	40 pieces (5 plates per bag)
Cat. No.	781415	781416

96-well PCR plates

- ✔ **Rapid heat transfer through thin vessel walls**
- ✔ **Suitable for all standard thermal cyclers**
- ✔ **Tightly sealable to protect against evaporation and contamination**

For medium and high sample throughput, 96-well plates from BRAND are the efficient solution for PCR and qPCR, and can be conveniently filled using multichannel pipettes or pipetting robots.
The uniform and thin wall thicknesses of the wells ensure rapid transfer of the temperature from the cycler to the sample, thus reducing cycle times.
A number of skirt choices ensures a good fit in common thermal cyclers for efficient heat transfer. For qPCR, white plates are available that optimally reflect the fluorescence signals.



Applications

+ Use for high throughput analyses
+ Use in automated process sequences
+ Method testing with 2D gradient PCR
+ PCR arrays

Features

+ Made of PP in low profile or standard profile
+ Available with different skirt options and in white or transparent
+ Elevated well rim available to prevent well to well contamination
+ Smooth interior surfaces for minimal interactions

User information

- To achieve accurate and consistent results throughout the entire plate, the plates must fit the cycler exactly. The plates must be tightly sealed to prevent evaporation.
- The right profile and skirt version must be selected depending on the cycler used.

Which plate is right for my application?

With the large number of plates and cyclers available on the market, it can be difficult to choose. However, you should primarily choose your plate based on the cycler you are using. The compatibility table provides an overview of tested combinations, which can help you quickly find the right plate for your cycler:

We advise against autoclaving PCR products. Autoclaving can be a source of contamination for disposable products.

Standard or low profile?

- Standard profile: These tubes fit into most classic thermocyclers, real-time PCR detection systems and sequencers.
- Low profile: The reduced air space above the PCR solution reduces evaporation. This ensures reaction conditions remain more constant during thermocycling than in standard profile tubes, particularly for low volumes of solution (≥ 20 µl). At the same time, these tubes also offer advantages in terms of light transmission during fluorescence assays, low volume, and fast PCR applications.

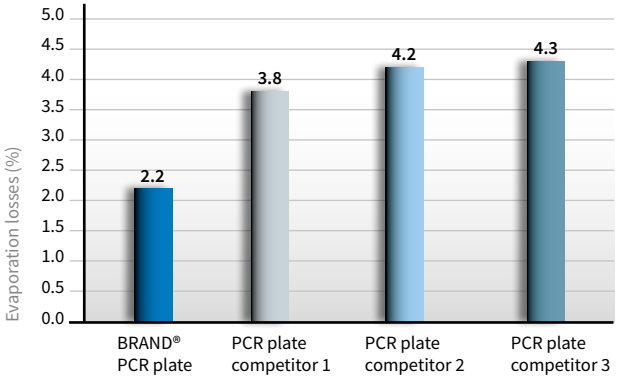
Application Note

Improved sealing surface of PCR plates from BRAND to support reliable evaporation protection

Author: BRAND GMBH + CO KG

The selection of proper material and surface finishing have an important influence on the sealing properties of PCR plates. It's not only important to select quality sealing films, but considering PCR plate design also can improve results for sample recovery during PCR. Design features such as a planar surface, and uniform plate and well thickness are essential for proper sealing and to the minimization of evaporative losses. In addition, the improved adhesion of sealing films support sample preservation. This technical note compares the attachment qualities of the Real-Time PCR sealing film (#781391) with corresponding PCR plates from several manufacturers and having different physical characteristics.

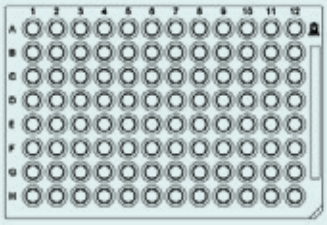
Evaporation losses of different PCR plates during PCR, sealed with adhesive sealing film:



Technical information & Ordering data

96-well plate, non-skirted

- Maximum variability in cycler selection
- Good plate stability thanks to a reinforced base plate
- Quick sample identification with alphanumeric codes in contrasting colors



96-well, non-skirted, low profile

Type	low profile	low profile
Well rim	not elevated	not elevated
Color	transparent	white
Volume [ml]	0.15	0.15
Cut corner	H12	H12
Pack of	50 pieces (5 plates per bag)	50 pieces (5 plates per bag)
Cat. No.	781366	781367

96-well, non-skirted, standard profile

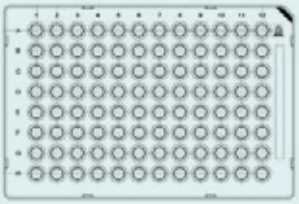
Type	standard	standard
Well rim	not elevated	not elevated
Color	transparent	white
Volume [ml]	0.2	0.2
Cut corner	A12	A12
Pack of	50 pieces (5 plates per bag)	50 pieces (5 plates per bag)
Cat. No.	781368	781369

96-well, non-skirted, standard profile, elevated rim

Type	standard	standard
Well rim	elevated	elevated
Color	transparent	white
Volume [ml]	0.2	0.2
Cut corner	H12	H12
Pack of	50 pieces (5 plates per bag)	50 pieces (5 plates per bag)
Cat. No.	781350	781354

96-well plates, semi-skirted

- Reliable sample identification with colored alphanumeric codes
- Semi-skirted plates are suitable for labeling or applying a bar code
- Optimized surface texture for reliable closure with self-adhesive sealing film



96-well, semi-skirted, low profile

Type	low profile	low profile
Well rim	not elevated	not elevated
Skirt	standard	standard
Color	transparent	white
Volume [ml]	0.15	0.15
Cut corner	A12	A12
Pack of	50 pieces (5 plates per bag)	50 pieces (5 plates per bag)
Cat. No.	781371	781372

Type	low profile	low profile
Well rim	not elevated	not elevated
Skirt	raised	raised
Color	transparent	white
Volume [ml]	0.15	0.15
Cut corner	A1	A1
Pack of	50 pieces (5 plates per bag)	50 pieces (5 plates per bag)
Cat. No.	781373	781374

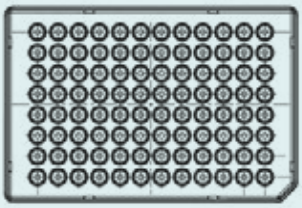
96-well, semi-skirted, standard profile

Type	standard	standard
Well rim	not elevated	not elevated
Skirt	standard	standard
Color	transparent	white
Volume [ml]	0.2	0.2
Cut corner	A12	A12
Pack of	50 pieces (5 plates per bag)	50 pieces (5 plates per bag)
Cat. No.	781375	781376

Type	standard	standard
Well rim	elevated	elevated
Skirt	standard	standard
Color	transparent	white
Volume [ml]	0.2	0.2
Cut corner	H12	H12
Pack of	50 pieces (5 plates per bag)	50 pieces (5 plates per bag)
Cat. No.	781400	781357

96-well plates, semi-skirted, for Roche LightCycler 480

- White PCR plate optimized for qPCR use in the Roche LightCycler 480
- Semi-skirted plates are suitable for labeling or applying a bar code

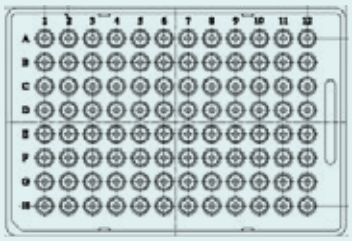


96-well, semi-skirted, low profile

Type	low profile	low profile
Color	white qPCR	white qPCR
Volume [ml]	0.15	0.15
Cut corner	H12	H12
Pack of	50 pieces (5 plates per bag)	50 pieces + 50 films for qPCR (781391)
Cat. No.	781364	781365

96-well plates, skirted

- Especially rigid for secure handling with robots and automated pipetting systems
- Available with bar code
- Optimized surface texture for reliable closure with self-adhesive sealing film



96-well, skirted, low profile

Type	low profile	low profile
Color	transparent	white
Volume [ml]	0.15	0.15
Cut corner	H1	H1
Pack of	50 pieces (10 plates per bag)	50 pieces (10 plates per bag)
Cat. No.	**781377**	**781378**

Cap strips can also be used for sealing purposes:
781413 (flat)
781414 (domed)

Application Note

Characterisation of antibodies with BRAND PCR plates

Author: AG Arndt/ Krauss
National Center for Tumor Diseases (NCT) Heidelberg
Im Neuenheimer Feld 460
69120 Heidelberg

As long as the laboratory has the correct primers available, colony PCR is a fast and established method to verify the gene of interest (GOI) within a colony-forming clone. Generally, it is sufficient to transfer a minimum number of cells from the colony into the PCR premix. However, these sensitive verification methods can be disrupted by low-quality PCR tubes and contamination by nucleic acids.

The application note “Characterization of antibodies with BRAND PCR plates” describes the use of this technique to identify clones that carry a desired GOI as an insert in the vector. Reactions occurred evenly throughout all of the wells of the BRAND 96-well PCR plate (#781375), allowing for unique identification of positive clones.

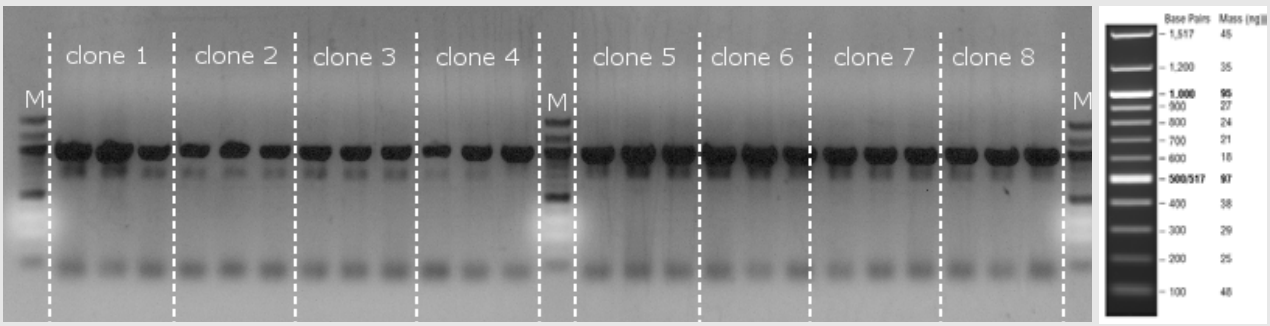
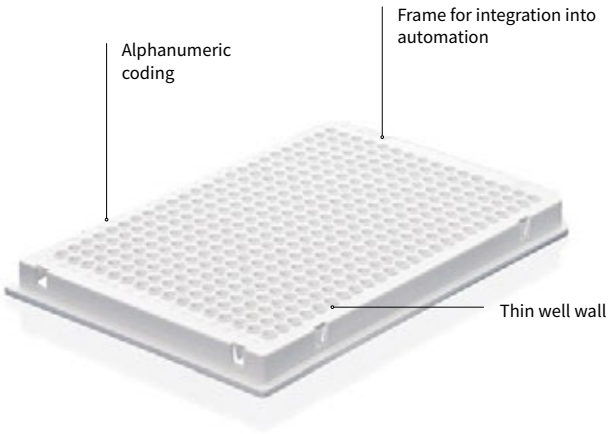


Image: Verification of the approx. 1kb insert in the vector of 8 transformed clones (E.coli).

384-well PCR plates

- ✔ For applications in automation and high-throughput analyses
- ✔ Rapid heat transfer through thin vessel walls
- ✔ Can be sealed reliably with self-adhesive sealing films

BRAND 384-well PCR plates are an economical solution for automated high-throughput analyses. The thin walls allow fast transmission of the temperature specified by the cycler, thus reducing cycle times.
The stable design of the plates makes them ideal for automation, as they can be gripped by robot systems without twisting.
To minimize evaporation with small sample volumes and to prevent contamination, seal the plates with the appropriate sealing film.



Applications

+ High throughput analyses
+ Automated process sequences
+ PCR arrays

Features

+ Made of PP in low profile
+ Compatible with most cyclers
+ 40 µl wells for use with sample volumes between 2 µl and 30 µl
+ Rigid edges for ideal hold in automated applications
+ Available with a bar code

User information

To achieve good results throughout the entire plate, the plates must fit the cycler exactly. The plates must be tightly sealed to prevent evaporation. This is the only way to obtain reliable results.

The right plate for your automated system:

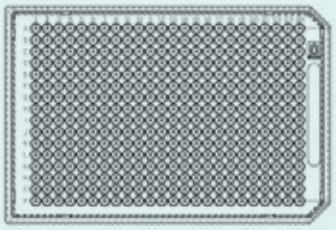
- Skirted plates allows the plate to be gripped with different gripper systems
- Rigid plates with reinforced covers provide increased stability
- All plates are low profile.

We advise against autoclaving PCR products. Autoclaving can be a source of contamination for disposable products.

Technical information & Ordering data

384-well plates, skirted

- Transparent wells for optimal control
- Especially rigid for secure handling with robots and automated pipetting systems
- Labels and coding for easy identification



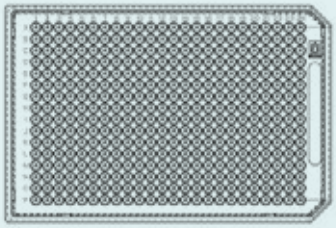
384-well, skirted

Type	low profile	low profile
Color	transparent	transparent
Volume [ml]	0.03	0.03
Cut corner	A24, P24	A24
Pack of	50 pieces (10 plates per bag)	50 pieces (10 plates per bag)
Cat. No.	**781345**	**781347***

* Manufacturing under controlled room conditions

384-well plates, skirted, for Roche Light Cycler

- White wells for better fluorescence measurement
- Optimal for Roche LightCycler 480 and comparable devices
- Labels and coding for easy identification



384-well, skirted, for Roche Light Cycler

Type	low profile
Color	white qPCR
Volume [ml]	0.03
Cut corner	A24, P24
Pack of	50 pieces (10 plates per bag)
Cat. No.	**781358**

Application Note

Higher sensitivity of qPCR reactions with BRAND 384-well PCR plates

Author: BRAND GMBH + CO KG

Introduction

In many laboratories transcriptase quantitative PCR has become a standard technique to correlate phenotypic observations not only with altered protein expression data but also with quantitative changes. The quality of results obtained by RT-qPCR depends on several factors, including, but not limited to, adequate primers for reverse transcriptase and qPCR response, proper RNA sample preparation and well-defined reference genes. However, the best experimental design will give poor results if external factors like malfunction of thermocyclers and inadequate PCR-vessels disturb the reaction.

Here we show, for example, that signal amplification is improved with white 384-well PCR plates from BRAND when compared with the white plates of another well-known manufacturer.

Material and Methods

Murine hippocampi were homogenized in peqGOLD RNAPure™ buffer (PeqLab) with TissueLyser (Qiagen). Total RNA was extracted using RNeasy Kit (Qiagen). cDNA was synthesized from 1 µg total RNA using iScript™ cDNA Synthesis Kit (Bio-Rad).

For RT-qPCR the following reaction was set up:

0.5 µl	Primer 5 µM
5 µl	SYBR®select (2X)
1 µl	cDNA
3 µl	H_2O
10 µl total	

SYBR® Green based gene expression reactions were loaded in triplicates in white 384-well PCR plates from BRAND (#781358) and a competitor. Plates were sealed with qPCR sealing films from BRAND (#781391). PCR was performed in the CFX384TM real-time PCR machine (Bio-Rad).

Results

In the two different white 384-well PCR-plates none of the PCR-reactions failed. However, signal intensity was much stronger in the BRAND plates when compared to the competitor.

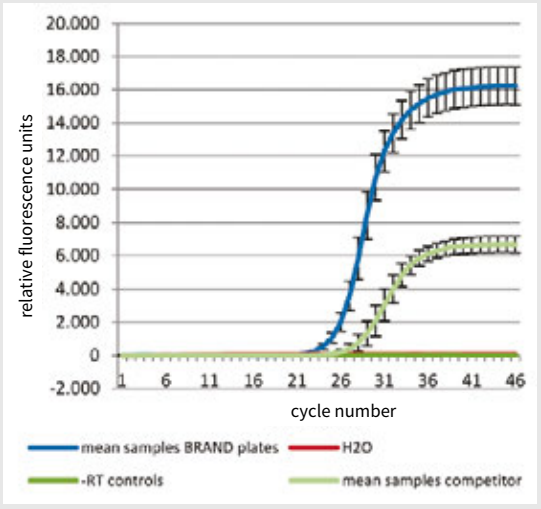


Figure:
Data show mean and standard deviation of 384 RT-qPCR results per plate.

Conclusion

RT-qPCR runs more efficiently in the white 384-well PCR-plates from BRAND in comparison with the plates from another well-known manufacturer as indicated by the slope and the plateau of the two different curves. This might be the result of optimized thin walled wells leading to a fast and homogenous thermal transfer, and by the use of raw materials from which less PCR-inhibiting substances could be released.

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