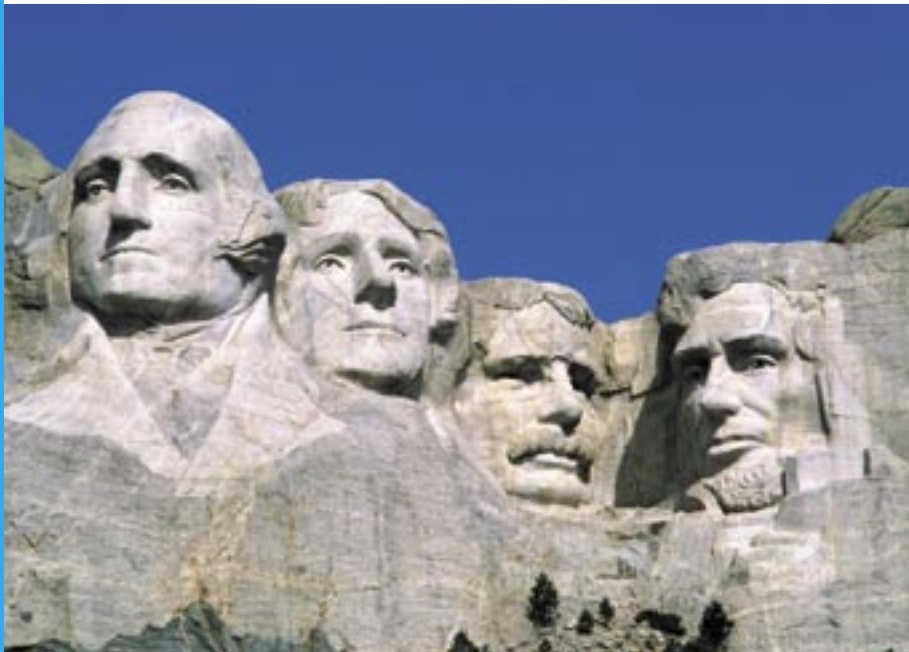


# CyBi<sup>®</sup>-Well vario

Brilliant Heads on a Solid Base



## Content

CyBi®-Well vario – More Pipetting Flexibility	3
The Solid Base	4
Your Volume Comfort	5
Change the head Secure head, secure accuracy	
Brilliant Heads	6
Tips	
A System of Flexibility	8
Because Precision Matters	9
One pipette head – optimize your task with different disposable tips Precision of the 96/25 µL pipette head Nanoliter head – precise, low-volume compound handling	
The Core of Integration	10
CyBio's RNAi-Systems	
Technical Data	11

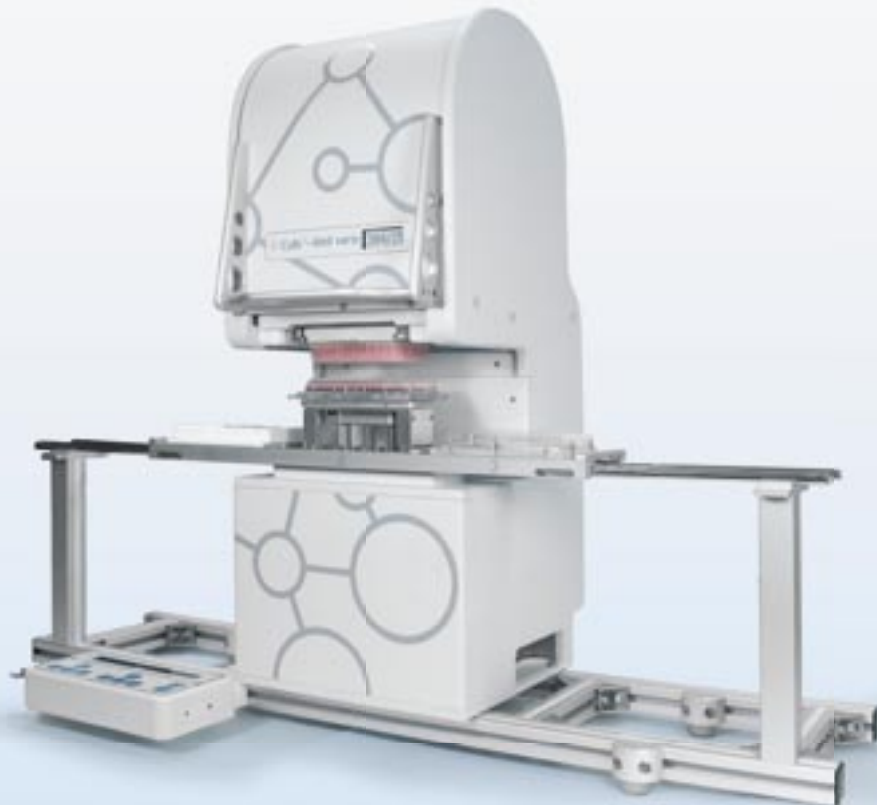
## CyBi®-Well vario – More Pipetting Flexibility

In many areas of research, automated equipment capable of performing pipetting operations simultaneously is needed to manage large numbers of samples and microplates. In addition, 96-, 384-, or 1536-well parallel pipetting plays a key role in increasing throughput for applications where a high level of productivity is crucial.

The CyBi®-Well vario is an automated, simultaneous pipetting platform, which accepts a series of different interchangeable pipetting heads, thus combining high flexibility with upgradeability for future tasks at a reasonable cost.

The CyBi®-Well vario handles your high-precision pipetting needs with the added advantage of interchangeable heads that can be changed easily in front or from the back of the pipettor. No need for any configuration steps are necessary since the CyBi®-Well vario software automatically detects the head change and recognizes the identity of the new head.

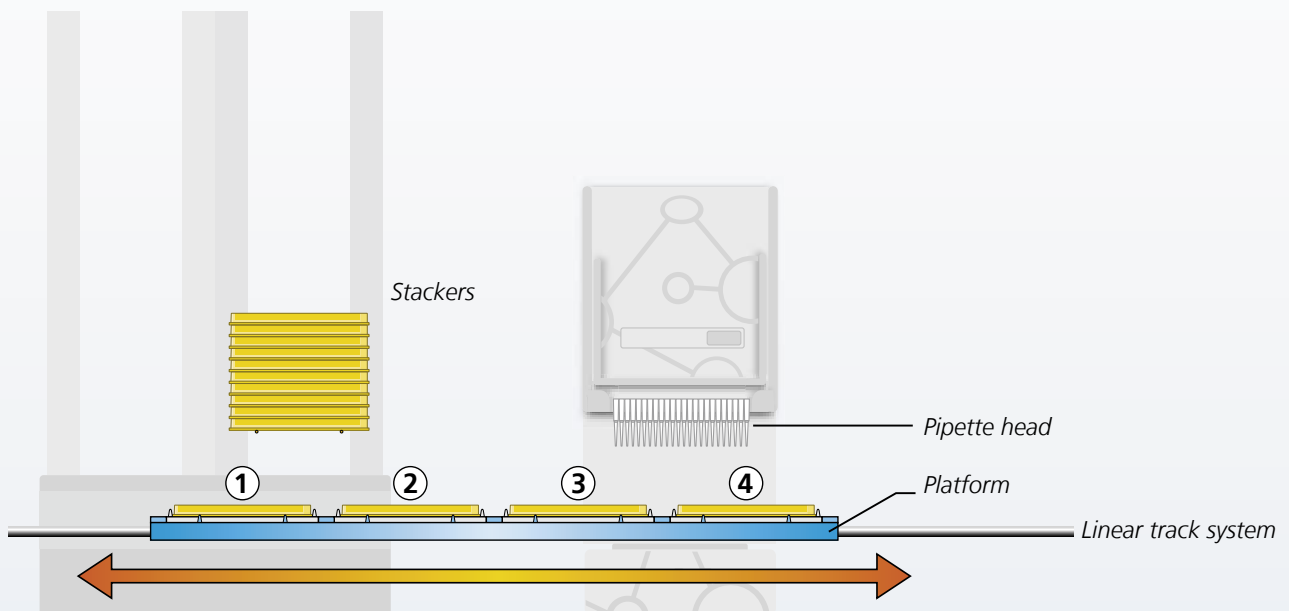
The CyBi®-Well vario adapts into any screening environment and it is compatible with all other CyBio accessories.



## The Solid Base

The CyBi®-Well vario base unit provides fast, exact and secure movement of microplates via a linear plate moving assembly. The plate mover assembly consists of a three-, four- or five-position carriage that provides space for important accessory devices such as an active tip wash station or reagent reservoir. The CyBi®-Well vario is also available in a disk platform configuration, with ten open-access stations in a circular arrangement for the pipetting head to access. This platform, with an expanded number of deck positions, enables the automation of most complex experimental protocols.

The base unit of the CyBi®-Well vario is plug-and-play compatible with a large number of ancillary devices for increased capacity, such as stackers for the storage of microplates or a tip changer for the automatic changing of tip cartridges.



Platform with e.g.

- |                    |                     |
|--------------------|---------------------|
| 1 Process plate    | 3 Reagent reservoir |
| 2 Tip wash station | 4 Process plate     |

## Your Volume Comfort

### Change the head

The defining concept of the CyBi®-Well vario is separation of the pipetting and microplate positioning functions. The CyBi®-Well vario design offers a variety of pipetting heads to optimize pipetting accuracy for a specific volume range, while the positioning table precisely aligns and lifts the microplate under the head. This ensures the robustness and reliability of pipetting and positioning for every run, time after time.

### Secure head, secure accuracy

The CyBi®-Well vario covers a wide range of applications, due to its wide spectrum of heads. The user-friendly head design offers the flexibility to change the pipetting head from the front or the backside of the instrument. Each pipette head maintains its accuracy, precision and calibration, independent of the base, so there is no “teaching” or recalibration necessary after changing pipetting heads.



## Brilliant Heads

The sophisticated portfolio of 8 interchangeable multifold pipette heads already make the CyBi®-Well vario a powerful platform for automated pipetting to different plate formats, sample volumes and applications. Pipette heads with 96 or 384 tips enable fast and precise pipetting to 96-, 384-, and 1536 well microplates. A working volume range of 4 orders of magnitude allows liquid transfers from 25 nL up to 250  $\mu$ L on one platform.

The interchangeable pipette heads with different volume ranges ensure liquid transfers at an optimized, high-precision level, even at low volumes. With the choice of one or more pipette heads, the CyBi®-Well vario can be configured for a tailor made solution. In addition, the CyBi®-Well vario can be reconfigured for future tasks.

96/250  $\mu$ L

- » working volume up to 250  $\mu$ L
- » volume free selectable in 0.1  $\mu$ L steps
- » for 96- or 384 shallow- or deep-well plates

96/25  $\mu$ L

- » working volume up to 25  $\mu$ L
- » volume free selectable in 0.01  $\mu$ L steps
- » for 96- or 384 -well plates

96/60  $\mu$ L

- » working volume up to 60  $\mu$ L
- » volume free selectable in 0.01  $\mu$ L steps
- » for 96- or 384-well plates

384/25  $\mu$ L

- » working volume up to 25  $\mu$ L
- » volume free selectable in 0.01  $\mu$ L steps
- » for 384- or 1536 -well plates

384/60  $\mu$ L

- » working volume up to 60  $\mu$ L
- » volume free selectable in 0.01  $\mu$ L steps
- » for 384- or 1536-well plates

96/2.5  $\mu$ L  
Nanoliter head

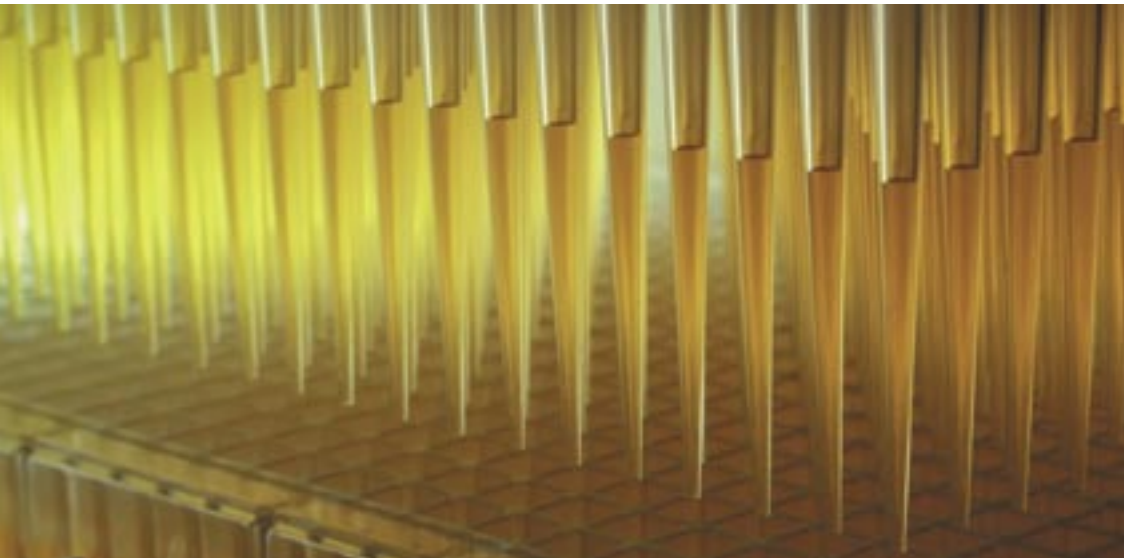
- » for 96- and 384-well microplates
- » for the wet-to-wet transfer of DMSO dissolved compounds
- » specially designed ceramic tips for minimized adhesion
- » minimal volume: 25 nL
- » volume free selectable in 1 nL steps

96/40  $\mu$ L

- » working volume up to 40  $\mu$ L
- » volume free selectable in 0.01  $\mu$ L steps
- » for 96- or 384 -well plates

384/2.5  $\mu$ L  
Nanoliter head

- » for 96- and 384-well microplates
- » for the wet-to-wet transfer of DMSO dissolved compounds
- » specially designed ceramic tips for minimized adhesion
- » minimal volume: 25 nL
- » volume free selectable in 1 nL steps



### CyBi®-Tips for 96-/ 384-channel pipettors

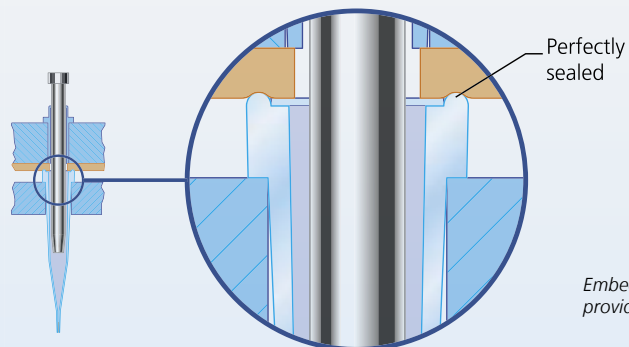
CyBio disposable tips are designed for superior performance of the pipetting heads.

The polypropylene tips are manufactured with a homogenous surface optimized for liquid transfers, and an extremely low nonspecific binding behavior. This reduces dramatically the possibility for cross-contamination in sensitive applications.

CyBio's tip sealing technology works by applying a uniform pressure that partially embeds the top of each tip into a silicone mat to make an airtight seal. This is an additional reason for the high accuracy and precision of the multi-tip pipette system. This tip sealing technology also ensures uniform tip length for enhanced pipetting performance, especially for low volume, dry transfers.

CyBi®-Tips are available as 96- or 384-ready to use tip trays for 250 µL shallow well, 250 µL deep well, 60 µL, 25 µL, and 10 µL maximum volumes, each in standard, sterile or sterile/PCR-certified quality.

*(For detailed information about CyBi®-Tips please use the CyBi®-Tips product catalogue)*

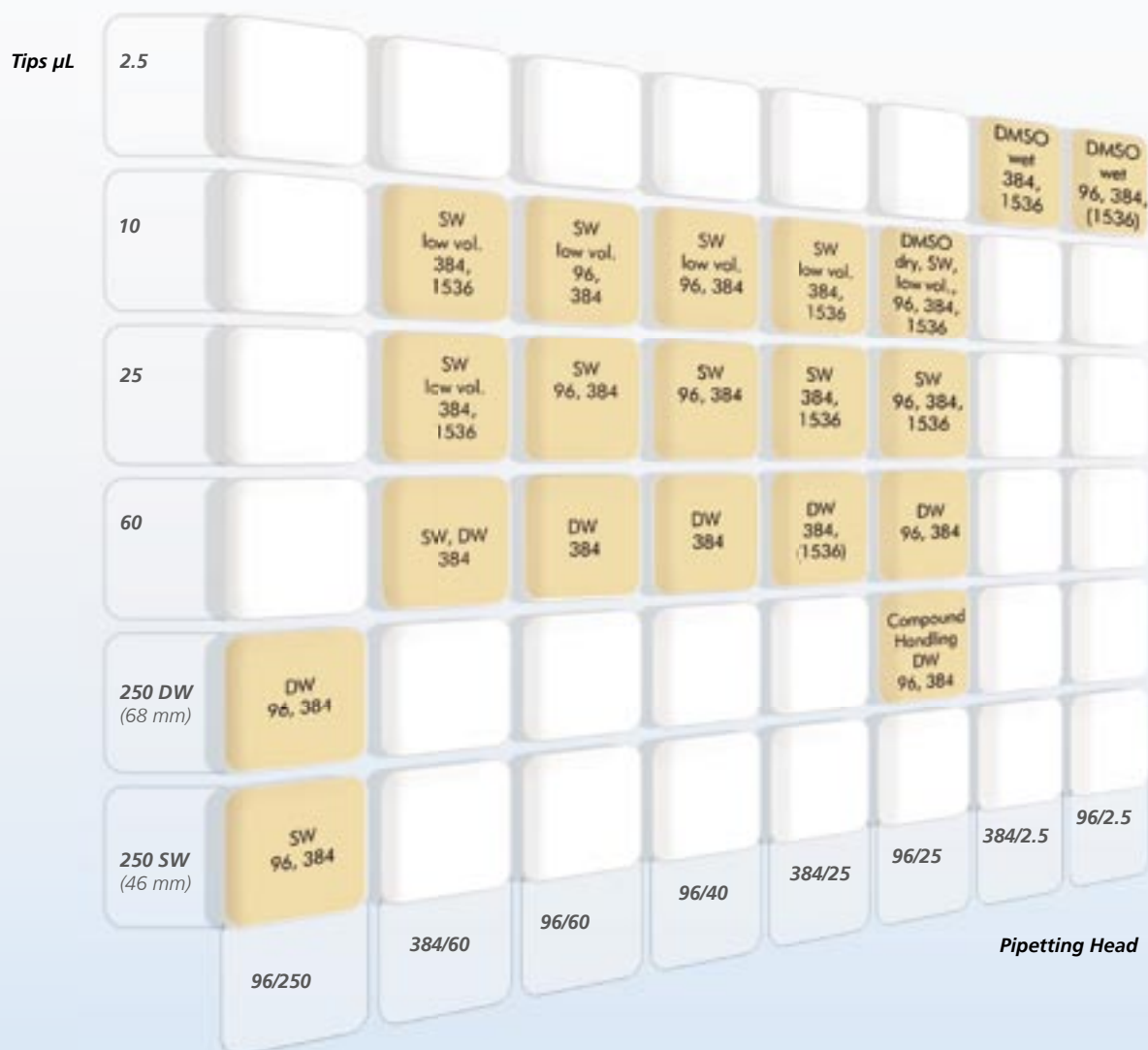


*Embedding the top of tip provides reliable sealing*

## A System of Flexibility

The interchangeable heads of the CyBi®-Well vario, combined with wide range of tip types, create a more flexible product that expands the number of applications which can be automated with this system. In addition, the pipetting- and tip-sealing technology enables further combinations of high-precision low volume pipetting. For example, the transfer of 200 nL DMSO into a dry plate is possible with  $CV \leq 3.5\%$  as a typical result (measured by fluorescence) using a 40  $\mu\text{L}$  or 25  $\mu\text{L}$  pipette head and 10  $\mu\text{L}$  tips.

The CyBi®-Well vario also addresses deep well plates with the use of large volume tips and low volume pipette heads. A 96/25  $\mu\text{L}$  pipette head with a 250  $\mu\text{L}$  deep well tip is able to transfer 1  $\mu\text{L}$  with  $CV \leq 2\%$  (typical result measured by fluorescence).

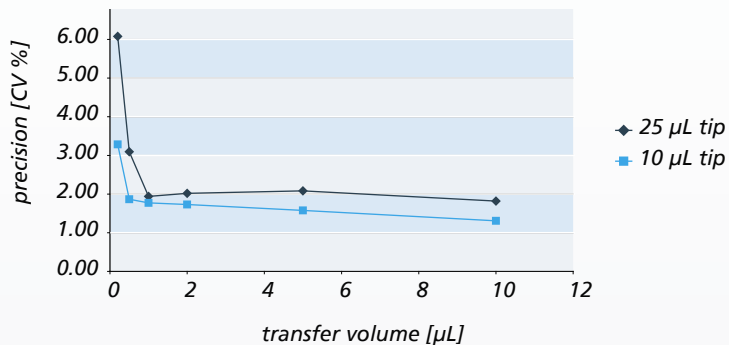


## Because Precision Matters

### One pipette head – optimize your task with different disposable tips

Typical experimental results of the 96/25  $\mu\text{L}$  pipette head: wet-to-dry transfer of different volumes of DMSO with either the 25  $\mu\text{L}$  or the 10  $\mu\text{L}$  disposable tip.

### Precision of the 96/25 $\mu\text{L}$ pipette head



transfer volume	Precision in CV %	
	25 $\mu\text{L}$ tips	10 $\mu\text{L}$ tips
10	1.82	1.31
5	2.08	1.58
2	2.02	1.73
1	1.94	1.77
0.5	3.10	1.87
0.2	6.08	3.29

measured by fluorescence

### Nanoliter head – precise, low-volume compound handling

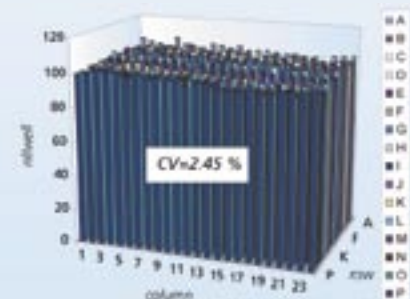
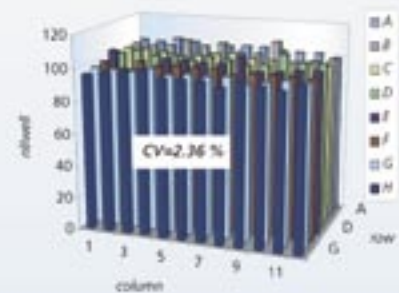
The low volume transfer of compounds with high precision is an important requirement for compound management and assay miniaturization applications. Assay miniaturization limits compound consumption, enables low solvent concentrations (DMSO), especially important for cellular assays, and avoids additional dilution steps. The nanoliter pipette head performs liquid transfer of highest precision for a volume range of 25 to 2500 nL and enables the usage of assay plates with a residual volume in the low microliter range. The results (below) demonstrate typical experimental data.

Volume [nL]	Specification	Experimental data	
	Precision (CV per plate in %)	Precision (CV per plate in %) 96 Head	384 Head
2000	3.00	0.83	1.47
1500	3.00	1.14	1.20
1000	3.00	1.44	2.29
500	5.00	1.86	2.89
200	7.00	1.88	2.63
100	7.00	2.36	2.60
50		4.10	3.92
25		9.82	4.51

measured by absorption

Nanoliter head 96 and 384 – specified values and typical experimental data in dependence of the transfer volume.

Typical results of a 1 step transfer of 100 nL p-Nitrophenol solution (in DMSO) into a 96-well respectively 384-well microplate. Both experiments show a high precision.



## The Core of Integration

*"Without the CyBio system and the support we received with the design and implementation we would not have been able to move so rapidly into the HTP siRNA screening arena. We have essentially increased our throughput three orders of magnitude using a relatively simple robotic set up. More importantly we have delivered and added value to the drug discovery process."*

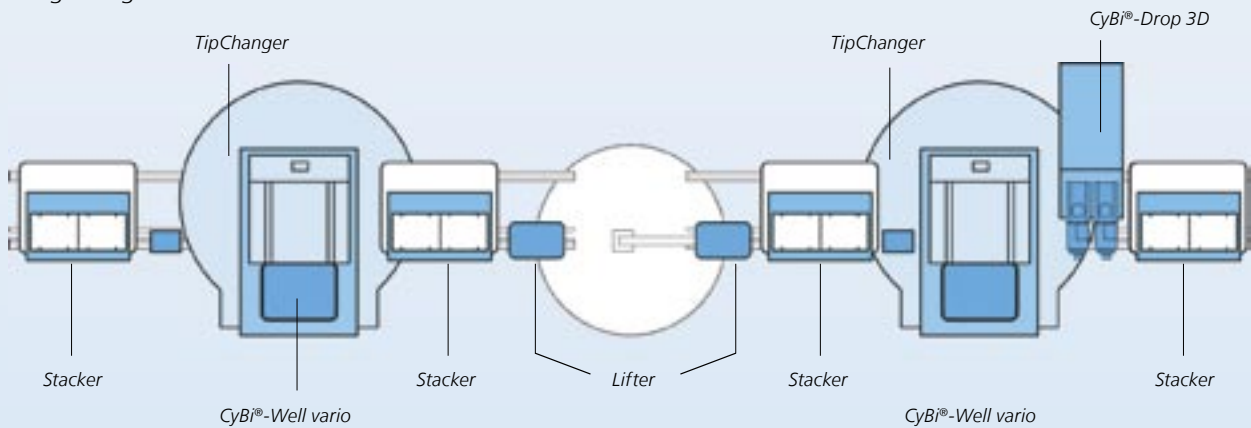
*Chris Kitson (GlaxoSmithKline)*

### CyBio's RNAi-Systems

RNA interference (RNAi) has become, in a remarkably short period of time, a powerful and widely used tool in drug discovery and functional genomics. The general assay compatibility with high density microplates in 96 and 384 format, as well as the simple transfection protocols, enabled a fast adaptation of this technology to high throughput methods.

For high throughput demands, the large integration of the CyBi®-Well vario into an innovative RNAi-screening system (see illustration above), is able to perform 20.000 transient transfections within only 3 hours, including addition of lipid reagent and non-contact dispensing of cells.

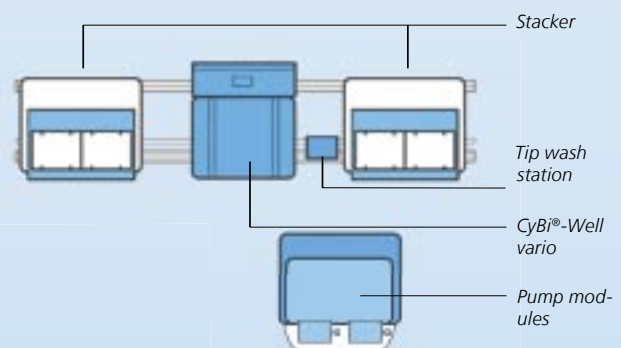
Large integration for RNA interference



Alternatively to tip changing, we offer for medium throughput the small integration of the CyBi®-Well vario with the high efficient tip wash station to avoid cross contamination.

The goal to combine CyBio's competence in HTS automation with the demands of RNAi science and create a robust HTP siRNA system, was successfully reached.

Small integration



## Technical Data

<b>General</b>	
Channels, heads	8 different heads 96 or 384 channel manifold heads for disposable tips and ceramic tips
Tips [ $\mu\text{L}$ ]	250 DW; 250 SW; 60; 25; 10 polypropylene PP disposable-tips in standard-, sterile-, sterile/PCR-certified- or APR-compatible-quality 2.5 ceramic tips
Volume Range/working range	Wet pipetting: 25 nL – 250 $\mu\text{L}$ Dry pipetting: 200 nL – 250 $\mu\text{L}$
Volume Resolution	Head 96/250 0.1 $\mu\text{L}$ Heads 96/25; 384/25; 384/40 0.01 $\mu\text{L}$ Heads 96/2.5; 384/2.5 0.001 $\mu\text{L}$
Plate Formats	Shallow well and deep well microplates: 96; 384; 1536
Plate Positions	3; 4; 5 or 10
Dimensions w / h / d (mm)	284 / 795 / 370
Weight	Approx. 31 kg base unit; 13.6 kg head
Operating conditions	15 to 35 °C; humidity $\leq$ 75 % at 35 °C

<b>Specified volume range</b>			
heads	Specifications		
96/250	10-25 $\mu\text{L} \leq 2\%$	25-250 $\mu\text{L} \leq 1\%$	
384/40	2-5 $\mu\text{L} \leq 2\%$	5-40 $\mu\text{L} \leq 1\%$	
384/25	2-5 $\mu\text{L} \leq 2\%$	5-25 $\mu\text{L} \leq 1\%$	
96/25	2-5 $\mu\text{L} \leq 2\%$	5-25 $\mu\text{L} \leq 1\%$	
384/2.5	0.1-0.25 $\mu\text{L} \leq 7\%$	0.25-0.5 $\mu\text{L} \leq 5\%$	0.5-2.5 $\mu\text{L} \leq 3\%$
96/2.5	0.1-0.25 $\mu\text{L} \leq 7\%$	0.25-0.5 $\mu\text{L} \leq 5\%$	0.5-2.5 $\mu\text{L} \leq 3\%$

*based on absorption measurement*

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