



# Max-Planck-Institut für Molekulare Genetik Berlin

## Pro-Science

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# Multiple Plate Pipetting System

### Summary

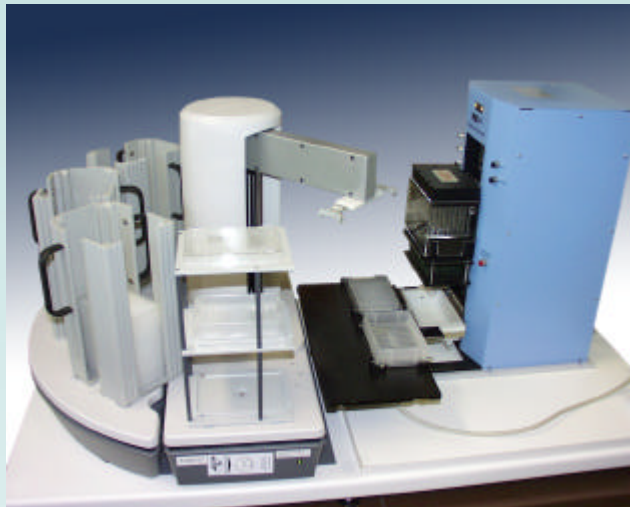
For liquid handling we combined a Hydra PP (upgraded from 96 to 384 syringes) with a Twister for automated handling of source and target plates. This combination is a real walk-away plate processing system that incorporates a up to 100 plates robotic handler with an automated plate positioning and syringe washing system. For controlling the system we developed a program called THapp. THapp provides a graphical user interface, is modular designed and enables the user to control any external device. E.g. using this system it is possible to set up more than 24.000 PCR reactions per working day.

### Flexibility

- THapp uses it's own scripting language. This makes even more complex and complicate jobs
- Each device is programmable and usable as stand alone device.
- THapp processes 96, 384 and 1536 well micro plates.

### Safety

- THapp coordinates each device and prevents mutual obstruction
- It's possible to stop the run at any time
- THapp is logging it's action on the screen - mistakes can be recognised and corrected



System - General View



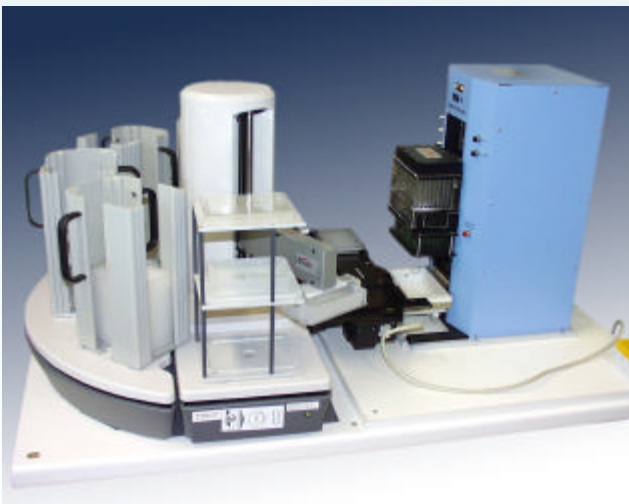
THapp's Init-Screen



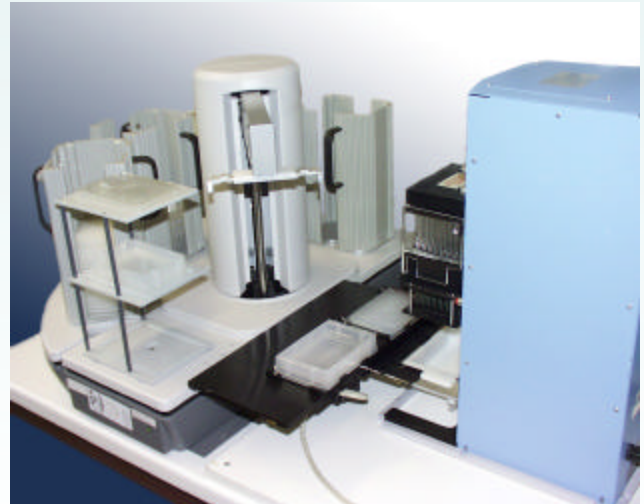
THapp's Main-Screen

```
*PCR Ablauf
*version 1.0
*Washtray befindet sich auf HydraSource
1. Waschen der Hydra ORR
Nachlass (7, 25, 120)
2. Befüllen der 384er PCR-MTP mit PCR-Mix
Beginnloop (1)
DestinationsTwister
SourceAdressstr(1)
SourceAdHydro(1)
Aspirator (5)
DestinationsHydro(1)
Dispense (2)
DestinationsHydro(2)
Dispense (20)
DestinationsHydro(5)
Dispense (20)
DestinationsTwister
DestinationsHydro(6)
Dispense (20)
DestinationsTwister
DestinationsStapel(2)
EndLoop
```

THapp's Scripting Language - an Example



System in action -  
The Twister is moving a buffer trough from our shelf to the automated plate positioning table



The trough is placed - ready for dispensing!