

Materials List for:

# High Sensitivity Measurement of Transcription Factor-DNA Binding Affinities by Competitive Titration Using Fluorescence Microscopy

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URL: <https://www.jove.com/video/58763>

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## Materials

Name	Company	Catalog Number	Comments
Cy5-labeled 16- / 18-bp DNA-oligomers	Eurofins		Custom synthesis
16- / 18-bp DNA-oligomers	Eurofins		Custom synthesis
Nile Blue A	Sigma	N5632-25G	
Sensoplate plus microplate 96- or 384-well, PS	Greiner	655891	175 µm thick glass bottom
384 Well Sensoplate, black	Greiner	788896	
Agarose, low gelling temperature	Sigma	A9414-50G	
Sodium Chloride	Merck	1.06404.1000	
Tween-20	Sigma	P1379-1L	
Di-Potassium hydrogen phosphate trihydrate	Merck	1.05099.1000	
Potassium dihydrogen phosphate	Merck	1.04873.1000	
Q-POD Element	Merck Millipore	ZMQSP0DE1	
Millipak 40 Gamma Gold Filter	Merck Millipore	MPGL04GK2	
Milli-Q Integral 3 Water Purification System	Merck Millipore	ZRXQ003WW	
Quantum TIX	Merck Millipore	QTUMOTIX1	
DL-Dithiothreitol	Sigma	43815-1G	
Mastercycler gradient	Eppendorf	Z316083	
SafeSeal tube 1.5 mL	Sarstedt	72.706.200	
Tube 15 mL	Sarstedt	62.554.502	
Multiply-Pro cup 0.2 mL PP	Sarstedt	72.737.002	
<b>MICROSCOPY SETUP:</b>			
Automated widefield microscope	LEICA	DMI6000	
Long distance objective	LEICA	HCX PL FLUOAR L 60x/0.60 N.A. Dry	
638 nm line continuous diode laser	Omicron	PHOxX 638-40, 40mW	
Back-illuminated EM-CCD Camera	Andor	iXon DV897	
Dichroic mirror	AHF	640nm cut-off	
Bandpass filter	AHF	ET bandpass 700/75	
Linear polarizer	Thorlabs	LPVISC050-MP2	
Polarizing beam splitter	Thorlabs	BS010	
Achromatic lens	Thorlabs	200 mm focal length	
Multimode optical fiber	Optronis	FVP600660710	
<b>ROBOTIC SYSTEM:</b>			

Our robotic system includes a Biomek NXP workstations with a 96-channel head and with Span-8 pipettors, connected with a servo-shuttle, are used for all liquid transfer steps. In addition, the system is equipped with orbital shakers and a microplate reader (Paradigm, Molecular device) served by the Span-8 gripper	Beckman Coulter	Biomek NXP	
<b>SOFTWARE:</b>			
Programming language	National Instruments	Labview 9.0	
Script for the HiP-FA software available at			<a href="https://github.com/GeneCenterMunich/HiP-FA">https://github.com/GeneCenterMunich/HiP-FA</a>