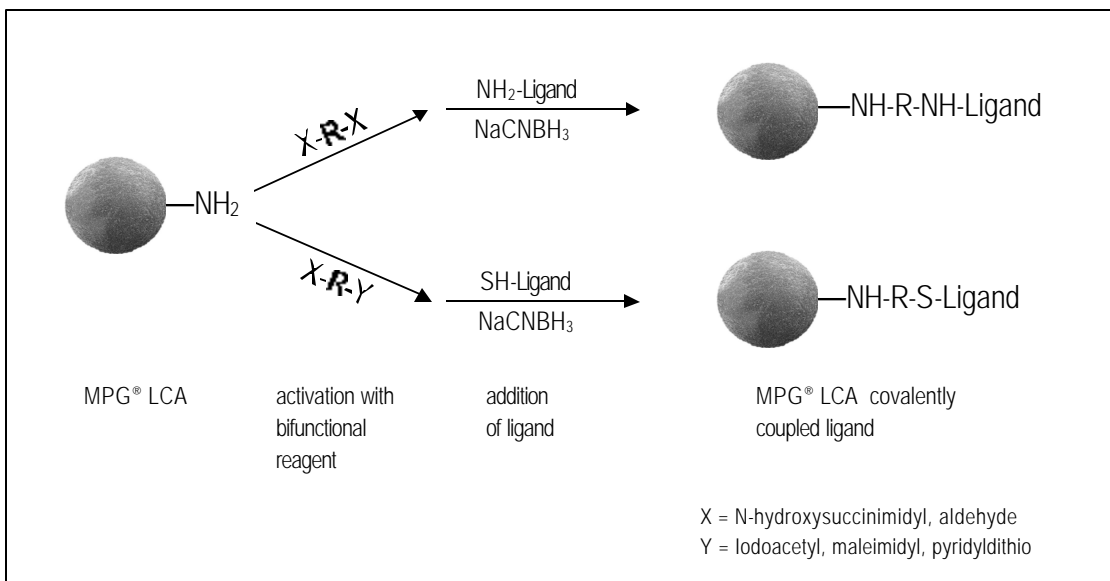


## Products for Biotechnology

With Magnetic Porous Glass (MPG®)

**Protocol No.:** 3.108  
**Product:** MPG® Long Chain Alkylamine (30 mg/ml, 1.2 - 1.8 × 10<sup>8</sup> particles/ml)  
**Procedure:** Covalent Attachment of Proteins.  
**Storage:** Ambient Temperature

PRODUCT NUMBER	DESCRIPTION	VOLUME
MLCA0502	MPG® LCA, 5 µm, 50 nm (500 Å) pore diameter	2 ml (60 mg)
MLCA0510		10 ml (300 mg)



**\*TO COUPLE OLIGONUCLEOTIDES SEE PROTOCOL 3.2**

### General Procedure

**Materials:** (Based on 10 mg MPG® Long Chain Alkylamine, suspended in 10 mM phosphate, pH 7.5, 0.15 M NaCl)

Protein of Interest	Bovine Serum Albumin (BSA)
25% Glutaraldehyde (CHO(CH <sub>2</sub> ) <sub>3</sub> CHO)	Sodium Phosphate, Monobasic (NaH <sub>2</sub> PO <sub>4</sub> )
Sodium Cyanoborohydride (NaBH <sub>3</sub> CN)	Sodium Phosphate, Dibasic, Heptahydrate (Na <sub>2</sub> HPO <sub>4</sub> )
Sodium Azide (NaN <sub>3</sub> )	Magnetic Particle Separator, Prod.No.MPS0301 or MPS0001
Deionized Water (dH <sub>2</sub> O)	Low Speed Rotator
Glycine (H <sub>2</sub> NCH <sub>2</sub> COOH)	1.5 ml Microcentrifuge Tubes
2N Hydrochloric Acid (HCl)	Pipette and Pipette Tips
Sodium Chloride (NaCl)	Vortex Mixer

### Solution

Coupling Buffer  
(10 mM Phosphate, pH 7.5)

Activation Solution  
(5% Glutaraldehyde)

1% Sodium Cyanoborohydride  
Solution (Fresh)

0.75% Glycine Solution

Wash Buffer  
(10 mM Phosphate, pH 7.5, 1.0 M NaCl)

Storage Buffer  
(10 mM Phosphate, pH 7.5,  
150 mM NaCl, 0.1% BSA, 0.02% NaN<sub>3</sub>)

### Preparation

Dissolve 19.2 mg NaH<sub>2</sub>PO<sub>4</sub> and 225.2 mg Na<sub>2</sub>HPO<sub>4</sub>·7H<sub>2</sub>O in 80 ml dH<sub>2</sub>O.  
Adjust to pH 7.5 with 2N HCl, if necessary, and bring volume to 100 ml  
with dH<sub>2</sub>O.

Add 0.2 ml 25% Glutaraldehyde to 0.8 ml Coupling Buffer.

Dissolve 10 mg NaBH<sub>3</sub>CN in 1 ml Coupling Buffer.

Dissolve 7.5 mg Glycine in 1 ml Coupling Buffer.

Dissolve 584.7 mg NaCl in 8 ml of Coupling Buffer. Bring to 10 ml  
with Coupling Buffer.

Dissolve 87.7 mg NaCl, 10 mg BSA and 2 mg NaN<sub>2</sub> in 8 ml of  
Coupling Buffer. Bring to 10 ml with Coupling Buffer.

### **Activation of MPG® Long Chain Alkylamine**

1. Adjust the concentration of MPG® Long Chain Alkylamine to 10 mg/ml. Transfer 1 ml to a 1.5 ml microcentrifuge tube. Magnetically separate the MPG® Long Chain Alkylamine from the solution by placing the tube in a Magnetic Particle Separator for at least 30 seconds. Remove the supernatant by aspiration while the tube remains in the particle separator.
2. Add 1 ml of Coupling Buffer and mix well. Magnetically separate and aspirate the supernatant.
3. Add 1 ml of Activation Solution to the MPG® Long Chain Alkylamine particles, mix well and place in a low speed rotator for 1½ hours at room temperature. Magnetically separate and aspirate the supernatant.
4. Add 1 ml of Coupling Buffer to the activated MPG® Long Chain Alkylamine particles and mix well. Magnetically separate and remove the supernatant. Repeat this step four more times.

### **Coupling of Protein to Activated MPG® Long Chain Alkylamine**

1. Dissolve 2.5 mg Protein in 1 ml of Coupling Buffer.\* Add this mixture and 50 µl of 1% Sodium Cyanoborohydride Solution to the activated MPG® Long Chain Alkylamine particles. Mix well and rotate 3 hours at room temperature. Magnetically separate and aspirate the supernatant.

**\*THE CONCENTRATION OF THE SPECIFIC PROTEIN SHOULD BE TITRATED TO  
ACHIEVE OPTIMAL COUPLING TO THE PARTICLE SURFACE.**

2. Add 1 ml of 0.75% Glycine Solution and 50 µl of 1% Sodium Cyanoborohydride Solution, mix well and rotate 1 hour at room temperature. Magnetically separate and aspirate the supernatant.
3. Add 1 ml of Washing Buffer and mix well. Magnetically separate and remove the supernatant. Repeat this step four more times. The protein-bound MPG® Long Chain Alkylamine is ready to use.

4. For storage, add 1 ml of Storage Buffer to the protein-bound MPG® Long Chain Alkylamine and mix well. Magnetically separate and aspirate the supernatant. Resuspend the protein-bound MPG® Long Chain Alkylamine particles in 1 ml Storage Buffer and store at 4°C.

**FOR TECHNICAL SERVICE ON THIS OR ANY OTHER PureBiotech PRODUCT CALL 866-252-7771  
or e-mail us at [info@purebiotechllc.com](mailto:info@purebiotechllc.com).**

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