

# Product Information

## QSense® QSX 341 Amine Coupling

Immobilizing biomolecules in a functional manner on a sensor surface is a successful way of analyzing biomolecular interactions.

The QSense Amine Coupling Sensor enables covalent immobilization of biomolecules via their amino groups (-NH<sub>2</sub>) to a PEG coating activated with N-hydroxysuccinimide (NHS) (Figure 1). This allows for fast immobilization reactions with the non-reacted NHS groups easily washed off to expose the zero-background PEG coating.

- Delivered with NHS molecules bound
- Fast and easy immobilization reactions
- Can immobilize any molecule of interest with free amine group
- Applications include antibody optimization (Figure 2), protein-protein interactions and probing of conformational changes

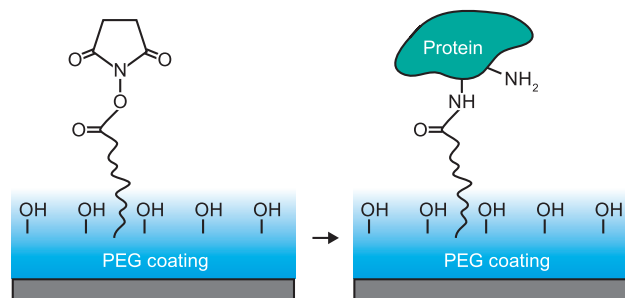


Figure 1. Pre-bound NHS-molecules on QSX 341 replaced via a covalent linkage to the amine groups on the surface of the protein.

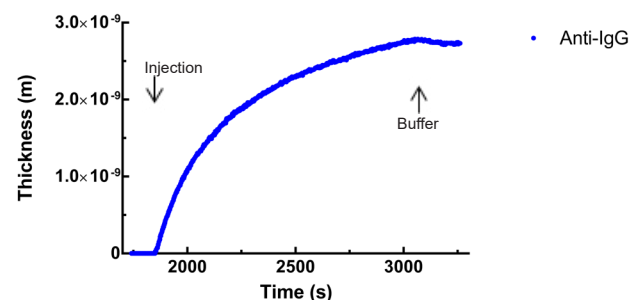


Figure 2. Thickness changes upon interaction of 70 nM Anti-bovine IgG with immobilized bovine IgG on QSX 341.

The QSense sensors are developed and produced to provide you with stable, reliable and reproducible data. Full performance is ensured through extensive quality controls and guaranteed for one-time use according to the recommendations.

### Sensor specifications

Description	NHS-Amine coupling sensor
Surface chemistry	Polyethylene glycol (PEG) 3 nm coating, functionalization with a density of 10 <sup>14</sup> NHS molecules/cm <sup>2</sup> .
Sensor surface base	SiO <sub>2</sub>
Binding	The free NHS molecules on the sensor are replaced with a covalent linkage to the protein via its free amine groups.
Specificity	The zero-background PEG coating eliminates non-specific binding.
Usage	Direct mounting into the instrument from the box without prior cleaning (possibly blow with N <sub>2</sub> gas for dust removal). The sensors come with the appropriate blocking buffer to remove non-reacted NHS molecules.
Storage	Store in original vacuum-bag at -20 to -80 °C. Opened sensors should be stored in vacuum desiccator or in 100% nitrogen environment.
Shelf life	Stable at least 8 weeks from package date in unopened package, see expiry date on package.

Specifications may be subject to change without notice.

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### Suggested immobilization protocol

Below find a suggested protocol for immobilization of protein x which will subsequently be used for interaction studies with a specific ligand (Figure 3). The injection times for protein x and ligand below are not specified as these vary from case to case. Recommended flow rate is 20- 50  $\mu$ l/min.

Note in some cases external parameters such as pH and salt concentration might need to be optimized for the first immobilization step. This is dependent on your molecules of interest.

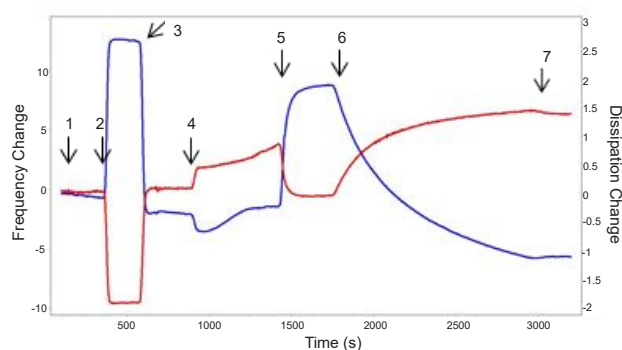


Figure 3. Frequency and Dissipation changes upon immobilization of protein x, subsequent blocking reaction and injection of ligand. The third overtone is depicted.

### Protocol steps

1. Baseline in buffer solution	5 min
2. Injection of protein x (in buffer) to be immobilized	N/A
3. Rinse with buffer solution	5 min
4. Injection of supplied blocking buffer	10 min
5. Injection of buffer solution	5 min
6. Injection of ligand (in buffer)	N/A
7. Injection of buffer solution	5 min

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