



## SPR biosensor selection guide – Pioneer Systems

Biosensor	Part no.	Surface chemistry	Capacity	Immobilization method	Recommended use	Advantages
COOH1	PS00AFB	Planar carboxylated oligoethylene oxide	Low	Amine coupling	Protein–protein, other large molecule kinetic assays when lectin binding may occur, or dextran alternative is desired.	<ul style="list-style-type: none"> <li>• Immobilization of targets without derivatization or tags</li> <li>• Produces a highly stable covalent bond</li> <li>• Can be used to immobilize affinity ligands to create additional capture chemistries (<i>i.e.</i> Protein A, antibodies, etc.)</li> <li>• Effective over a wide pH range</li> </ul>
CDL	19-0127	Thin, low density carboxymethyl dextran layer	Medium	Amine coupling	Measuring accurate kinetics of protein–protein or other intermediate (>1 kDa) to large (>25 kDa) molecule interactions.	<ul style="list-style-type: none"> <li>• Immobilization of targets without derivatization or tags</li> <li>• Biocompatible with a range of molecules</li> <li>• Produces a highly stable covalent bond</li> <li>• Can be used to immobilize affinity ligands to create additional capture chemistries (<i>i.e.</i> Protein A, antibodies, etc.)</li> <li>• Effective over a wide pH range</li> </ul>
CDH	19-0128	Carboxymethyl dextran three-dimensional hydrogel surface with carboxylic acids	High	Amine coupling	Small molecule–protein interactions, fragment screening, or other target interactions with low binding activity. Assays where high capacity is needed.	<ul style="list-style-type: none"> <li>• Immobilization of targets without derivatization or tags</li> <li>• High-capacity dextran surface, ideal for immobilizing a large amount of target for small molecule and fragment analysis</li> <li>• Biocompatible with a wide range of molecules</li> <li>• Produces a highly stable covalent bond</li> <li>• Effective over a wide pH range</li> </ul>
PCH	19-0129	Non-dextran polycarboxylate hydrogel surface	High+	Amine coupling	Small molecule (<1 kDa)–protein interactions, fragment screening, or other target interactions with low binding activity. Assays where high capacity is needed and/or dextran alternative is desired.	<ul style="list-style-type: none"> <li>• Immobilization of targets without derivatization or tags</li> <li>• Highest capacity surface, ideal for immobilizing targets for small molecule and fragment analysis</li> <li>• Provides an alternative to dextran surface</li> <li>• Produces a highly stable covalent bond</li> <li>• Effective over a wide pH range</li> </ul>

Biosensor	Part no.	Surface chemistry	Capacity	Immobilization method	Recommended use	Advantages
HisCap	PS05AFB	Non-dextran polysaccharide three-dimensional surface with carboxylic acids pre-immobilized nitrilotriacetic acid (NTA), regenerable with imidazole, EDTA	High	Capture via His tag	Small molecule or peptide kinetics with His-tagged protein ligands. Large molecule kinetic assays with His-tagged proteins.	<ul style="list-style-type: none"> <li>• Capture capacity high enough for low molecular weight analytes such as fragments</li> <li>• Has a stable baseline, important for accurate kinetic analysis</li> <li>• Provides a convenient means of directed immobilization of His-tagged proteins</li> <li>• Can be regenerated using a variety of conditions, such as imidazole, SDS, or EDTA</li> <li>• Suitable alternative for proteins that are not amenable to amine coupling</li> </ul>
SADH	19-0130	Streptavidin immobilized in three-dimensional carboxymethyl dextran hydrogel	Medium-High	Capture via biotin tag	Intermediate (>1 kDa) to large (>25 kDa) molecule kinetics with biotinylated ligands.	<ul style="list-style-type: none"> <li>• Highly efficient capture in a wide pH range</li> <li>• Requires low quantities of ligand (nanomolar concentrations)</li> <li>• Single step immobilization</li> <li>• Surface has lower electrostatic charge compared to amine coupling sensors</li> </ul>



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