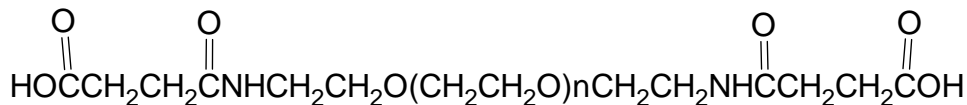




Amino Succinic Acid-PEG-Amido Succinic Acid (ASA-PEG-ASA)

Due to undesirable impurities when manufacturing the CM-PEG-CM products, Laysan now offers ASA-PEG-ASA reagents to take the place of the CM-PEG-CM reagents. The ASA reagent has a free carboxylic acid functionality which can be coupled to an amine through a direct condensation or may be reacted with N-hydroxysuccinimide to create the Succinimidyl Amido Succinate -PEG Succinimidyl Amido Succinate (SAS-PEG-SAS).

The ASA has a stable amide linkage between the succinic acid linker and the amine connected to the PEG. This amide linkage is stable and does not hydrolyze like the succinic acid group used on the multi arm PEG-SA and SS reagents. Since this reagent has an internal amide linkage the reactivity of the free acid is less reactive than the CM functional group. This is a much better choice of reagent when using the NHS ester of the acid because the half-life of the SAS is about 18 minutes in an aqueous solution of pH 8.0 as opposed to about 45 seconds as with the SCM. Therefore there is less loss of active SAS to hydrolysis during reaction in aqueous solutions increasing the desired amide formation.



ASA-PEG-ASA