Claims

1. A water soluble fatty acid derivative comprising a fatty acid or fatty acid ester attached to a water soluble linker, said fatty acid derivative stably attached to a therapeutic protein, wherein the water soluble linker comprises a water soluble polymer, ~~and~~ at least one first functional group attached to the therapeutic protein, wherein the first functional group is an aminooxy group, and a second functional group attached to the fatty acid or fatty acid ester, wherein the second functional group is an aminooxy group.

2. The fatty acid derivative according to claim 1 that binds human serum albumin (HSA) in vitro or in vivo,

has increased half-life relative to a native therapeutic protein, and

wherein the fatty acid is a saturated fatty acid or unsaturated fatty acid.

3. The fatty acid derivative of claim 2 wherein the fatty acid is a branched chain fatty acid.

4. The fatty acid derivative according to any of claims 1-3 wherein the fatty acid comprises a chain length selected from the group consisting of C10, C12, C14, C16, C18, C20, C22, and C24.