

**Supplementary Table 4. Overview of the interactions at the interface between AXIN1 and  $\beta$ -catenin for the mutated amino acids and their predicted effects.**

<b>Amino acid change in AXIN1</b>	<b>Located at interface</b>	<b>Original interaction of side chain</b>	<b>Predicted effect of amino acid change</b>	<b>Expected effect on complex formation</b>
E464K and E464D	No	None, sticks into solution	Side chain remains polar, no effect on solubility	None
N466Y	No, but makes intrahelical hydrogen bond	H bond between side chain oxygen and backbone nitrogen of adjacent residue	Loss of intrahelical hydrogen bond and possibly local destabilization of the helix	Possibly weaker complex formation
Q476K	No	None, sticks into solution	Side chain remains polar, no effect on solubility	None
V478G	Yes	Hydrophobic patch formation at interface	Loss of hydrophobic effect and increased local flexibility due to removal of side chain	Weaker complex formation