

# Characterizing an Unexpected Peak in the UV-Vis Spectrum of T52K

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The water-soluble chlorophyll protein (WSCP) from *Lepidium virginicum* is an ideal model system to study chlorophyll-protein interactions because it binds only four pigments in a symmetric "dimer of dimers" geometry. This makes it easier to isolate and study individual protein-pigment interactions through single-point mutations. Here we report on an unexpectedly large mutation-induced frequency shift — from 670 nm to 645 nm — in the T52K mutant of WSCP, discovered through small-volume screening of a large number of single-point mutants. Unlike the WT protein, the T52K mutant exhibits different absorption peak frequencies depending on reconstitution conditions in a somewhat unpredictable fashion. This poster focuses on identifying the cause of this large frequency shift and reproducibly inducing it.