

Supplementary Table 1: Human HSP Missense Mutations

Human HSP mutation	Human numbering	Drosophila numbering	Likely cause for impairment
p.I344K	344	485	nucleotide binding
p.G346C	346	487	nucleotide binding
p.Q347K	347	488	nucleotide binding
p.Q347P	347	488	nucleotide binding
p.E356G	356	497	oligomerization
p.L360P	360	501	oligomerization
p.P361L	361	502	oligomerization
p.P361S	361	502	oligomerization
p.S362C	362	503	uncategorized
p.R364M	364	505	oligomerization
p.L367S	367	508	oligomerization
p.F368L	368	509	oligomerization
p.F368S	368	509	oligomerization
p.T369P	369	510	oligomerization
p.G370R	370	511	oligomerization
p.R372G	372	513	oligomerization
p.P374R	374	515	oligomerization
p.G377E	377	518	folding/stability
p.L378G	378	519	folding/stability
p.F381C	381	522	folding/stability
p.F381L	381	522	folding/stability
p.G385W	385	526	nucleotide binding
p.G385E	385	526	nucleotide binding
p.N386K	386	527	nucleotide binding
p.K388R	388	529	nucleotide binding
p.M390V	390	531	nucleotide binding
p.S399L	399	540	folding/stability
p.I406V	406	547	folding/stability
p.S407R	407	548	oligomerization
p.G417E	417	558	oligomerization
p.V423L	423	564	folding/stability
p.R424G	424	565	oligomerization
p.L426V	426	567	folding/stability
p.F427C	427	568	folding/stability
p.A428P	428	569	folding/stability
p.P435T	435	576	folding/stability
p.P435L	435	576	folding/stability
p.S436F	436	577	folding/stability
p.D441G	441	582	Mg coordination
p.E442K	442	583	ATP binding
p.D444E	444	585	oligomerization

p.D444N	444	585	oligomerization
p.D444G	444	585	oligomerization
p.L447V	447	588	folding/stability
p.C448Y	448	589	oligomerization
p.R450S	450	591	oligomerization
p.S458R	458	599	folding/stability
p.R459G	459	600	oligomerization
p.R459T	459	600	oligomerization
p.R460C	460	601	oligomerization
p.R460L	460	601	oligomerization
p.L461P	461	602	folding/stability
p.L466V	466	607	folding/stability
p.G471D	471	612	folding/stability
p.N487D	487	629	γ -phosphate sensing, oligomerization
p.P489L	489	631	folding/stability
p.D493G	493	635	oligomerization
p.R498S	498	640	phosphate binding
p.R499C (Arg finger)	499	641	ATP hydrolysis and γ -phosphate sensing
p.R499H (Arg finger)	499	641	ATP hydrolysis and γ -phosphate sensing
p.R503W	503	645	folding/stability/oligomerization
p.R503L	503	645	folding/oligomerization
p.R503G	503	645	folding/oligomerization
p.R514G	514	656	folding/stability
p.G527N	527	669	folding/stability
p.L537P	537	679	folding/stability
p.G546R	546	688	folding/stability
p.L549P	549	691	folding/stability
p.A551Y	551	693	oligomerization
p.A551P	551	693	oligomerization
p.D555N	555	697	oligomerization
p.D555G	555	697	oligomerization
p.A556V	556	698	folding/stability
p.A557V	557	699	folding/stability
p.G559D	559	701	oligomerization
p.R561G	561	703	oligomerization
p.R562Q	562	704	oligomerization
p.N579H	579	721	unclear
p.D584H	584	725	unclear
p.D584V	584	725	unclear
p.W607C	607	749	folding/stability
p.D613G	613	755	oligomerization
p.D613H	613	755	oligomerization
p.T615I	615	757	oligomerization