## Phylogeny

* Member of the Ca²⁺/calmodulin-dependent kinase (CAMK) group and classified within the PSKH sub-family (Manning2002)
* Closest human paralog is the catalytically active PSKH1, sharing ~70 % kinase-domain identity (Shrestha2020)
* Orthologs reported in chimpanzee, gorilla, dog, guinea pig, whale and platypus; gene absent in mouse and rat owing to rodent-specific loss (Caenepeel2004)
* Early kinase catalogues placed PSKH2 in the CMGC/CLK cluster, reflecting historical annotation discrepancies (Hanks1995)

## Reaction Catalyzed

* ATP + protein-Ser/Thr → ADP + protein-O-phospho-Ser/Thr (Hanks1995)
* Human PSKH2 carries an HRN catalytic-loop motif instead of HRD, removing the catalytic Asp required for phosphotransfer (Shrestha2020)

## Cofactor Requirements

* Structural motifs (β3 Lys92, αC Glu108, DFG Asp204) support a Mg²⁺-coordinated active site, but no biochemical cofactor data are available (Shrestha2020)

## Substrate Specificity

* No experimentally defined substrate motif; PSKH2 is absent from current kinase specificity atlases (Shrestha2020)

## Structure

* Single polypeptide comprising an N-terminal segment (~1–70) and a bilobed kinase domain (~71–350); no auxiliary domains (Shrestha2020)
* AlphaFold model AF-Q96QS6-F1 predicts an active-like fold with intact Gly-rich loop (GXGXXS), β3 Lys92–αC Glu108 ion pair, HRN catalytic loop and DFG Asp204 (Shrestha2020)
* Lacks the N-terminal Golgi-targeting sequence present in PSKH1; predicted myristoylation/palmitoylation sites remain unverified (Shrestha2020)
* Contains Asp316 in the C-lobe where PSKH1 has a basic residue, highlighting a conserved surface alteration (Shrestha2020)

## Regulation

* No verified post-translational modifications have been reported (Shrestha2020)
* Mass-spectrometry proximity analysis identified UNC119B as a PSKH2 interactor (Salcedo2023)

## Function

* Expression detected at transcript and protein level in public omics datasets; detailed tissue distribution not yet published (Shrestha2020)
* Knowledge-graph and MS data associate PSKH2 with the Reactome “Cilium Assembly” pathway via UNC119B interaction (Salcedo2023)

## Inhibitors

None reported (Shrestha2020)

## Other Comments

* Absence of the gene in rodent models limits conventional in vivo functional studies (Caenepeel2004)