

**Validated GPCR  
protein sequences**

**align**

PVRQN-GCCMA-KMVLVWLLSASITLPP-L--FG-WAQ  
NTRYS-SKRRVTVMIAIVVLSFTISCPL-L--FG-LNN  
SPTAR-MWPSLCLALQTLWRTHQKESSER-L--FD-LYK  
GTGQS-SCRRVAFMITAVWVLAFAVSCPL-L--FG-LNT  
RSLQNKRSHTV-VSIASVWVFSFLLYGPVIL----SWKN  
⋮

**assign residues  
to GPCR domain**

IIIII-I MMMM-MMMMMMMMMMMMMMMMMMM-M--ME-EEE ✓  
IIIII-IIIIIMMMMMMMMMMMMMMMMMMMMMMM-M--MM-MEE ✓  
II MMMM-MMMMMMMMMMMMMMMMMMMMMMEEEEEEE-E--EE-EEE ✗  
IIIII-IIIIIMMMMMMMMMMMMMMMMMMMMMMMMM-M--MM-MEE ✓  
IIIIIIIIII MM-MMMMMMMMMMMMMMMMMMMMMMM-----MEEE ✓  
⋮

IIIIIIIIII MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMEEE consensus domains

**remove highly  
discordant sequences**

**yes**

**sequences removed?**

**no**

**alignment  
completed**