CSM4 encodes a protein required for accurate chromosome segregation, and was originally identified in a whole-genome expression screen for genes required for meiosis and spore formation. The deletion mutant undergoes both meiotic nuclear divisions and forms spores, but exhibits mild chromosome missegregation and reduced spore viability. Csm4p is a tail-anchored type II membrane protein with a C-terminal segment of polypeptide that serves as an endomembrane system anchor. Transcription of CSM4 in haploid cells is dependent on Adr1p, a global transcription factor that acts during glucose depletion in cooperation with Cat8p. Since Csm4p has no known function other than in diploid sporulation, detection of ADR1-regulated CSM4 transcription in haploid cells is notable and suggests that it may also have an as yet undetermined function in haploids during glucose starvation. CSM4 is also a putative target of Isw2p, an ATP-dependent chromatin-remodeling protein targeted to early meiotic and MATa-specific genes. CSM4 has no known homologs in any other species.