Yau and Hardie 2009:

“Not only can ciliary and rhabdomeric photoreceptors coexist in the same animal, but both phototransduction motifs can coexist and signal light in the same cell, although not exactly for the same purpose. Thus, in the chicken pinealocyte, pinopsin (a c-opsin) and Gt are involved in producing the hyperpolarizing light response for directly curtailing melatonin release; additionally, pinopsin appears to couple to Gα11 (a close homolog of Gq) for phase-shifting the circadian rhythm of the cell, presumably via a PLC pathway. Even in rods and/or cones, Gα11 and PLCβ4 are present (Ferreira and Pak, 1994, Peng et al., 1997) but are apparently not involved in the phototransduction pathway (Jiang et al., 1996). Conversely, a cGMP-gated channel has been found in the rhabdomeric ventral photoreceptor of Limulus (Chen et al., 2001), which may be responsible for at least one component of the light response. CNG channels and a soluble GC are also expressed in *Drosophila* photoreceptors, although in this case they are implicated in axonal path-finding during development rather than phototransduction (Baumann et al., 1994, Gibbs and Truman, 1998). In this perspective, one interesting research direction would be to continue exploring the potential divergence or intersections of the two motifs triggered by a pigment in a given ciliary or rhabdomeric photoreceptor, with one serving a canonical phototransduction role and the other playing a modulatory role or carrying out an unrelated function.”