## **Description of Additional Supplementary Files**

## File name: Supplementary Movie 1

**Description:** 3D variability analysis of archaeal KEOPS, reconstituted with Cgi121 (purple), Bud32 (green), Kae1 (blue) and Pcc1 (yellow), bound to substrate tRNA (orange). The movie highlights the dynamic structure of the tRNA when bound to KEOPS.