## **Description of Additional Supplementary Files**

File Name: Supplementary Data 1

Description: List of antibodies used in this study.

File Name: Supplementary Data 2

Description: List of specific chemicals used in this study.

File Name: Supplementary Movie 1

Description: corresponding to Supplementary Fig. 1c. U2OS cells stably expressing nAC-GFP

were stimulated by 750 nM A23187 to visualize nuclear F-actin polymerization.

File Name: Supplementary Movie 2

Description: corresponding to Supplementary Fig. 1c. Transient formation of nuclear F-actin

after cell division in U2OS cells stably expressing nAC-GFP.

File Name: Supplementary Movie 3

Description: corresponding to Supplementary 1e. Distinct and transient nuclear actin filaments

are detected in replicating U2OS cells stably expressing nAC-GFP.