## File Name: Supplementary Movie 1

Description: TIRFM imaging of a GenEPi expressing HEK293T cell. Video of a representative HEK293T cell transiently expressing GenEPi. Time stamp in seconds, and scale bar 5  $\mu$ m.

File Name: Supplementary Movie 2

Description: Spontaneous beating of differentiated GenEPi cardiomyocytes. Video of a representative spontaneously beating differentiated cardiomyocyte patch. Time stamp in seconds, and scale bar 20  $\mu$ m.

File Name: Supplementary Movie 3

Description: GenEPi-expressing cells response to beating cardiomyocytes in a differentiated microtissue. Video of representative GenEPi expressing cells within a non-dissected spontaneously beating cardiomyocyte patch. Time stamp in seconds, and scale bar 5 µm.

File Name: Supplementary Movie 4

Description: Live imaging of Tg(hsp70:GenEPi) zebrafish heart. Representative video of heart beating in a heatshocked Tg(hsp70:GenEPi) zebrafish. Scale bar 100  $\mu$ m.