**Supplementary Table 1** Number of FOXO3a nuclei and cytoplasmic localization in primordial follicles during the four stages of the estrous cycle

| mouse no. | Proestrus nuclei | Proestrus cytoplasm | Estrus nuclei | Estrus cytoplasm | Metestrus nuclei | Metestrus cytoplasm | Diestrus nuclei | Diestrus cytoplasm |
|-----------|------------------|---------------------|--------------|-----------------|-----------------|-------------------|-----------------|------------------|
| 1         | 124              | 49                  | 278          | 93              | 285             | 73                | 268             | 60               |
| 2         | 131              | 12                  | 274          | 68              | 243             | 31                | 214             | 31               |
| 3         | 144              | 54                  | 130          | 21              | 191             | 28                | 53              | 9                |
| 4         | 67               | 27                  |              |                 |                 |                   | 115             | 37               |
| 5         | 133              | 104                 |              |                 |                 |                   |                 |                  |
Supplementary Table 2 Number of FOXO3a nuclei and cytoplasmic localization in primordial follicles in ovaries treated with tamoxifen

| mouse no. | nuclei  | cytoplasm | nuclei  | cytoplasm | nuclei  | cytoplasm | nuclei  | cytoplasm | nuclei  | cytoplasm | nuclei  | cytoplasm | nuclei  | cytoplasm | nuclei  | cytoplasm |
|-----------|---------|-----------|---------|-----------|---------|-----------|---------|-----------|---------|-----------|---------|-----------|---------|-----------|---------|-----------|
|           | 0.025mg/g | Control | 0.025mg/g | Tamoxifen | 0.05mg/g | Control | 0.05mg/g | Tamoxifen | 0.1mg/g | Control | 0.1mg/g | Tamoxifen |
| 1         |  87      |   16      |  29      |    2      |  67      |   24      |  33      |    7      |  17      |    2      |  29      |   11      |
| 2         |  81      |   10      |  16      |    6      |  38      |   10      |  63      |   18      |  40      |   10      |  79      |   28      |
| 3         |  33      |    6      |  57      |   16      |  39      |    4      |  80      |   14      |  76      |   14      |  62      |   29      |
| 4         |  87      |    8      | 131      |  14      |  84      |   11      |  81      |    9      |  75      |   12      |  94      |   27      |
| 5         |          |           |          |           |          |           |          |           |          |           |  70      |   16      |  67      |   21      |
| 6         |          |           |          |           |          |           |          |           |          |           |          |   39      |       6   |
**Supplementary Table 3** Number of FOXO3a nuclei and cytoplasmic localization in primordial follicles and primary follicles during the estrous cycle following administration of 0.1 mg/g tamoxifen

| mouse no. | Proestrus Control nuclei | Proestrus Tamoxifen cytoplasm | Estrus Control nuclei | Estrus Tamoxifen cytoplasm | Metestrus Control nuclei | Metestrus Tamoxifen cytoplasm | Diestrus Control nuclei | Diestrus Tamoxifen cytoplasm |
|-----------|--------------------------|-------------------------------|-----------------------|----------------------------|--------------------------|-------------------------------|--------------------------|--------------------------|
| 1         | 44                       | 26                            | 81                    | 49                         | 10                       | 3                             | 32                       | 15                       | 52                       | 21                         | 45                       | 31                         | 101                      | 64                       | 70                       | 61                        |
| 2         | 47                       | 17                            | 66                    | 31                         | 120                      | 32                            | 63                       | 49                       | 123                      | 46                         | 68                       | 77                         | 88                       | 41                       | 47                       | 48                        |
| 3         | 109                      | 34                            | 51                    | 33                         | 97                       | 47                            | 1                        | 1                        | 61                       | 41                         | 67                       | 43                         | 179                      | 49                       | 22                       | 23                        |
| 4         | 14                       | 5                             | 109                   | 68                         | 175                      | 59                            | 95                       | 92                       | 111                      | 31                         | 98                       | 55                         | 26                       | 8                        | 77                       | 58                        |
| 5         | 116                      | 54                            | 29                    | 35                         | 124                      | 38                            | 65                       | 46                       | 134                      | 51                         | 38                       | 23                         | 97                       | 20                       | 48                       | 33                        |
**Supplementary Table 4** Number of FOXO3a nuclei and cytoplasmic localization in primordial follicles around antral follicles in ovaries treated with tamoxifen

| tamoxifen (+) | Proestrus around antral follicle | Proestrus except around antral follicle | Estrus around antral follicle | Estrus except around antral follicle | Metestrus around antral follicle | Metestrus except around antral follicle | Diestrus around antral follicle | Diestrus except around antral follicle |
|---------------|---------------------------------|----------------------------------------|-------------------------------|-------------------------------------|----------------------------------|--------------------------------------|-----------------------------------|---------------------------------------|
| mouse no.     | nuclei cytoplasm                 | nuclei cytoplasm                        | nuclei cytoplasm              | nuclei cytoplasm                    | nuclei cytoplasm                  | nuclei cytoplasm                     | nuclei cytoplasm                   | nuclei cytoplasm                     |
| 1             | 56 14                           | 25 35                                   | 20 3                          | 12 12                               | 23 2                             | 22 29                                | 62 11                             | 8 50                                  |
| 2             | 41 3                            | 25 28                                   | 47 12                         | 16 37                               | 27 9                             | 41 68                                | 35 5                              | 12 43                                 |
| 3             | 26 3                            | 25 30                                   | 0 0                           | 1 1                                 | 56 9                             | 11 34                                | 23 7                              | 0 16                                  |
| 4             | 69 3                            | 40 65                                   | 31 8                          | 64 84                               | 50 10                            | 48 45                                | 39 7                              | 38 51                                 |
| 5             | 17 6                            | 12 29                                   | 40 3                          | 25 43                               | 25 4                             | 13 19                                | 22 3                              | 26 30                                 |

| tamoxifen (-) | Proestrus around antral follicle | Proestrus except around antral follicle | Estrus around antral follicle | Estrus except around antral follicle | Metestrus around antral follicle | Metestrus except around antral follicle | Diestrus around antral follicle | Diestrus except around antral follicle |
|---------------|---------------------------------|----------------------------------------|-------------------------------|-------------------------------------|----------------------------------|--------------------------------------|-----------------------------------|---------------------------------------|
| mouse no.     | nuclei cytoplasm                 | nuclei cytoplasm                        | nuclei cytoplasm              | nuclei cytoplasm                    | nuclei cytoplasm                  | nuclei cytoplasm                     | nuclei cytoplasm                   | nuclei cytoplasm                     |
| 1             | 22 9                            | 22 17                                   | 6 2                           | 4 1                                 | 34 9                             | 18 12                                | 51 10                             | 50 54                                  |
| 2             | 21 2                            | 26 15                                   | 47 5                          | 73 27                               | 53 8                             | 70 38                                | 60 9                              | 28 32                                 |
| 3             | 40 5                            | 69 29                                   | 42 7                          | 55 40                               | 27 5                             | 34 36                                | 69 7                              | 110 42                                |
| 4             | 7 0                             | 7 5                                     | 41 4                          | 134 55                              | 54 7                             | 57 24                                | 19 5                              | 7 3                                   |
| 5             | 79 5                            | 37 49                                   | 37 4                          | 87 34                               | 57 14                            | 77 37                                | 59 12                             | 38 8                                  |
**Supplementary Table 5** Number of primordial follicles around which collagen type IV was digested during the estrous cycles

| mouse no. | Proestrus Control | Proestrus Tamoxifen | Estrus Control | Estrus Tamoxifen | Metestrus Control | Metestrus Tamoxifen | Diestrus Control | Diestrus Tamoxifen |
|-----------|------------------|-------------------|----------------|-----------------|------------------|-------------------|----------------|------------------|
|           | digested undigested | digested undigested | digested undigested | digested undigested | digested undigested | digested undigested | digested undigested | digested undigested |
| 1         | 32 | 37 | 86 | 48 | 11 | 16 | 48 | 19 | 24 | 39 | 67 | 22 | 55 | 104 | 100 | 28 |
| 2         | 25 | 39 | 84 | 44 | 103 | 91 | 85 | 43 | 85 | 70 | 107 | 43 | 46 | 68 | 106 | 33 |
| 3         | 80 | 45 | 64 | 38 | 82 | 70 | 1 | 2 | 50 | 45 | 163 | 17 | 105 | 96 | 35 | 6 |
| 4         | 22 | 20 | 122 | 39 | 101 | 106 | 151 | 44 | 62 | 72 | 161 | 31 | 26 | 28 | 126 | 36 |
| 5         | 94 | 52 | 61 | 32 | 79 | 60 | 61 | 30 | 96 | 75 | 65 | 12 | 52 | 52 | 67 | 14 |