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| **Supplementary Table 1:** Primary antibodies and their immunohistochemistry conditions | | | | | | | |
| **Target** | **Host species** | **Clone** | **Supplier** | **HIAR\* (min)** | **Dilution** | **Incubation conditions** | |
|  |  |  |  |  |  | Time (hour) | Temp (°C) |
| AR | Mouse mAb | AR441 | DAKO1 | 2 | 1:75 | 20 | 4 |
| PR | Mouse mAb | PgR 636 | DAKO1 | 2 | 1:1000 | 0.5 | 18 |
| ERα | Rabbit pAb |  | Abcam2 | 2 | 1:50 | 1 | 18 |
| ERβ | Mouse mAb | PPG5/10 | Serotec3 | 2 | 1:50 | 20 | 4 |
| Ki67 | Mouse mAb | MM1 | Leica4 | 4 | 1:200 | 20 | 4 |
| \*Heat induced antigen retrieval by pressure cooking in citrate buffer pH 6 (Hapangama et al, 2012). 1 Ely, Cambridgeshire, UK ; 2 Cambridge, UK ; 3 Oxford, UK ; 4 Newcastle upon Tyne, UK . | | | | | | | |

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| **Supplementary Table 2:** Primer sequences used for qPCR | | | | |
| **Gene** | **qPCR primer sequence** | **Product size (bp)** | **Annealing temp** | **Reference** |
| AR | F:5'AGGATGCTCTACTTCGCCCC3' | 72 | 60°C | Pichler *et al,*2013 |
|  | R: 5'CTGGCTGTACATCCGGGAC3' |  |  |  |
| PR | F: 5’CAGTGGGCGTTCCAAATGA3’ | 83 | 60°C | Henderson *et al.,* 2003 |
|  | R: 5’TGGTGGAATCAACTGTATGTCTTGA3' |  |  |  |
| GAPDH | F: 5'AATCCCATCACCATCTTCA3’ | 83 | 60°C | Gebeh *et al* 2012 |
|  | R:5'TGGACTCCACGACGTTACTCA3’ |  |  |  |

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| **Supplementary Table 3:** Correlation of immuno-scores for Androgen Receptor (AR), Progesterone Receptor (PR), Oestrogen Receptor alpha (ERα), Oestrogen Receptor beta (ERβ) and Ki67 in endometrium and fallopian tube. Values to 3 decimal places.  r= The Pearson correlation coefficient, *P*=P value; BG=basalis glands; FG=functionalis glands; LE=luminal epithelium | | | | | | | |
|  |  |  | **Tube** |  |  |  |  |
| **Endometrium** |  |  | **AR** | **PR** | **ERα** | **ERβ** | **Ki67** |
| **AR** | **BG** | r | 0.386 | -0.26 | -0.159 | 0.019 | -0.066 |
|  |  | P | 0.052 | 0.208 | 0.438 | 0.931 | 0.728 |
|  | **FG** | r | 0.313 | -0.248 | -0.313 | -0.302 | -0.109 |
|  |  | P | 0.298 | 0.393 | 0.238 | 0.315 | 0.698 |
|  | **LE** | r | **0.675** | -0.326 | -0.355 | -0.474 | -0.383 |
|  |  | P | **0.003** | 0.217 | 0.162 | 0.075 | 0.105 |
| **PR** | **BG** | r | 0.28 | -0.146 | 0.164 | -0.364 | 0.246 |
|  |  | P | 0.185 | 0.485 | 0.403 | 0.074 | 0.183 |
|  | **FG** | r | 0.147 | 0.041 | -0.324 | -0.237 | *0.426* |
|  |  | P | 0.55 | 0.863 | 0.655 | 0.289 | *0.034* |
|  | **LE** | r | 0.218 | -0.091 | 0.413 | -0.173 | **0.544** |
|  |  | P | 0.418 | 0.788 | 0.079 | 0.492 | **0.009** |
| **ERα** | **BG** | r | 0.256 | **0.567** | **-0.561** | -0.012 | 0.297 |
|  |  | P | 0.263 | **0.006** | **0.002** | 0.955 | 0.125 |
|  | **FG** | r | 0.05 | 0.33 | **-0.56** | -0.088 | 0.101 |
|  |  | P | 0.866 | 0.229 | **0.013** | 0.755 | 0.682 |
|  | **LE** | r | 0.217 | -0.361 | 0.293 | 0.159 | 0.072 |
|  |  | P | 0.456 | 0.17 | 0.197 | 0.543 | 0.759 |
| **ERβ** | **BG** | r | *0.479* | -0.061 | 0.039 | 0.227 | 0.185 |
|  |  | P | *0.028* | 0.788 | 0.842 | 0.276 | 0.347 |
|  | **FG** | r | **0.524** | 0.304 | -0.011 | 0.173 | 0.253 |
|  |  | P | **0.045** | 0.252 | 0.963 | 0.521 | 0.282 |
|  | **LE** | r | 0.227 | 0.137 | 0.272 | **0.524** | -0.026 |
|  |  | P | 0.365 | 0.561 | 0.198 | **0.018** | 0.901 |
| **Ki67** | **BG** | r | -0.375 | 0.229 | 0.201 | 0.132 | 0.319 |
|  |  | P | 0.059 | 0.26 | 0.296 | 0.531 | 0.07 |
|  | **FG** | r | 0.0785 | 0.226 | -0.032 | -0.101 | *0.44* |
|  |  | P | 0.765 | 0.367 | 0.886 | 0.646 | *0.036* |
|  | **LE** | r | -0.002 | 0.109 | 0.147 | 0.041 | **0.606** |
|  |  | P | 0.992 | 0.628 | 0.473 | 0.854 | **0.0005** |

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| **Supplementary Table 4:** Correlation between immuno-scores for different steroid receptors, Androgen Receptor (AR), Progesterone Receptor (PR), Oestrogen Receptor alpha (ERα), Oestrogen Receptor beta (ERβ) and Ki67 between premenopausal endometrial basalis glands and fallopian tube epithelium.  r= Pearson correlation coefficient, *P*=P value. | | | | | | |  |  |  |
|  |  | **AR** | **PR** | **ERα** | **ERβ** | **Ki67** |  |  |  |
| **AR** | r |  | -0.25 | -0.1 | -0.30 | -0.29 |  |  |  |
|  | P |  | 0.18 | 0.479 | 0.118 | 0.103 |  |  |  |
| **PR** | r | -0.25 |  | -0.1 | 0.12 | 0.27 |  |  |  |
|  | P | 0.18 |  | 0.609 | 0.544 | 0.127 |  |  |  |
| **ERα** | r | -0.1 | -0.1 |  | 0.04 | -0.35 |  |  |  |
|  | P | 0.479 | 0.609 |  | 0.848 | 0.057 |  |  |  |
| **ERβ** | r | -0.30 | 0.12 | 0.04 |  | 0.19 |  |  |  |
|  | P | 0.118 | 0.544 | 0.848 |  | 0.318 |  |  |  |

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| **Supplementary Table 5:** Correlation between immuno-scores for different steroid receptors, Androgen Receptor (AR), Progesterone Receptor (PR), Oestrogen Receptor alpha (ERα), Oestrogen Receptor beta (ERβ) and Ki67 between premenopausal endometrial functionalis glands and fallopian tube epithelium. | | | | | | |  |  |  |
|  |  | **AR** | **PR** | **ERα** | **ERβ** | **Ki67** |  |  |  |
| **AR** | r |  | -0.12 | -0.2 | -0.20 | 0.06 |  |  |  |
|  | P |  | 0.684 | 0.592 | 0.491 | 0.837 |  |  |  |
| **PR** | r | -0.12 |  | -0.3 | 0.25 | **0.83** |  |  |  |
|  | P | 0.684 |  | 0.239 | 0.271 | **<0.0001** |  |  |  |
| **ERα** | r | -0.2 | -0.3 |  | 0.26 | -0.42 |  |  |  |
|  | P | 0.592 | 0.239 |  | 0.254 | 0.094 |  |  |  |
| **ERβ** | r | -0.20 | 0.25 | 0.26 |  | -0.12 |  |  |  |
|  | P | 0.491 | 0.271 | 0.254 |  | 0.651 |  |  |  |

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| **Supplementary Table 6:** Correlation between immuno-scores for different steroid receptors, Androgen Receptor (AR), Progesterone Receptor (PR), Oestrogen Receptor alpha (ERα), Oestrogen Receptor beta (ERβ) and Ki67 between premenopausal endometrial luminal epithelium and fallopian tube epithelium. | | | | | | |  |  |  |
|  |  | **AR** | **PR** | **ERα** | **ERβ** | **Ki67** |  |  |  |
| **AR** | r |  | 0.04 | -0.5 | -0.30 | -0.37 |  |  |  |
|  | P |  | 0.906 | 0.091 | 0.292 | 0.109 |  |  |  |
| **PR** | r | 0.04 |  | 0.2 | 0.16 | **0.48** |  |  |  |
|  | P | 0.906 |  | 0.571 | 0.535 | **0.025** |  |  |  |
| **ERα** | r | -0.5 | 0.2 |  | 0.15 | 0.11 |  |  |  |
|  | P | 0.091 | 0.571 |  | 0.521 | 0.635 |  |  |  |
| **ERβ** | r | -0.30 | 0.16 | 0.15 |  | 0.07 |  |  |  |
|  | P | 0.292 | 0.535 | 0.521 |  | 0.778 |  |  |  |

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| **Supplementary Table 7:** Correlation between immunoscores for different steroid receptors, Androgen Receptor (AR), Progesterone Receptor (PR), Oestrogen Receptor alpha (ERα), Oestrogen Receptor beta (ERβ) and Ki67 in premenopausal tubal epithelium.  r= Pearson correlation coefficient, *P*=P value. | | | | | | |
|  |  | **AR** | **PR** | **ERα** | **ERβ** | **Ki67** |
| **AR** | r |  | -0.271 | -0.409 | -0.105 | 0.121 |
|  | P |  | 0.222 | 0.073 | 0.688 | 0.555 |
| **PR** | r | -0.271 |  | -0.288 | 0.028 | 0.135 |
|  | P | 0.222 |  | 0.194 | 0.915 | 0.51 |
| **ERα** | r | -0.409 | -0.288 |  | 0.389 | 0.023 |
|  | P | 0.073 | 0.194 |  | 0.055 | 0.907 |
| **ERβ** | r | -0.105 | 0.029 | 0.389 |  | -0.244 |
|  | P | 0.688 | 0.915 | 0.055 |  | 0.262 |